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The Longbrake Letter*

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I. U.S. Economy and Global Economies Trudging Along With Lackluster Growth; Near-Term Risks Have Abated, but Long-Term Risks Continue to Build Slowly; Placing the “Recession Watch” on the Shelf for the Time-Being

Financial markets panicked at the beginning of 2016. Commodity prices crashed, especially the price of oil, financial conditions tightened substantially, worries about slowing global economic growth, particularly a significant slowdown in China, crescendoed, and capital poured out of many emerging market economies while their currencies plummeted. For a moment in time it appeared that the day of reckoning had arrived and global recession might be imminent.

But three months later, the angst that was so palpable in January and February seems more than a bad dream. Optimism and risk-taking once again are in the ascendancy.

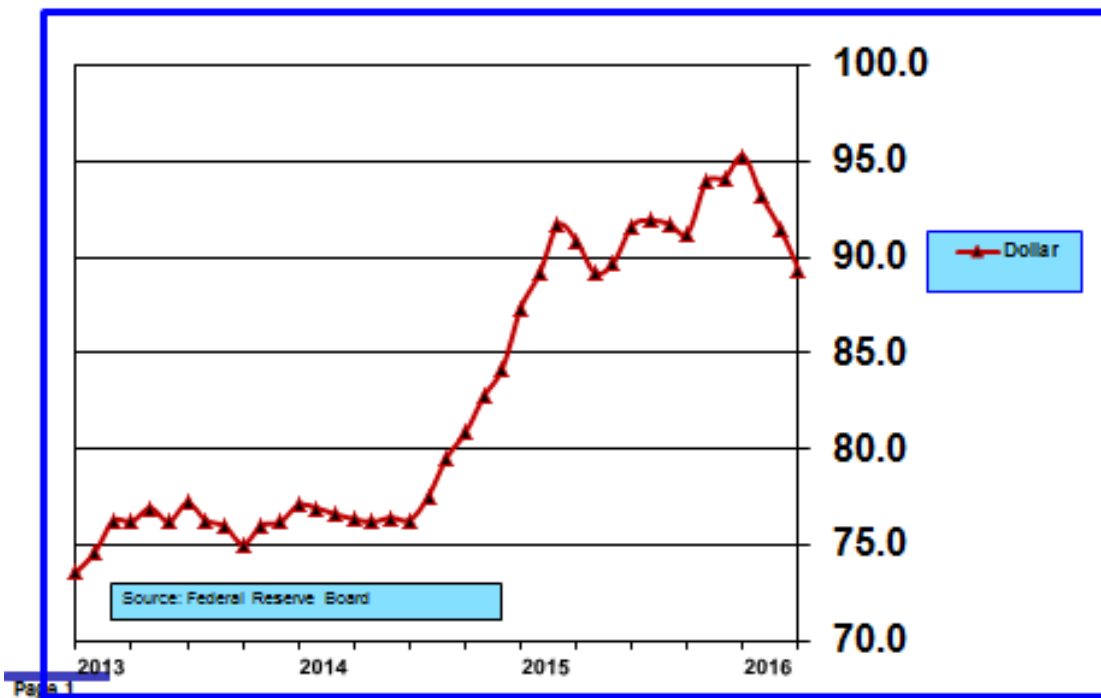
What changed the dynamics? First, bursts of anxiety often feed on themselves emotionally and conjure up beliefs that risks are much greater than they really are. Emotion certainly contributed to amplifying market turmoil early in the year. But, the fact that turmoil was short-lived and rather quickly turned into a resumption of optimism and risk taking must be attributed to policy intervention, primarily by the U.S. Federal Reserve Bank and by Chinese policymakers.

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

1. U. S. Monetary Policy and the Value of the Dollar

Between July 2014 and March 2015, the trade-weighted value of the U.S. dollar in terms of major global currencies rose 20.1 percent (see **Chart 1**). It rose a further 3.9 percent from March 2015 to January 2016, but most of this further increase occurred in the months of November, December, and January. Much of this dollar strength was driven by stronger growth in the U.S. economy relative to other developed economies and by the market's expectation that U.S. monetary policy would tighten relative to the monetary policies of other developed economies, primarily those of Europe and Japan. The Federal Open Market Committee (FOMC) reinforced the expectation of a significant divergence in global monetary policies with its projection of four 25 basis points increases in the federal funds rate during 2016.

CHART 1 – U.S. Dollar (Trade-Weighted Major Currencies)



Dollar strength coupled with falling demand for commodities, as well as falling commodity prices, put acute financial stress on commodity-exporting emerging economies.

2. China's Bungled Currency Management and Growth Scare

Commodity prices wilted in part because substantial additional supply came on line at the same time that global demand growth subsided. China played a primary role in changing demand dynamics as it attempted to pursue a policy of restructuring its economy to emphasize investment in housing and infrastructure less and emphasize consumption more. At the same time, China's pursuit of growth through investment, particularly in housing, had resulted in the buildup of large inventories of raw materials.

China's economic restructuring resulted in slower growth, but it also contributed to slower growth in commodity-exporting nations.

Then, just at the time that the global financial market was beginning to unfold, China changed the way in which it managed its currency exchange rate. Essentially and ostensibly because of China's entry into the International Monetary Fund's special drawing rights program in November, it shifted its exchange rate policy from an implicit peg to the dollar to a basket of global currencies. However, this shift was not explained well and thus added to market confusion and uncertainty, which quickly morphed into fears that China faced an imminent collapse in its growth rate.

3. Federal Reserve Eases Monetary Policy

By mid-February the markets had overreacted to such an extent that a natural reversal process emerged as investors began to take advantage of oversold conditions and the yield consequences of much tighter financial conditions. Simultaneously, various Federal Reserve speakers soothed market emotions with conciliatory language about a more measured approach to monetary policy. This was later confirmed at the March FOMC meeting when participants reduced the median estimate of 25 basis points increases in 2016 from four to two.

In anticipation of easier U.S. monetary policy the value of the dollar began to decline in early February and by the end of April the dollar had declined 6.2 percent from its January high and was 2.5 percent below its March 2015 level. This development had two effects. First, it helped reduce market anxiety. Second, and more importantly, it relieved financial pressures on emerging market economies.

4. China Reinstated Currency and State-Infrastructure Spending Policies

China's growth scare, which was greatly overblown to begin with, began to subside as China went back to managing its currency in a way that reduced daily volatility relative to the dollar. The decline in the dollar's value greatly aided this reversion in policy.

In addition, Chinese authorities went back to sure-fire policy of achieving growth targets by promoting housing and infrastructure investment. Recent data reports indicate a sharp increase in housing prices over the last three months in spite of a substantial supply of unsold homes. The knock-on effects of this stimulus on other parts of China's economy have also been apparent in recent data reports. In the long run this is a very short-sighted policy because it depends on ever increasing amounts of debt leverage and delays the necessary development of a consumer economy. But in the short run it has had the desired effect of calming global financial markets.

5. Commodity Prices Rebound

Commodity prices bottomed in mid-February; the price of oil hit its lowest level on February 11, 2016. Looking back, it is clear that one can date the unwinding of the global financial market panic from this date.

Three factors drove the price reversal. First, panicked selling and forced liquidation, including margin calls, will always lead to price levels that are lower than justified by supply-demand fundamentals during a market panic. Thus, eventually values became compelling and buyers reentered the market resulting in a reversal of price momentum. Second, low prices usually result in increased demand, but with lags that sometimes take a long-time to unfold. For example, the reduced price of gasoline has led to upward surge in total miles driven in the U.S. after several years of stability. Over time, as consumers become more convinced that low prices are here to stay, consumers will probably buy more less fuel-efficient vehicles. Third, investor sentiment has now shifted from fear to greed. In other words, investors are piling into speculative trades with the expectation that prices will go up. For a while this is self-fulfilling because it creates artificial higher demand relative to supply. There is some pretty analytically solid fundamental demand and supply analysis that indicates that the price of oil should fluctuate between \$25 and \$50 a barrel for the next several years. From mid-February to now the price of oil has moved from the low end of the range to the top of the range.

6. Short-Term Policy Accommodation Has Masked the Continued Build Up in Global Economic and Financial Imbalances

Policy has been successful in dampening concerns about a sharp deceleration in global growth, but this should not be confused with believing that policy has mitigated the underlying imbalances that spawned concerns in the first place. The global imbalances that I described in the *February Longbrake Letter* remain deeply entrenched. Policy has eliminated the headache and fever for the time being but the underlying causes of the disease that caused the headache and fever remain.

As a reminder, when palliative measures are undertaken in lieu of direct intervention to treat underlying causes, life can go on for a very long time seemingly as though everything is just fine, while the disease continues its steady advance. We know from the virulence of past crises which were preceded by “kick the can down the road” policies, that when the day of reckoning ultimately arrives, as it must, the consequences are greater than they would have been if unpleasant, but necessary, corrective policies had been pursued earlier.

7. Putting the Recession Watch on the Shelf

For those of you who have been long-time readers of this letter, you will recall how I began to talk about the coming recession as early as 2005. It did not arrive until the beginning of 2008. I simply underestimated the powerful speculative forces and market-calming policies at work, which helped delay for much longer than I thought possible the inevitable reversal and recession. My sense is that we are now in a similar period. Policy is still sufficiently effective to paper over real problems. Today, as then, the core imbalances have to do with supporting growth through excessive leverage. Many details are different in today’s global economy, but the fundamental source of global imbalances is overreliance on forcing growth above its natural rate based upon population growth and real gains in productivity by printing money and increasing debt leverage relative to output. Policy can sustain such a house of cards for a long time, longer than I often expect, but not indefinitely.

Rather than try to explain each month why a “recession watch” is merited, I’ll defer that discussion

for the time being and concentrate instead on discussion more specific economic and political issues and trends.

II. Rise of Global Populist Political Movements

Developments in the U.S. and elsewhere in the world over the past several years are providing growing impetus to the forces of populism and nationalism, particularly in developed countries. Although the specific characteristics of these developments differ from country to country, they stem from consequences of economic policies that have had uneven impacts on individuals and from fragmentation of the established political order including increasing sectarian and religious conflicts and forced mass migrations of minority populations.

Growing income inequality and the hollowing out of the middle class in the U.S. has been a slowly evolving trend since 1980 but has accelerated in the aftermath of the Great Recession.

In Europe, differences in economic opportunity across member countries have been exacerbated by the absence of a robust fiscal transfer mechanism and the strictures imposed on member countries by the common currency — monetary policy cannot be used by individual members to ameliorate employment challenges. Thus, in low productivity countries, such as Spain, Portugal, and Italy, fiscal austerity and the absence of a robust fiscal transfer mechanism have forced a decline in the standard of living and exacerbated income inequality. This has fueled a resurgence in nationalism and given impetus to populist political movements.

Elsewhere in the world, income inequality has declined as many emerging nations experienced a substantial acceleration in growth due to increasingly efficient global financial markets that provided prodigious amounts of financing to emerging market economies. Cheap labor in emerging markets economies and China's sheer size and commitment to rapid growth through investment in export-oriented industries and infrastructure development have been powerful drivers of this growth. Now China is near the end of its ability to drive high growth and the spillover effects to emerging economies are already evident.

Economic theory is unambiguous in its embracement of the efficacy of open borders and free migration of people to boost economic growth and well-being. Relatively liberal immigration policies have fueled the U.S.'s economic growth and success over many decades. When the European Union was constituted a key component was the free movement of people without regard to national boundaries, which was embedded in the Schengen Agreement.

But, uncontrolled immigration has always encountered resistance, particularly in times of economic hardship because immigrants typically are willing to work for lower compensation. Resistance occurs because people fear they will lose their jobs and then there is also xenophobia — they are not like us. While immigration works to the overall benefit of the population collectively, it creates hardships for individuals.

In the U.S. and Europe, economic stagnation has heightened angst about immigration and both developments have combined to drive increasingly broad-based political populist movements.

The failure of established political parties to step up to challenges threatening the way of life for many of its citizens has unleashed increasingly widespread popular anger.

In the U.S., political analysts have been surprised by developments in this year's presidential election campaign. Mainstream Republicans did not expect Donald Trump to poll so strongly that he has now become the Republican Party's presumptive presidential nominee. Democratic leaders are surprised at the popular strength of Bernie Sanders, who is an avowed socialist.

On June 23, British voters will go to the polls to vote on whether to remain in the European Union (EU). While most analysts expect the British electorate will vote against Brexit, as it is called, the polls suggest the possibility of such an outcome is still very much in play. Brexit would damage the U.K. economy and undermine the viability of the EU, but this truism may be insufficient to turn the populist tide of nationalism.

In Germany, The Alternative for Germany (AfD) political party is slowly gathering momentum and is like to poll well in the 2017 German national elections. Although the AfD is unlikely to capture sufficient votes to gain real power, its existence and its strong xenophobic message are fueling populism in Germany and impacting policy choices of mainstream German political parties.

Each of these major populist movements — Trump, Brexit, and AfD ascendancy in Germany — have little probability of success. But all it would take would be for one of the three to prevail to have significant impact on the established global economic and political order. And, even if all three fail to gain traction in the short run, ongoing economic stagnation and inability of established political parties to respond to the significant challenges facing their nations will continue to fuel growing anger and buttress the influence of populist demagogic leaders.

Intellectuals can logically explain all the reasons that populist movements will create worse problems. Does Donald Trump really believe that enacting trade tariffs to combat China's unfair trade competition will have a good outcome? Whether he does or does not is of little consequence. This proposed policy is simply responding to the deep-seated anger of many Americans who have experienced declining living standards that China is a villain in their plight.

Populist movements are based on emotion, not reason. When the emotion turns to anger and that anger is widespread, the elements are in place to foster revolution. All that is needed is a spark and a leader. In a different era, Donald Trump would long since have been dismissed as a credible leader. But in an era of intense anger about what has happened to millions of Americans and in an era of intense partisanship in which neither major political party has focused on developing workable responses to improve living standards or opportunities, and in an era in which political inertia and paralysis is the order of the day, emotion trumps reason.

We are in a period of history in which there is great instability in the established global economic, social, and political order. History tells us that instability favors demagogic leaders who appeal to emotion rather than reason and that change will occur eventually, but all too often in an uncontrolled and disruptive manner. Eventually, a new stability will emerge, but from the vantage point of the present it is difficult to discern what it might look like. One can hope that change comes from within rather than from without, that is via revolution. But history indicates that it is difficult to change the old order and typically the old order must be destroyed before the new one can take its place.

When I use the word “revolution” I am not suggesting that the U.S. democratic and constitutional governance system is in jeopardy, What I am suggesting, however, is that the existing political parties and how they function within our constitutional system is in jeopardy.

People are angry for a reason. The existing system is not meeting their needs. We have known this for a very long time through polling results which indicate that a growing number of Americans believes the country is on the wrong track. Patience has frayed; anger has built; circumstance has brought us Donald Trump. We may not end up with a Trump presidency, but regardless of that, we have reached the tipping point for American politics. Our political order will be different in the future and, I hope, will be one that will address effectively and forthrightly the challenges America faces. But, such an outcome is not a given and, therefore, nothing should be taken for granted.

III. Global Macroeconomics — Viewpoint (ETM Analytics)

In this section I summarize ETM Analytic’s views of trends in global macroeconomics, which were summarized in a five-part series published by Stratfor, a proprietary global economics and foreign policy think tank. ETM Analytics’ views on building global imbalances generally parallel my own.¹ ETM Analytics is an economic and financial advisory firm with offices in the U.S. and South Africa.

1. Reserve Currency — Benefits and Responsibilities

The central line of argument begins with a statement of fact. The U.S. is an economic powerhouse and leads the global economic system. The thesis is that flaws in the U.S. designed global economic order led to the great global financial crisis of 2008 and rather than addressing those flaws, U.S. economic policy has “doubled down” on the very policies that fostered the crisis. And what is the fundamental flaw? It is creating prodigious amounts of debt that are growing at a much faster rate than overall global output. In my own words, we are on a drunken debt driven global economic expansion that ultimately will be unsustainable. In the words of ETM Analytics: “... if this grand gamble fails to pay off, the global financial system could undergo a profound and unstable transition.”

The U.S. emerged from World War II as the dominant global economic power. The dollar replaced the British pound as the global reserve currency. ETM Analytics states two “lessons” that accompanies the role of serving as the global reserve currency:

Lesson 1: *“Establishing a global currency reserve requires a nation to be supremely productive; to be a creditor to other nations; and to build trust in (and establish the need for) its currency.”*

And indeed, following World War II American was an extraordinarily productive economy. Its productivity was financed not only from within, as is the normal state of affairs for nations, but also by foreign countries by virtue of its role in serving as the international reserve currency. The global need for dollars to

¹“Lessons Learned From a Grand American Gamble,” April 25, 2016; “The Winter of our Financial Discontent,” April 26, 2016; “Exit the Dragon,” April 27, 2016; “The Real Currency War,” April 28, 2016, Stratfor Global Macroeconomics — a collaboration with ETM Analytics.

finance global trade benefited American economic growth. This phenomenon is known as the “exorbitant privilege.”

Lesson 2: *“There is an inevitable tension surrounding the exorbitant privilege’ — the natural order resists it, and the countries that have it resist giving it away. That tension leads to periodic changes in the monetary order, changes that bring financial instability.”*

Thus, the U.S. grew its economy through creation of debt both internally but also internationally by creating dollars to facilitate global trade and running an on-going current balance of accounts deficit.

Lesson 3: *“States will do all they can to maintain their exorbitant privilege, even if keeping it facilitates the build-up of unhealthy and unsustainable global economic imbalances.”*

ETM Analytics is not disputing the global benefits of American hegemonic power. But, it is pointing out the inherent fragility of such power. International financial stability requires that the U.S. maintain stable governmental finances and a dependable financial and monetary system. For a long time the U.S. met these criteria but beginning about 2000 divergences began to accumulate.

Lesson 4: *“More debt aggravates systemic fragility.”*

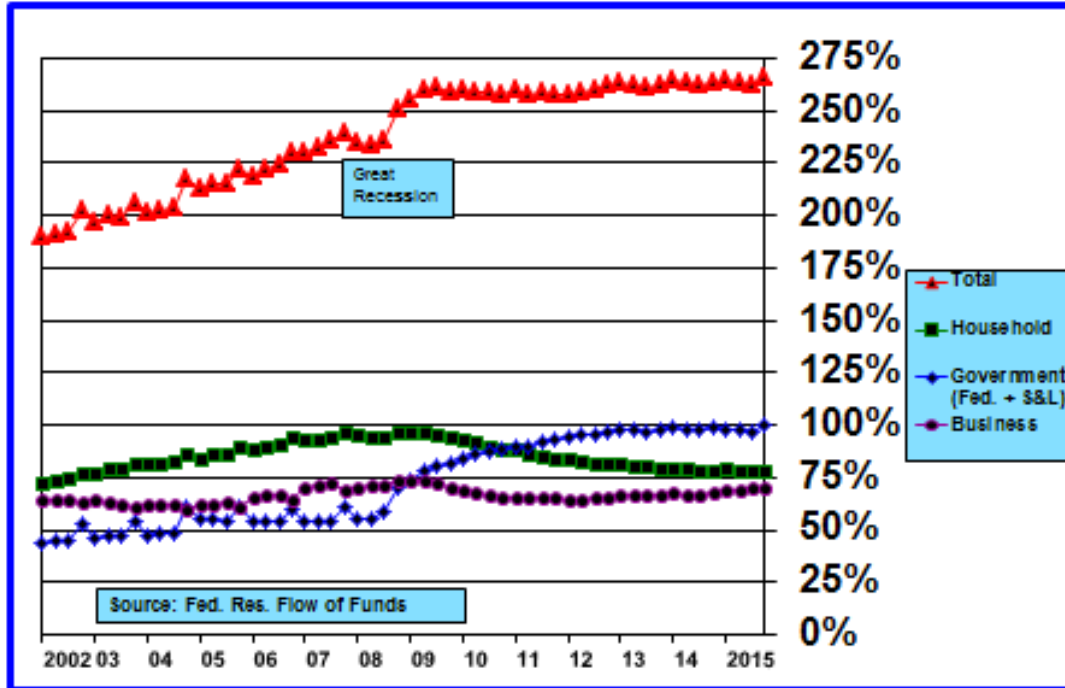
As we know, the great financial crisis of 2008 was driven first and foremost by excessive debt leverage in the U.S. economy and financial markets. From 2002 to 2007, as shown in **Chart 2**, the U.S. total-nonfinancial-debt-to-GDP ratio skyrocketed from 189.5 percent to 239.5 percent. While focus is often given to the housing bubble and the unsustainable buildup in household debt relative to income, the debt leverage problem greatly surpassed the housing market and extended into all manner of economic and financial activity, both domestically and internationally.

Unfortunately, the policy remedy to the 2008 financial crisis was one of bail-out by shifting private debts to the government and then engaging in a monetary policy that flooded the global system with more dollars. Thus, the problem of too much debt was not addressed; it was merely shifted to other venues. And while the U.S. total-debt-to-GDP ratio has not climbed further; neither has it declined. In the meantime the global total-debt-to GDP ratio has continued its inexorable ascent as more and more dollars have flooded the global economy and financial system.

Total government debt grew from 43.6 percent of nominal GDP in 2002 to 60.7 percent of GDP just prior to the onset of the Great Recession. Since then the ratio has increased further to 99.9 percent at the end of 2015. At the same time the total-debt-to-GDP ratio quickly climbed from 239.5 percent to 261.6 percent during the Great Recession, but has continued to edge up since then to 265.5 percent at the end of 2015.

Lesson 5: *“Palliative treatments to monetary and fiscal problems incur long-term and often underestimated costs.”*

EMT Analytics argues that the U.S. policy response to the financial crisis of 2008 has cast doubt on America’s economic “infallibility” and undercut the dollar’s dominance as the global reserve currency. *“The harder America fights to retain its exorbitant privilege, the more it uses the full extent of its power by doubling down on a debt-based growth model and using fiscal and monetary treatments instead of necessary but painful structural reforms. Lesser global powers are increasingly unwilling to allow Washington to*

CHART 2 – Nonfinancial Debt to Nominal GDP

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leverage its exorbitant privilege if it is unprepared or unable to pay for it with hegemonic dominance, stable state finances, and financial and monetary dependability.”

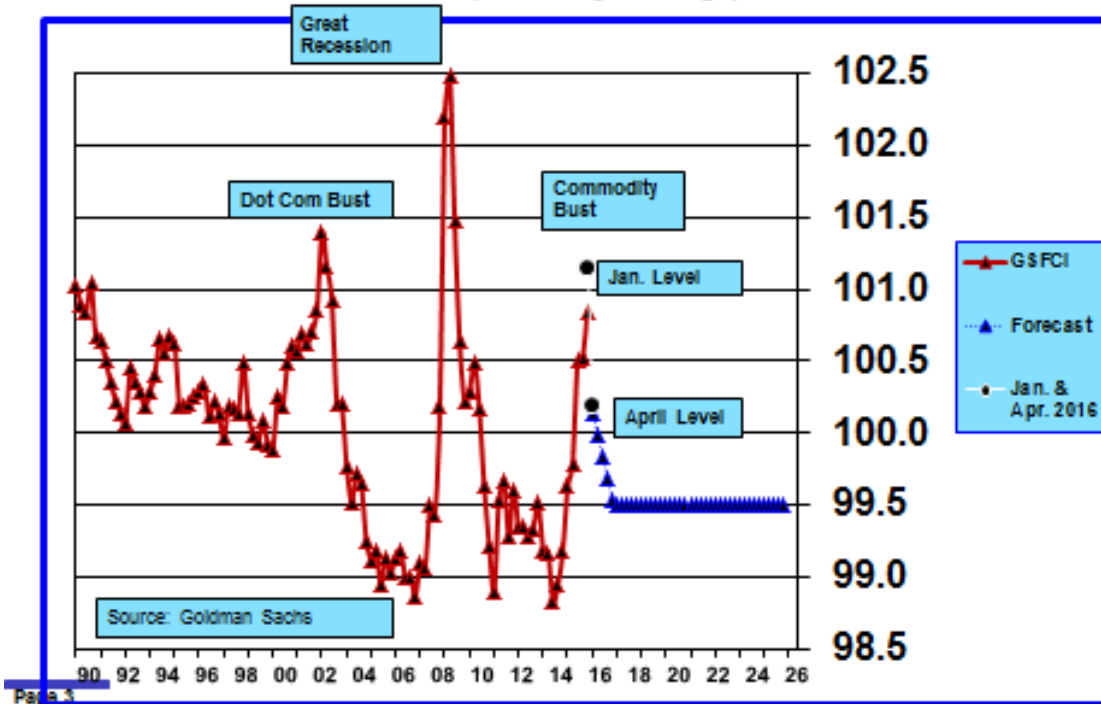
2. Dollar Liquidity Summers and Winters

During the course of an economic cycle there are times when liquidity is abundant and times when it is scarce. Because the dollar is the world’s reserve currency, times of dollar scarcity, which generally occur when the Federal Reserve is tightening monetary policy, have global consequences. EMT Analytics refers to periods of limited liquidity as “liquidity winters.”

Liquidity winters can be measured in a variety of ways. EMT Analytics has its own proprietary measure but its measure tracks Goldman Sachs financial conditions indicator (**GSFCI**), but is less sensitive to short-term financial market volatility of the short experienced at the beginning of 2016 — see **Chart 3**. EMT Analytics measure reflects a gradual tightening of dollar liquidity, which has not reversed to any significant extent in the last few weeks.

From 2008 to 2014, the Federal Reserve created a “liquidity summer” through its monetary policy of quantitative easing. Beginning with tapering in 2014 and continuing with its first rate increase in December 2016 a new “liquidity winter” commenced. As **Chart 3** shows, financial conditions have eased considerably since they peaked in early February. That easing was directly related to the Federal Reserve’s signaling that it was concerned about global risks and would exercise caution in raising U.S. interest rates. The

CHART 3 – Financial Conditions
(Quarterly Average)



GSFBI has reversed about half of its increase since tapering began in 2014 and the April level of 100.19 is about the same as prevailed in July 2015.

Some would regard this as a monetary policy success in the sense that the Federal Reserve has been successful in stabilizing global financial markets. However, EMT Analytics disagrees and argues that there is a cost to preserving global financial stability in the short run. The line of reasoning is that liquidity winters are essential to ring out the financial excesses that built up during the preceding liquidity summer. However, when the corrective processes are intentionally interrupted by reflationary monetary policy the international economic and financial foundation remains mired in an unstable condition. In the words of EMT Analytics: *“Perpetuating bad investments and price distortions can come at a high structural cost — a cost that does not even account for currency fragility and the inevitable loss of monetary credibility . . . the constant reflation of asset bubbles is systemically exhausting.”*

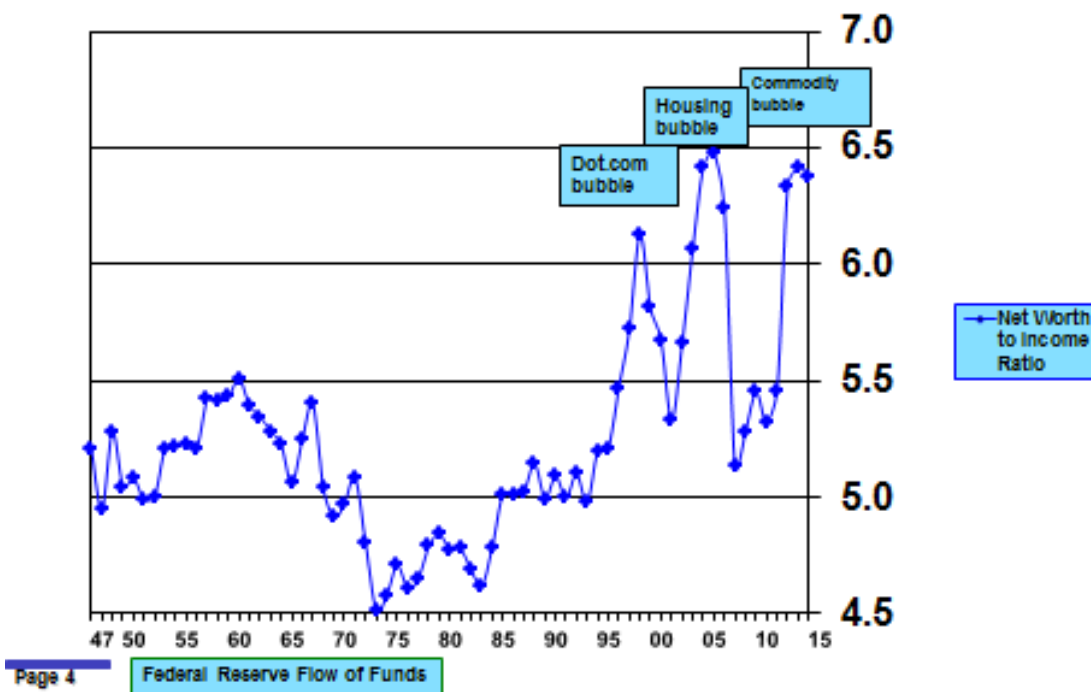
Another consequence of misguided policy aimed at short-term global financial market stabilization is that reflation of asset bubbles shifts wealth to asset owners and worsens wealth and income inequality. And, it does not stop there. Although much disagreement prevails, a strong case can be made that the policy of intentional asset price reflation has played a significant role in depressing productivity and, therefore, the potential growth rate of real GDP. In addition, as discussed in the previous section of this letter, both rising income inequality and depressed potential economic growth are stoking the fires feeding the incendiary rise of populism in the U.S. and elsewhere.

By pursuing a policy of asset price reflation, the Federal Reserve can engineer short-term market

stability and decrease the risk of balance sheet insolvency and defaults on debt. However, this policy comes with the cost that assets become increasingly less affordable relative to incomes. The challenge of policy is to maintain asset price affordability but also maintain financial stability. Unfortunately, there is no easy way to accomplish these two dual objectives and the Federal Reserve, by focusing only on one objective — financial stability — is undermining its ability to achieve financial stability over the long term.

Chart 4 shows the ratio of household net worth to disposable income. The ratio was 6.38 at the end of 2015, only slightly lower than 6.42 at the end of 2014, and just a tad below the all-time high 6.48 reached in 2006 at the height of the housing bubble. The message conveyed by **Chart 4** is that asset affordability historically has ranged between a ratio of 4.5 to 5.5 times disposable income. Three times since the late 1990s this ratio has risen decisively above the upper bound of this range and each time it occurred during a liquidity summer supported by easy Federal Reserve monetary policy. Those who own financial and real assets certainly feel wealthier today, but the chart tells a story of asset unaffordability relative to disposable income.

CHART 4 – Consumer Net Worth to Disposable Income
1947 - 2015



And it may be worse than it looks. If policy is not only inflating asset prices but also depressing productivity and potential real GDP growth, this will pass through to slower growth in real disposable income, thus exacerbating the asset price — income imbalance and worsening asset affordability.

3. China's Outsized Impact of Global Financial Stability

Part 3 of EMT Analytics commentary focuses on China and its exploding debt leverage. It is no secret that China's rapid growth has been engineered through state-driven massive investment projects, primarily in housing and infrastructure and that that policy has been financed by massive increases in debt leverage. It is also no secret that much of this investment has low or negative rates of return, which means that its impact on long-term economic growth is limited to negligible. This unhealthy relationship is showing up in the official data, as flawed as that data might be. Debt is growing much more rapidly than output and the gap between the two growth rates is widening. EMT Analytics references an official Chinese government study that estimated that close to half of investment since 2008, approximately \$7 trillion, was probably misallocated.

In other economies, this relationship rears its ugly head in the final stages of a liquidity summer when funding is easy to access and speculative fever is paramount. It is a sure sign of severe financial excesses and a reliable warning signal that a financial market correction is just around the corner.

The moment of reckoning can be delayed for months, even years, by policies that paper over the excesses. For example, uncollectible debts can be refinanced including unpaid interest, and the authorities can pretend that all is well. That is going on in Italy currently and is surely happening in China as well. The problem with the pretend and extend strategy is that failure to clear out the rot weighs adversely on new lending activity and preserves inefficient competitors. The day of reckoning is deferred but the economic consequences and imbalances continue to build inexorably.

China's growth scare earlier this year was short lived because policymakers cranked up the debt leveraging mechanism. This was done primarily through state-owned banks and the developing municipal bond market. It focused on the housing market which is already plagued in many parts of China by excess inventory.

There is no doubt in my mind that the road ahead for China's political leadership will be enormously challenging. Already financial excesses have weakened financial stability. The days of the high growth economy are over and the need to transition the economy to a slower growth, more stable one based on consumption is evident. However, the risks of transitional difficulties and the political threat realization of these risks would likely pose have lured authorities into pursuing the old economic model. They have bought time, but the problem remains unresolved and likely will only worsen with the passage of time.

Many analysts are dismissive of these risks and believe the state-based capital markets system with its decisive leadership will be able to engineer a soft landing. Perhaps, but I would not hold my breath that such a Goldilocks outcome will occur. Moreover, what seems to be forgotten is that China's one-child policy, even though it was recently abandoned, assures that employment growth and population growth are set to go into reverse in a few years. Then China will be on the same path as Japan is today and it is not a path that leads to much real growth.

4. Currency Wars

In part 4, EMT Analytics discusses the consequences of the erosion of the U.S. position of “exorbitant privilege” in providing the global reserve currency because of its failure to exercise the responsibilities necessary to assure global financial stability.

Japan’s and Europe’s intentional currency debasement initiatives are a direct outcome of the decline of credible U.S. policy to preserve the integrity of the reserve currency. Currency wars are all about attempting to gain an economic advantage at the expense of another country. Do not be fooled by the silly talk about raising the inflation rate. Of course, raising the inflation rate is important because deflation will exacerbate solvency concerns as asset values deflate but debt values do not. However, the real solution in the long-run lies in increasing the real rate of growth. A policy that inflates asset values by debasing a country’s currency can provide balance sheet protection, at least for a while, but it cannot necessarily generate inflation (Japan certainly has tried with very limited success) and the linkage to growth actually appears to be in the wrong direction.

Let me sum up EMT Analytics view with a few verbatim quotes:

“The harder Washington fights to hold onto its exorbitant privilege, the more it leverages its position by expanding its debt-based growth model and its preference for fiscal and monetary palliatives over painful but necessary structural reforms. Meanwhile, lesser global powers are becoming less willing to allow Washington its privilege if it cannot or will not pay for it through hegemonic dominance, stable state finances and monetary dependability.”

“The tension between the United States and other powers has set the scene for currency trench warfare on two brutal fronts. On the first, states are mounting inflationary insurrections to gather as many resources as they can before foreigners discount their currencies. Money printing, bank credit expansion and deficit spending are the weapons used in these raids, which are simply manifestations of the tragedy of the monetary commons that has arisen from the fluctuating fiat currency system.”

“On the second front, states vie for reserve currency stature, a battle that can be fought in one of two ways. A state can tighten its monetary policies, reduce national debt and raise productivity, an option that requires painful internal adjustment and surrender on the first front. The alternative is to create economic, financial and military dependency on itself — or leverage dependency where it already exists — to encourage other countries to adopt its currency. Trade policies, the military-industrial complex and global financing institutions are the weapons of choice on this front.”

“The real war being waged, then, is between the political forces of centralized money and the market forces of decentralized finance. . . . Since the first half of the 20th century, the forces of centralization have emerged victorious, placing the control of currencies firmly into states’ hands. But now this model is fail, and it will continue to fail as long as states keep accumulating debt and printing money.”

My discussion of EMT Analytics arguments and logic may not be wholly clear to the reader as it is only an abbreviated summary. If the reader wishes to examine EMT Analytics’ line of thinking, I would encourage you to subscribe to Stratfor.

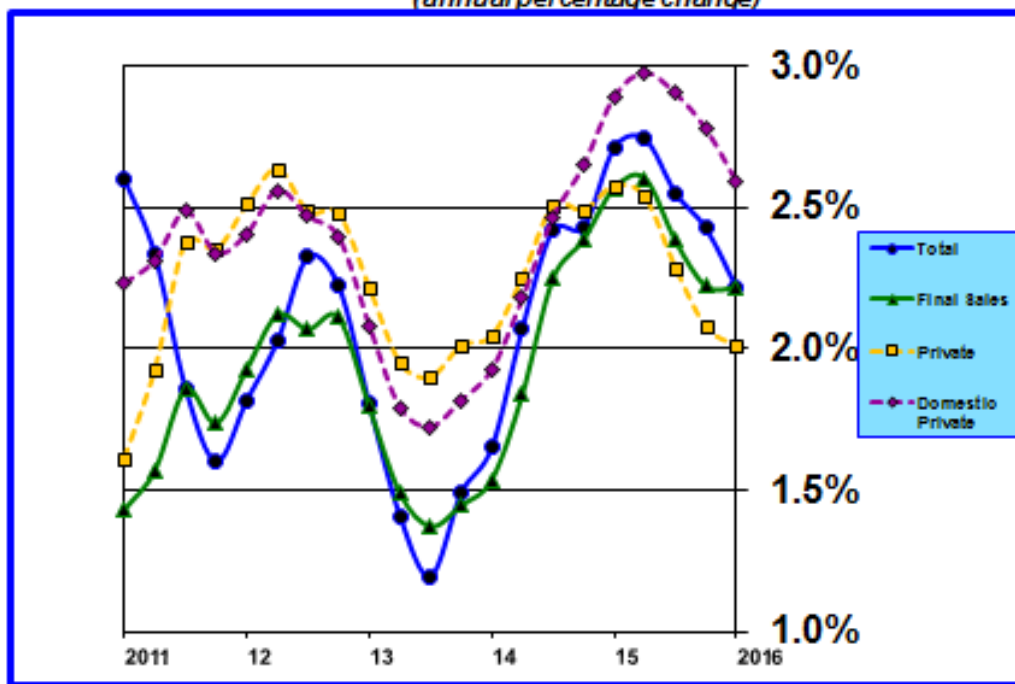
IV. Real GDP

First quarter real GDP annualized growth was revised upward in the “Preliminary Estimate” to 0.8 percent from a barely discernible 0.5 percent in the “Advance Estimate.”

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 2.5 to 3.0 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.

Table 1 and Chart 5 show several alternative measures of real GDP growth. “Final Sales” omits inventory changes which tend to be volatile over the cycle, rising when the economy slows and falling when the economy accelerates.

CHART 5 – Real GDP Growth – Alternative Measures
(annual percentage change)



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“Private” GDP omits both inventory changes and government. Growth in government expenditures rises during periods of economic weakness and falls during periods of strength or when fiscal austerity is the order of the day. Growth in Private GDP was greater than growth in Total GDP during 2011, 2012,

Table 1
Composition of 2016 and 2015 Quarterly GDP Growth

	First Quarter 2016 Advance Estimate	First Quarter 2016 Preliminary Estimate	First Quarter 2016 Final Estimate	Fourth Quarter 2015	Third Quarter 2015	Second Quarter 2015
Personal Consumption	1.27%	1.29%		1.66%	2.04%	2.42%
Private Investment						
Nonresidential	-.76%	-.81%		-.27%	.33%	.53%
Residential	.49%	.56%		.33%	.27%	.30%
Inventories	-.33%	-.20%		-.22%	-.71%	.02%
Net Exports	-.34%	-.21%		-.14%	-.26%	.18%
Government	.20%	.20%		.02%	.32%	.46%
Total	.48%	.83%		1.38%	1.99%	3.91%
Final Sales	.81%	1.03%		1.50%	2.70%	3.89%
Private	.61%	.83%		1.48%	2.38%	3.43%
Private Domestic	.95%	1.04%		1.62%	2.64%	3.25%

2013 and 2014, a period when fiscal policy was contractionary. Since 2015 fiscal policy has been mildly supportive of **Total** real GDP growth.

“**Private Domestic**” GDP omits inventory changes, government and net exports. Since mid-2014 net exports have depressed **Total** real GDP growth. That development is a direct consequence of a stronger dollar and is corroborated by the slowdown in industrial production and manufacturing which are more directly linked to international trade than other sectors of the economy.

Note that the most important takeaway from **Chart 5** is that all four measures of real GDP growth peaked in the second quarter of 2015 and now decelerated for three quarters. Real GDP must grow faster than 3.9 percent in the second quarter of 2016, since that is the 2015 second quarter growth rate that will fall out of the calculation, to prevent a further year over year deceleration in real GDP growth. Even the most optimistic second quarter forecasts fall considerably short. So, the emerging trend of slowing real GDP growth is likely to continue.

1. Consumption

Personal consumption contributed 1.29 percent to first quarter real GDP growth, which is the weakest quarterly contribution since 1.19 percent in the first quarter of 2015 and 0.85 percent in the first quarter of 2014. Many analysts have suggested that a seasonal adjustment problem has developed which artificially depresses first quarter estimates of personal consumption. The quarterly pattern does suggest that there could be a problem with seasonal adjustments. In 2014 personal consumption contributed 1.84 percent to annual real GDP growth (first quarter was 0.85 percent) and in 2015 personal consumption contributed 2.11 percent (first quarter was 1.19 percent).

In the long run growth in nominal disposable income and consumer saving preferences determine growth in nominal personal consumption. Nominal disposable income depends upon a lot of things but the most important ones are the level of employment and wage rates. Slow growth in employment and in wage rates will result in slow growth in disposable income. Over the last five quarters both nominal disposable income growth and nominal personal consumption growth have slowed, but the slowdown in consumption has been greater because the saving rate has crept up. This pattern is reflective of a gradual subsidence in the overall rate of growth and mirrors the overall pattern of slowing real GDP growth shown in **Chart 5**.

Other indicators are sending a similar message of a gradual deceleration in consumer spending growth. Car sales have been soft and inventories have been building. This could be a temporary phenomenon. State retail sales taxes have been slowing over the last year.

As can be seen in **Table 2**, Both **B of A** and **GS** expect personal consumption expenditures to rebound during the remainder of 2016 and then gradually slow over the longer run, as employment growth slows, to a growth level not much different the tepid first quarter growth of 1.87 percent. My forecasts for 2016, 2017, and 2018 are less optimistic and reflect greater slowing in employment growth and slower increases in wages. However, by 2019 all forecasts converge at a considerably lower level than has prevailed over the last couple of years.

Table 2
Real Personal Consumption Growth Rate Y/Y Forecasts — B of A, GS, Bill’s “Steady Growth” and Bill’s “Strong Growth”

	2012	2013	2014	2015	2016	2017	2018	2019
Actual	1.38	1.65	2.67	3.13				
B of A					2.51	2.41	2.05	1.79
GS					2.65	2.45	2.13	1.89
Bill’s Steady Growth					2.06	1.65	1.55	1.63
Bill’s Strong Growth					2.10	1.75	1.75	2.00

2. Investment

Investment consists of three principal categories — business investment, which is labeled “nonresidential” in the national income accounts, residential investment, and changes in inventories. While changes in inventories are volatile from quarter to quarter, over the very long run growth in inventories generally tracks growth in business and residential investment.

Table 3 shows growth rates for real private investment and separately for its two principal components — nonresidential and residential investment. Residential investment is 20 percent to total investment, nonresidential investment is 77 percent, and growth in inventories account for approximately 3 percent.

Table 3

Real Private Investment (Residential and Nonresidential) Growth Rate Y/Y Forecasts — B of A, GS, Bill’s “Steady Growth” and Bill’s “Strong Growth”

	2012	2013	2014	2015	2016	2017	2018	Ave. 1947-2016
REAL PRIVATE INVESTMENT								
Actual	9.78	4.21	5.31	3.95				3.75
B of A					1.63	3.49	3.22	
GS					1.35	4.53	4.48	
Bill’s Steady Growth					-0.19	0.32	2.00	
Bill’s Strong Growth					-0.15	0.84	2.81	
REAL NONRESIDENTIAL INVESTMENT								
Actual	8.98	3.03	6.15	2.84				2.14*
B of A					-0.23	2.95	3.06	
GS					-0.83	3.64	3.83	
REAL RESIDENTIAL INVESTMENT								
Actual	13.51	9.52	1.76	8.87				-0.74*
B of A					8.95	8.25	3.98	
GS					9.37	5.55	3.80	

*Average 1999-2016; real private investment = 1.27% for 1999-2016

Residential investment growth was strong in 2015 and 2016 promises to be another good year. Inventories are lean and pent up demand is relatively strong. However, outsized housing price increases will dampen demand over time and inventories should improve with the consequence that residential investment growth should slow in coming years.

Nonresidential investment growth was crushed in 2015 by the collapse in oil prices. Energy investment has continued to decline in 2016, but investment is down in other sectors as well. As a result, most forecasters now expect nonresidential investment growth to be negative in 2016, followed by a recovery in 2017 and 2018 to a level slightly above the trend of the last 16 years. Optimism about investment growth, about which I have been consistently skeptical, has faded to a considerable degree. Slower growth in manufacturing is a contributing factor.

I continue to expect business investment growth in coming years to be not much different from the 2.14 percent growth rate that has prevailed since 1999. This is partly because of the much slower growth rate in the economy but is also impacted by the continuing shift in the composition of economic activity toward services, which are less capital intensive.

3. Net Exports

Net exports reduced first quarter real GDP growth by 0.21 percent. This continues a trend that emerged in 2014 as the dollar strengthened. In light of the divergence in U.S. monetary policy from monetary policies of major trading partners, with the U.S. tightening while others ease, net exports most likely will continue to depress real GDP growth in coming quarters.

Although the trade deficit in goods and services has risen only slightly from 2.8 percent of GDP in January 2014 to 2.96 percent of GDP in March 2016, the shares of both imports and exports as offsetting components of GDP have declined. Exports have decline from 9.6 percent to 8.2 percent of GDP since January 2014. Over the same period imports have declined from 13.9 percent to 12.4 percent of GDP. Part of the decline in imports is related to the collapse in energy prices, but part is also due to a worldwide decline in trade. The decline in global trade does not appear to be a temporary phenomenon. The declining trend is traceable at least in part to technological advances and the related shift in economic activity toward knowledge-based services, which generally are located near the point of consumption. The decline in trade is not limited to the U.S.; it is a global phenomenon.

4. Government Investment

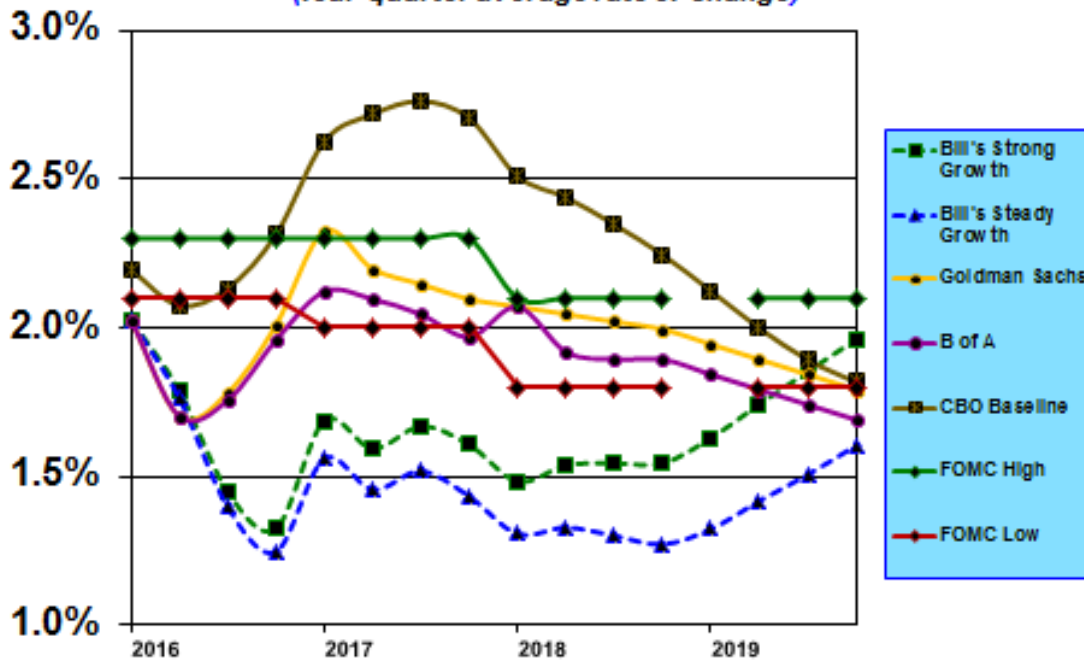
Government investment contributed 0.20 percent to first quarter real GDP growth. State and local spending contributed 0.31 percent while federal spending subtracted 0.11 percent.

Government spending ceased to be a negative factor in real GDP growth in 2015 as it had been since 2010. Growth in government investment spending has been at an annual rate of 1.12 percent over the last five quarters, which is only slightly above the 16-year average since 1999 of 0.88 percent. This is probably about as good as it will get unless Congress abandons the constraints of the Budget Control Act.

5. Real GDP Forecasts

Chart 6 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.

CHART 6 – Real GDP Growth Forecasts
(four-quarter average rate of change)



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

After 2016, both my “Steady Growth” and “Strong Growth” scenarios are 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.

V. Productivity

As a reminder, potential real GDP growth is jointly determined by employment growth and productivity. Employment growth has been relatively strong as the economy has improved and the labor market has healed. However, the expected improvement in productivity has not materialized.

Nonfarm productivity has averaged just 0.58 percent over the last three years, 0.54 percent over the last five years, and 1.18 percent over the last seven 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.

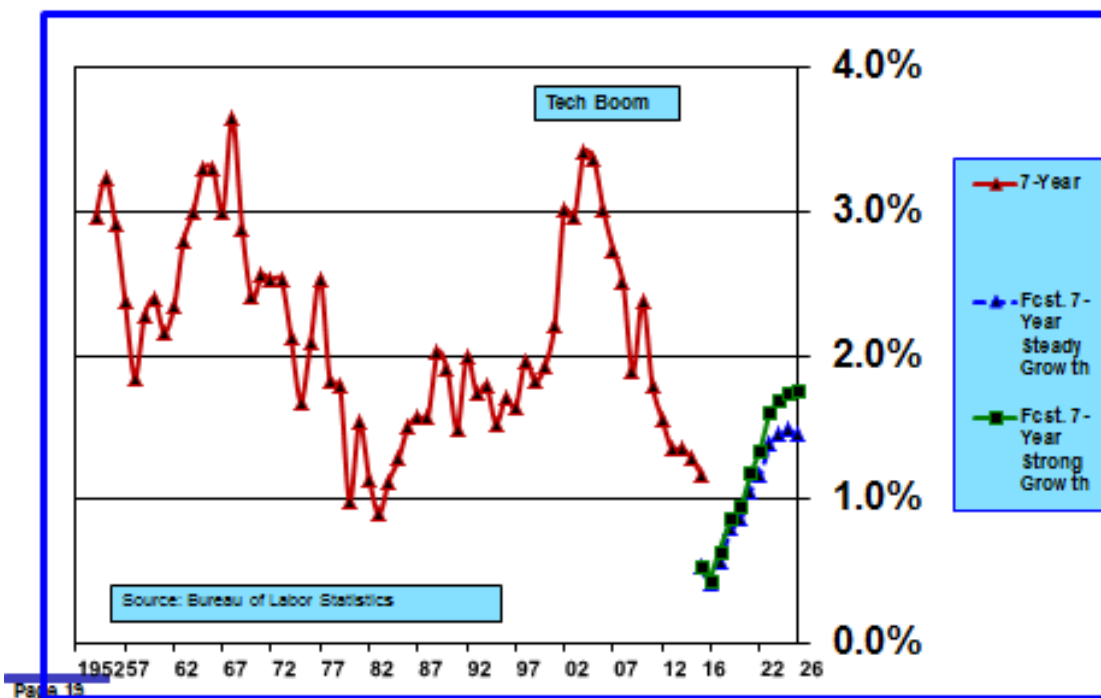
As a consequence of low productivity CBO estimates that potential real GDP growth was just 1.5 percent at the beginning of 2016 and will only gradually improve to 2.0 percent over the next several years. I am more pessimistic. I believe that potential real GDP growth is only about 1.3 percent in 2016 and will rise to between 1.75 and 2.10 percent by 2026, depending upon the strength in productivity. Attainment

of the lower end of this range requires productivity to improve to 1.35 percent to 1.40 percent, which is well above the recent seven-year average of 1.18 percent. To achieve higher potential growth of 2.1 percent would require productivity to improve to 1.8 percent.

Slower productivity gains compress improvements in the standard of living and, as we are becoming well aware, stagnation in living standards is fueling the populist political insurgency.

Historical productivity trends are easier to discern when a long-term average is calculated. **Chart 7** 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. By the end of 2016 my expectation for a 0.5 percent gain in productivity during 2016 will take the seven-year average to its lowest level ever in 60 years of recordkeeping. The improvement in forecast productivity after 2017 assumes that productivity growth will rise from its 2016 level of 0.5 percent to about 1.35 percent to 1.75 percent over the next several years. There is no assurance that this will actually occur.

CHART 7 – Productivity (Seven-Year Rate of Change)



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. In the *April Longbrake Letter* I described three theories — diminished technical progress, inadequate demand, and mismeasurement.

Debate continues and no consensus has yet emerged. Recent debate has centered around the issue of potential mismeasurement with one study arguing that mismeasurement is not a significant problem and

GS arguing in a rebuttal that the critique is flawed and that understatement of productivity, and thus of potential real GDP growth, is real and significant.

GS has assembled evidence to support its belief that productivity 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.² **GS** recently updated its analysis.³⁴

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.

Measurement is complicated to an even greater extent by the proliferation of free software. The value that users derive at no cost from Facebook and Google is not included in the measurement of GDP. **GS** believes that the exclusion of free digital products from GDP results in a growing understatement of output and, therefore, in the long-term growth in living standards.

Overall, **GS** believes that mismeasurement of output understates productivity by 0.5 percent to 0.75 percent annually currently compared to an understatement of about 0.2 percent 15 years ago.

In a recent paper, David M Byrne, John G. Fernald, and Marshall B. Reinsdorf (collectively Byrne et al.) concluded that there is “... *little evidence that the slowdown [in productivity] arises from growing mismeasurement of the gains from innovation in IT-related goods and services.*”⁵ With respect to free digital software, Byrne et al. state that “... *many of the tremendous consumer benefits from smartphones, Google searches, and Facebook are, conceptually, nonmarket: Consumers are more productive in using their nonmarket time to produce services they value. These benefits do not mean that market-sector production functions are shifting out more rapidly than measured, even if consumer welfare is rising.*”

GS rejects the arguments of Byrne et al. The debate will continue. Regardless of how the debate is resolved, assuming that it is, if measured productivity is understated by 0.5 percent to 0.75 percent, then potential real GDP is understated by 0.35 percent to 0.50 percent. But because the nominal value of GDP is the sum of dollar-denominated transactions, by definition this would mean that measured inflation would decline by 0.35 percent to 0.50 percent.

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.

²Jan Hatzius and Kris Dawsey. “Doing the Sums on Productivity Paradox v2.0,” Goldman Sachs Economic Research, Issue No: 15/30, July 24, 2015.

³David Mericle and Dean Struyven. “Productivity: More Light, More Tunnel,” US Economics Analyst, Goldman Sachs Economic Research, April 29, 2016.

⁴Jan Hatzius. “An Update on Productivity,” US Daily, Goldman Sachs Economic Research, May 19, 2016.

⁵David M. Byrne, John G. Fernald, and Marshall B. Reinsdorf. “Does the United States Have a Productivity Slowdown or a Measurement Problem?” Brookings Papers on Economic Activity, BPEA Conference Draft, March 10-11, 2016.

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.

VI. Employment

Contrary to tepid GDP growth, payroll and household employment gains have been stronger than expected. Employment participation has improved a little bit 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 some evidence that wage rate growth is beginning to accelerate.

1. Employment Growth

April's employment situation report showed moderate employment gains. The increase in payrolls in April was 160,000, which was above the approximately 100,000 monthly gain necessary to maintain a stable unemployment rate. This compares to a monthly average of 192,000 over the first four months of 2016 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 1.91 percent, although this is down somewhat from the peak rate of annual growth of 2.14 percent in March 2015.

Household employment fell 316,000 in April and now has averaged 115,000 monthly over the first four months of 2016. 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 208,000 compared to 224,000 for payroll employment. This is not a consequential difference. Household employment has grown 1.68 percent over the past 12 months compared to 1.91 percent growth in payroll employment.

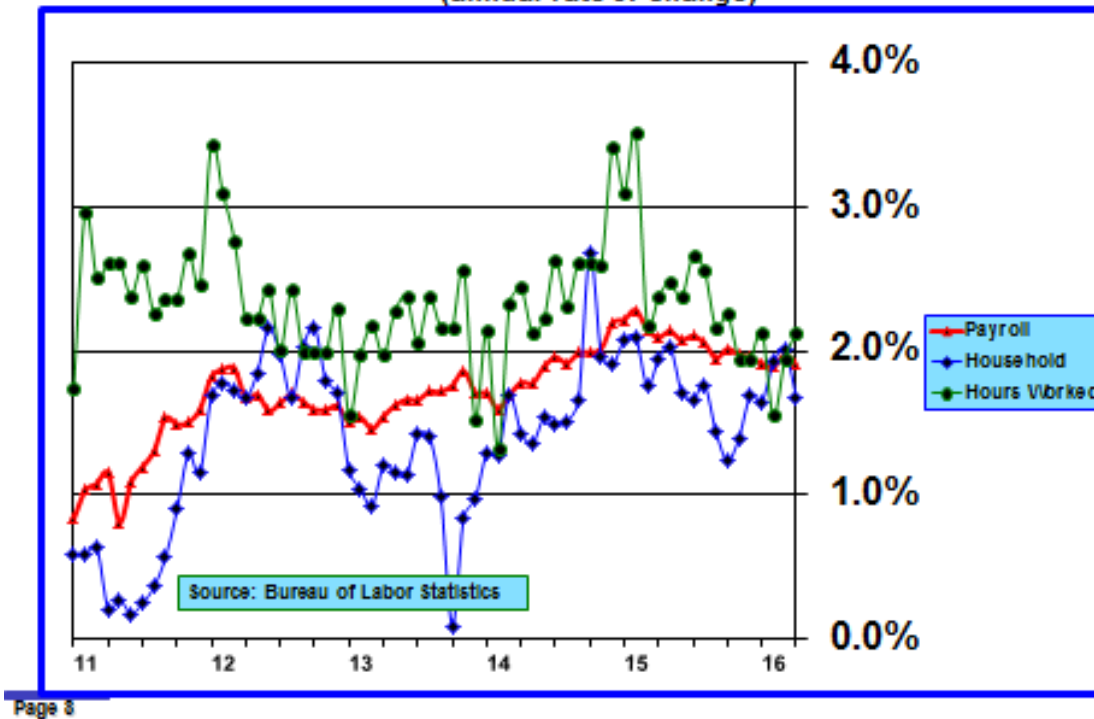
Growth in total hours worked by all employees over the last year was 2.13 percent in April. Total hours worked, after growing much faster over the last several years are now growing at approximately the same rate as the other two measures of total employment.

Chart 8 shows all measures of employment growth — payroll employment, household employment, and total hours worked. Probably the most important thing to notice in **Chart 8** 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 9 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

CHART 8 – Employment Growth
(annual rate of change)



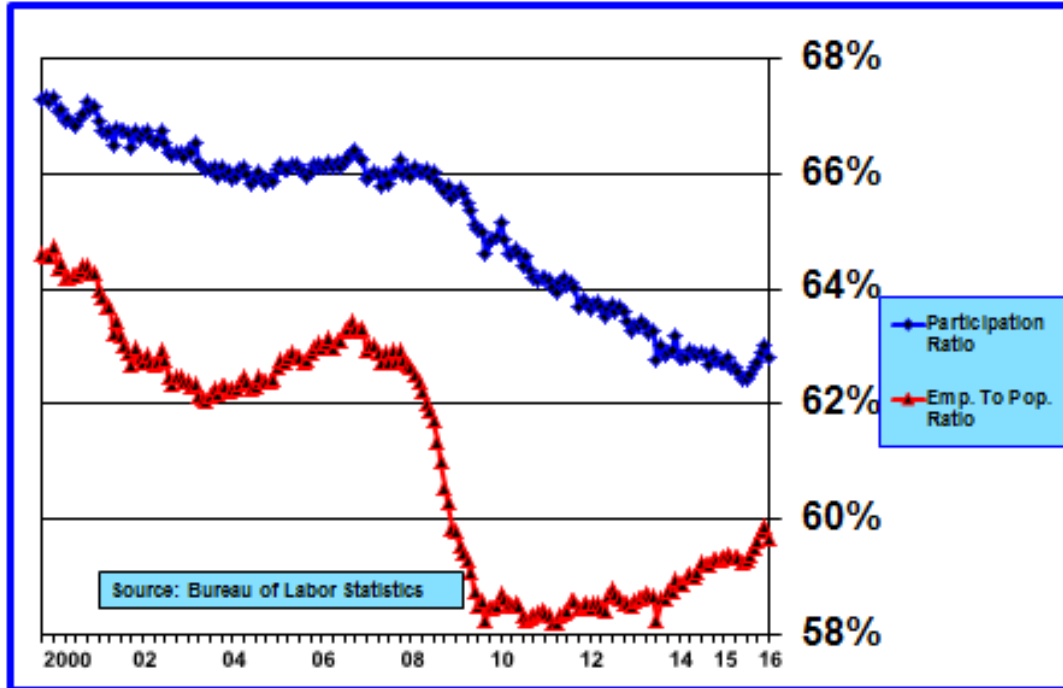
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unemployed who wish to be in the labor force. The numerator of the participation ratio only counts those who are employed.

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 the participation rate from 62.42 percent in September to 62.82 percent in April is suggestive evidence that some discouraged workers have reentered the labor market in the last few months.

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 assumptions 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.

CHART 9 – Labor-Force-Participation and Eligible-Employment-to-Population Ratios (U-3 Measure)



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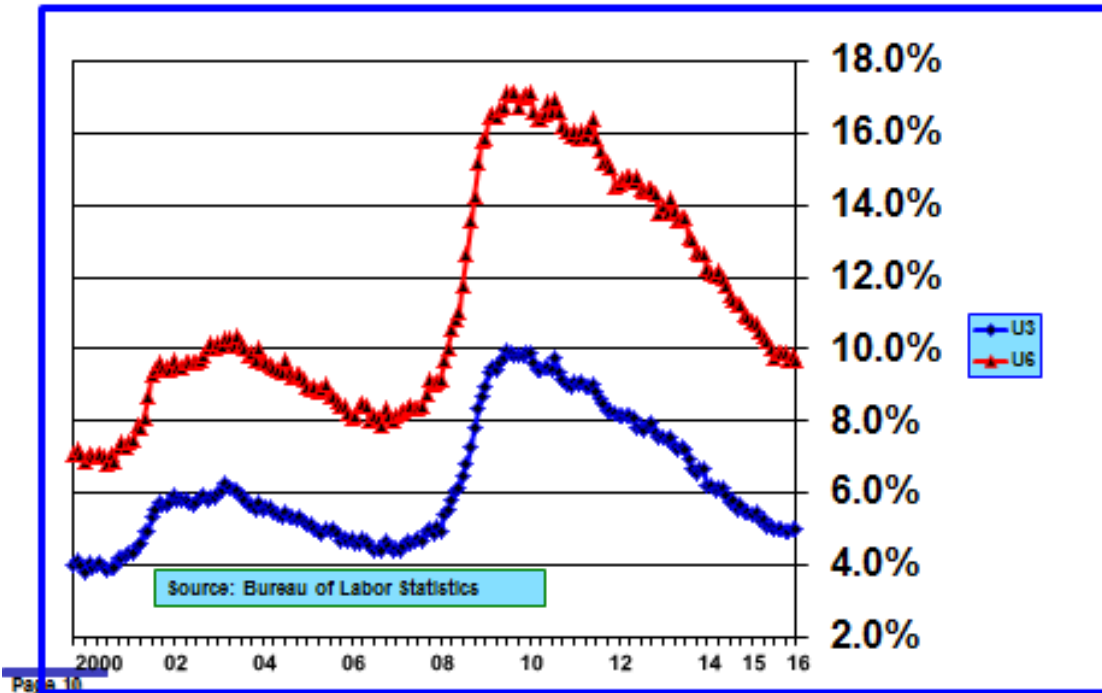
3. Measures of Unemployment Reflect a Labor Market With a Modest Amount of Slack

As can be seen in **Chart 10**, the U-3 unemployment rate has fallen to 5.0 percent and nearly matches the level attained prior to the Great Recession. The April U-3 unemployment rate was 4.98 percent compared to **CBO's** full employment estimate of 4.84 percent.

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 9.71 percent but is about 1.5 percentage points above the pre-Great Recession minimum. The U-6 measure of unemployment has fallen 1.09 percent over the last 12 months compared to a 0.45 percent decline in the U-3 measure, which underscores a rapidly improving labor market. Both unemployment measures reflect a tightening labor market with a modest amount of remaining slack.

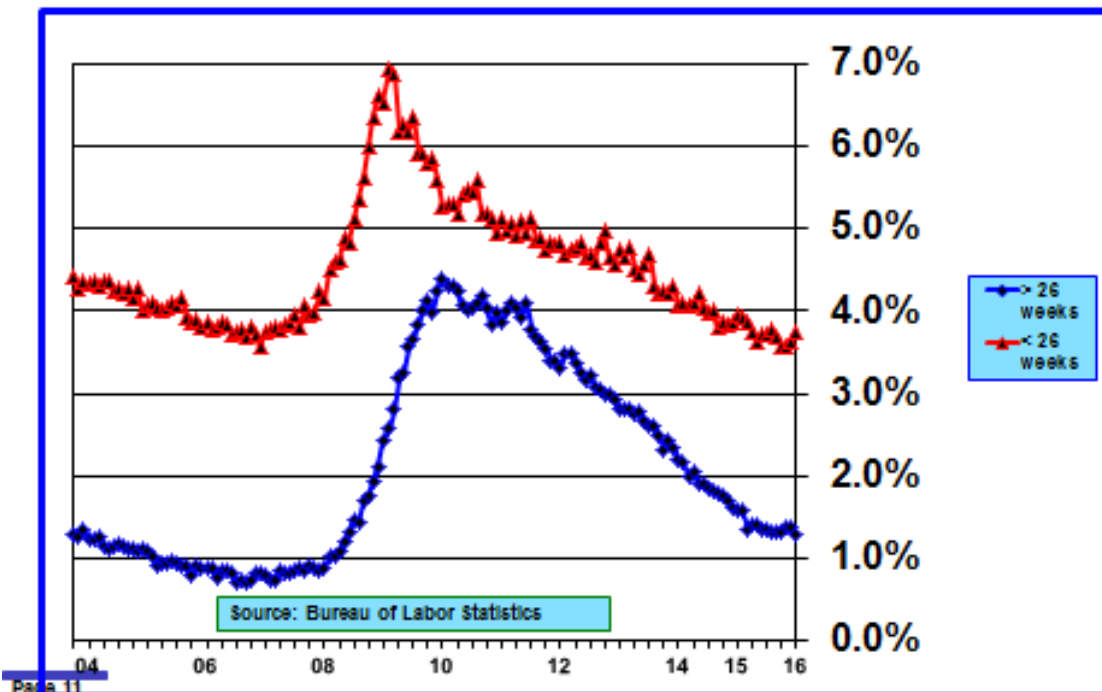
Long-term and short-term unemployment rates and also indicators of labor market tightness and are shown in **Chart 11**. The short-term unemployment has returned to the low level that prevailed prior to the Great Recession and has been relatively stable over the last year. The long-term unemployment rate has declined from over 4 percent in the aftermath of the Great Recession to about 1.3 percent currently. It is still about 0.3 to 0.4 percent above the low level reached just prior to the onset of the Great Recession.

CHART 10 – U-3 and U-6 Unemployment Rates



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CHART 11 – LT (>26 weeks) and ST (<26 weeks) Unemployment Rates



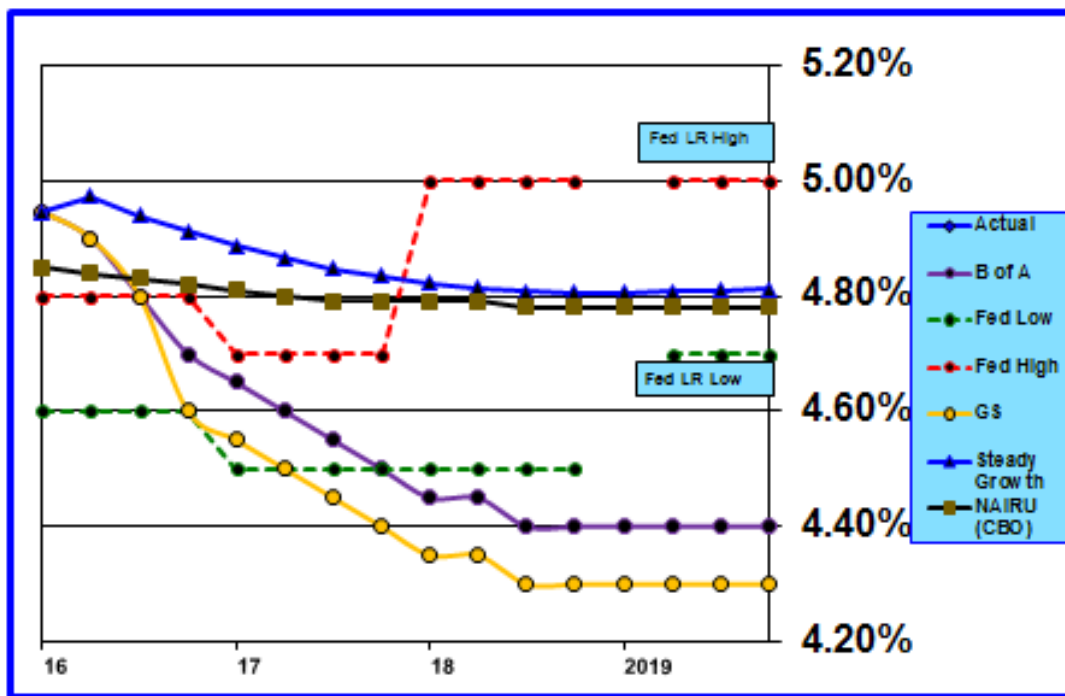
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4. Forecasts of the U-3 Unemployment Rate

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 12 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 12**. 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 12 – NAIRU and Unemployment Rate Forecasts
(quarterly average)



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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. As the amount of slack in the labor market gradually declined, private sector economists began forecasting acceleration in wage rate growth, which repeatedly failed to materialize. Now evidence is finally emerging 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.

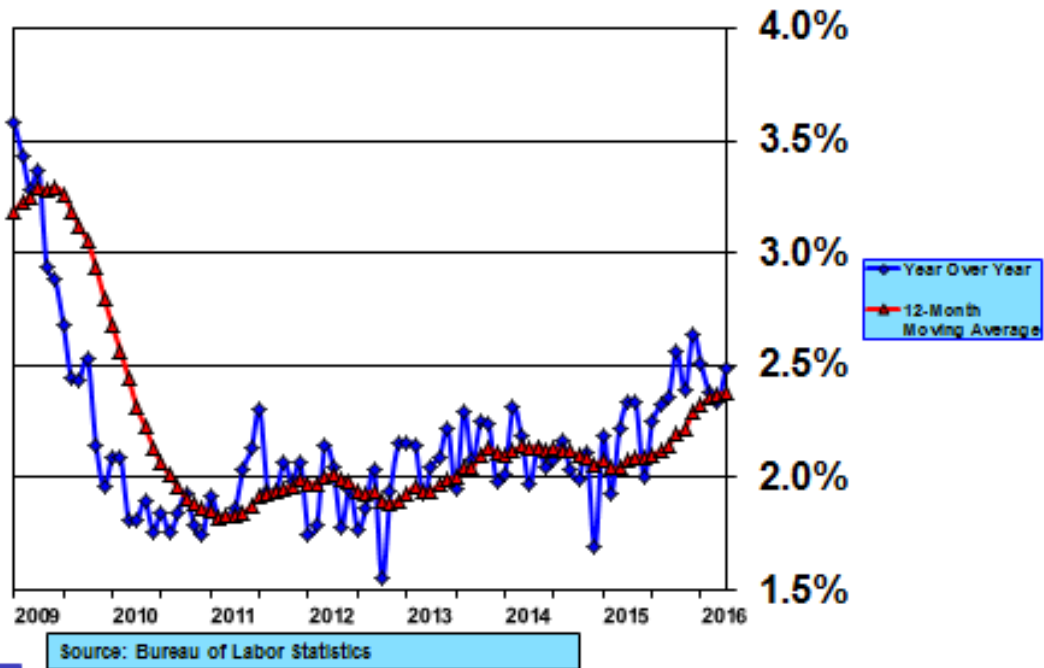
There are three primary broad-based measures of labor compensation that provide information about compensation trends. All are compiled by BLS. One is released monthly as part of the monthly labor situation report and includes both hourly and weekly wage rates for all workers, but includes no information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

Although all three 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 2.38 percent annually currently compared to 2.08 percent a year ago (see **Chart 13**).

However, 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 2.48 percent a year ago to 2.21 percent in April 2016 (see **Chart 14**). 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. There is already some evidence that is what is occurring. Analysts have been surprised at the weak growth in consumer spending in recent months, but **Chart 14** provides a credible explanation for this unexpected trend.

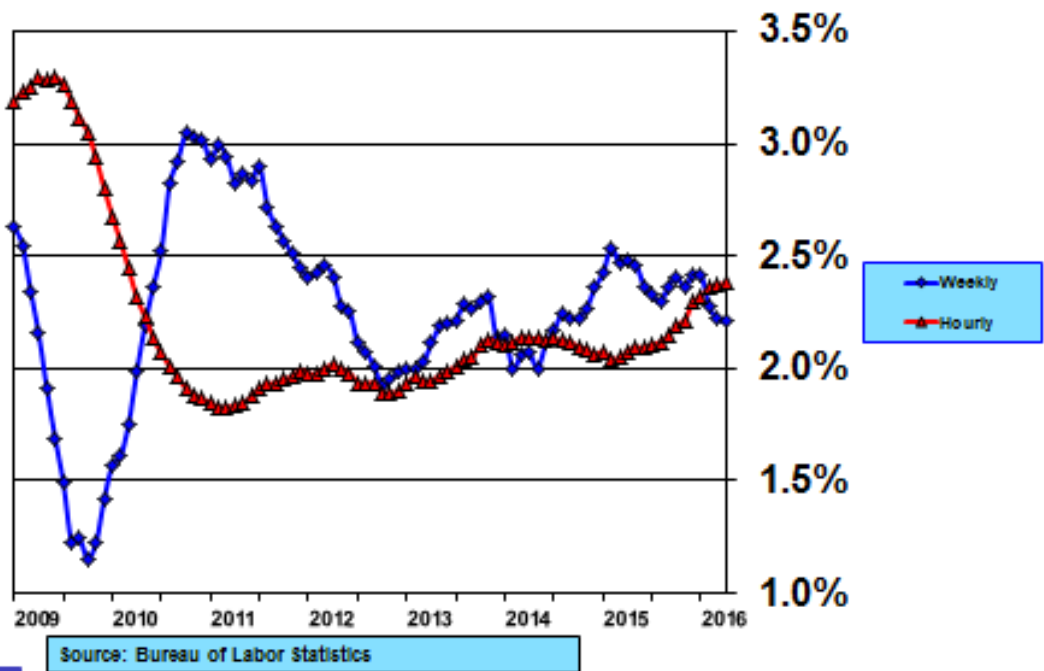
In contrast to growth in average hourly wages of all employees, the growth rate in the wage and salary component of ECI in the first quarter of 2016 was 2.05 percent compared to 2.52 percent a year earlier (see **Chart 15**). Perhaps because this data point did not fit expectations, critics were quick to point out that if incentive compensation is eliminated from the calculation, base compensation is rising. Incentive compensation had an outsized impact in the first quarter of 2015 compared to the first quarter of 2016. Thus, there may be merit to this perspective because incentive compensation data are fragmentary in initial reports and subject to considerable revision over time. In any event, wages and salaries, net of incentive compensation, increased 2.5 percent year over year and at an annualized rate of 2.8 percent in the first quarter, which is more consistent with the story other compensations measures are telling.

CHART 13 – Hourly Wage Rate Growth – All Workers
(annual year over year and 12-month moving average rates of change)



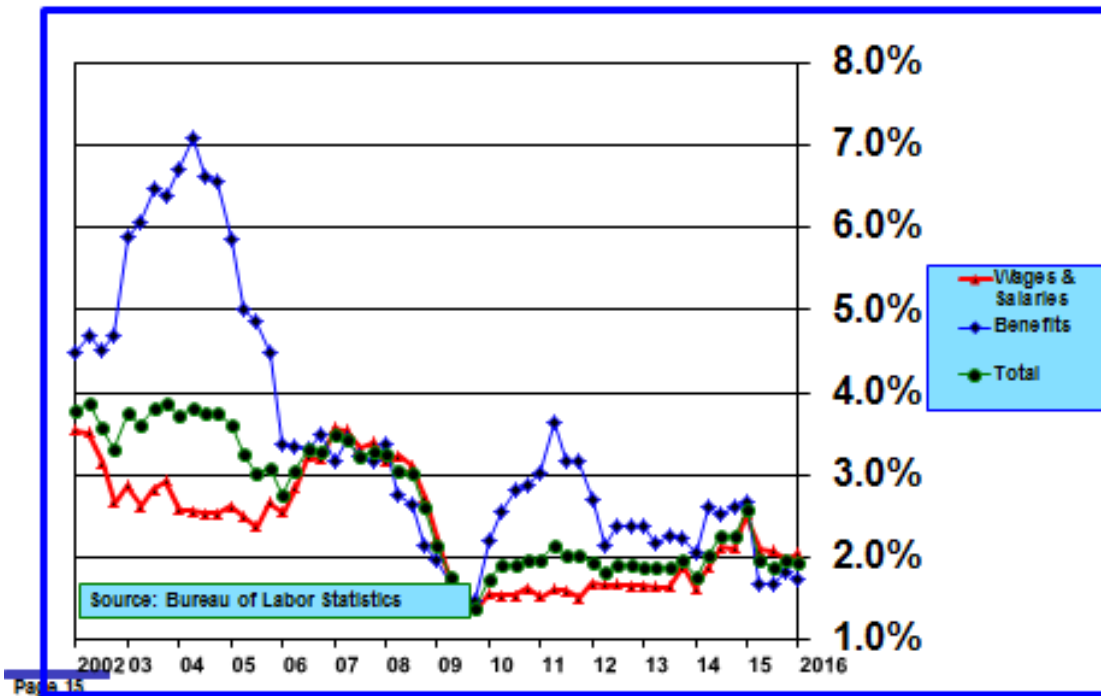
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CHART 14 – Hourly & Weekly Wage Rate Growth – All Workers
(annual year over year and 12-month moving average rates of change)



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CHART 15 – Employment Cost Index
(annual rate of change)



The more comprehensive measure of ECI, which includes benefits, also fell sharply from an annual rate of 2.57 percent in the first quarter of 2015 to 1.94 percent in the first quarter of 2016. Again, the unusual increase in incentive compensation in the first quarter of 2015 distorted the trend. However, incentive compensation probably cannot be blamed for the decrease in the growth rate of benefits from 2.67 percent in the first quarter of 2015 to 1.73 percent in the first quarter of 2016.

All-in-all the information contained in the ECI measure is mixed and hardly provides definitive evidence of rising employee compensation.

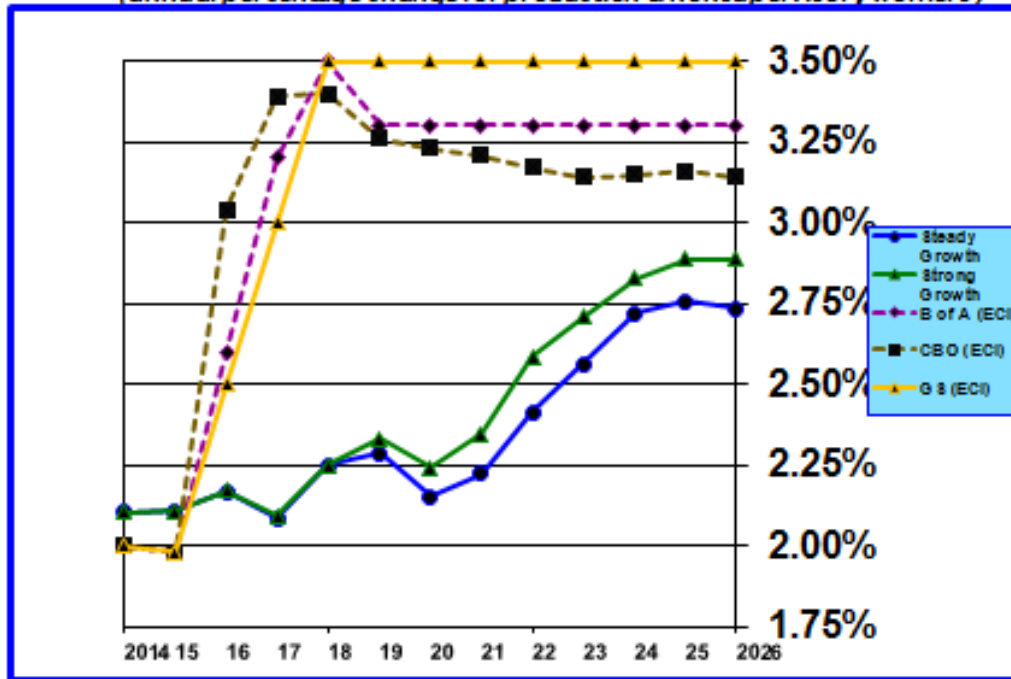
Other measures of wages indicate some upward pressure is developing. For example, **GS's** wage tracker has risen to 2.5 percent. **GS** expects wage rates to rise over the next two years to a range of 3.0 percent to 3.5 percent and then stabilize at that level.

Chart 16 shows my projections for wage growth for production and nonsupervisory workers over the next ten years and **CBO's**, **GS's** and **B of A's** projections for growth in the 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 goes back to 1964. Thus, the data series for production and nonsupervisory workers contains a lot more historical information which is useful for constructing robust forecasts. In the long run growth rates in wages for all employees and for production and nonsupervisory workers are highly correlated.

CHART 16 – Hourly Wage Rate Forecasts

(annual percentage change for production & nonsupervisory workers)



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Second, **CBO**, **GS** and **B of A** forecast wage rate growth only for ECI. Although the methodologies for constructing these different wage data series differ, the directionality of all is highly correlated over time, even if the levels aren't precisely the same.

Looking at **Chart 16**, which includes various forecasts of wage growth rates, the major takeaway for my forecasts 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**, **GS's** and **CBO's** forecasts for ECI wage and salary growth rates, expect wage growth to accelerate over the next two 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.

Who is right? That is unclear and we will have to wait for time to pass to 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. Contracting profit margins will increase employer reluctance to raise raises. Poor productivity gains could retard acceleration in wages. However, broad-based implementation of higher minimum wages will cut in the other direction.

Historically, there is very little correlation between rising wage rates and inflation. There is, however, a reverse relationship. Rising inflation influences wage rate acceleration. About 20 percent of the acceleration in inflation lifts wage rate growth within 12 months, with another 5 percent filtering into greater wage growth much later.

There are important forecasting implications of slower than expected acceleration in wage growth. 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.

VII. Monetary Policy

U.S. monetary policy has three goals — full employment, stable prices, which has been interpreted to mean inflation averaging 2.0 percent annually, and financial stability. In the past little attention was paid to the third goal of financial stability until a financial crisis erupted. The famous Taylor Rule, which is intended to guide management of interest rates by the Federal Open Market Committee (FOMC), includes measures of the output gap and the deviation of inflation from the policy target. It does not include any measure of financial stability. Moreover, the FOMC's policy statement does not recognize financial stability as a monetary policy goal: "*Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability.*" A close reading of the statutory mandate does include mention of financial stability, albeit in a somewhat convoluted way, which may explain why financial stability has not received the same policy emphasis as the employment and inflation goals.

Prior to the Great Recession, the FOMC gave little consideration to financial conditions in formulating monetary policy. This has gradually changed as the FOMC has increasingly recognized that U.S. monetary policy influences U.S. and global financial conditions. Yet, I do not sense that financial stability is yet a full equal to the other two monetary policy goals in FOMC deliberations and in the conduct of monetary policy.

When the FOMC raised its policy target for the federal funds rate in December 2015, there was no explicit mention of financial stability in its policy statement and only an indirect reference to "... *taking into account domestic and international developments.*" At the same meeting, the quarterly projections of economic variable revealed that the median expectation of FOMC members was for four 25 basis points increases of the federal funds rate during 2016.

Then the market was trashed in the early days of January by global panic and market expectations of further increases in federal rate increases disappeared entirely. Dismayed, FOMC members began to utter soothing words and by mid-February market panic abated. Risk-on sentiment returned driving stock prices back to pre-panic highs. However, interest rates did not rebound and the forward yield curve settled at a level signaling only one 25 basis points increase at most during the remainder of 2016. The FOMC included dovish language in its January policy statement that aided the reemergence of optimism. Then the FOMC affirmed its more dovish stance by reducing the median number of expected 25 basis points increases in the federal funds rate during 2016 from four to two. The FOMC sharpened its language about international developments: "... *global economic and financial developments continue to pose risks.*" But the FOMC reverted to more indirect language in its April policy statement.

Thus, it seems that while the FOMC has recognized that U.S. monetary policy impacts financial conditions and the functioning of domestic and international financial markets it has yet to incorporate systematically financial stability considerations into its monetary policy deliberations and policy formulation.

Nonetheless, as the minutes of the April FOMC made clear, some members are increasingly anxious about waiting too long to raise rates with the labor market nearing full employment and with tentative indications that inflation may be firming. In spite of its highly conditional framing, the following statement from the April minutes caught the market's attention: "... *it likely would be appropriate for the Committee to increase the target range for the federal funds rate in June.*"

Before commenting upon the possibility of action at the June FOMC meeting, examination of the three monetary policy goals will set the stage.

1. Employment

As discussed in Section VI, little slack remains in the labor market and there are nascent signs of firming compensation. If employment were the only policy goal, the FOMC's task to proceed in normalizing interest rates would be clear. In previous monetary policy tightening cycles, the FOMC has always moved more quickly than it has so far in this cycle.

By pursuing a gradual tightening approach, the FOMC risks inflation overshooting the target of 2.0 percent. Of course, the target is intended to be an average over the cycle, not a ceiling. The fact is that inflation has been below the 2.0 percent target for an extended period of time. Nonetheless, some policymakers worry that if policy response is delayed too long the consequence might be risking unanchored inflation expectations.

2. Inflation

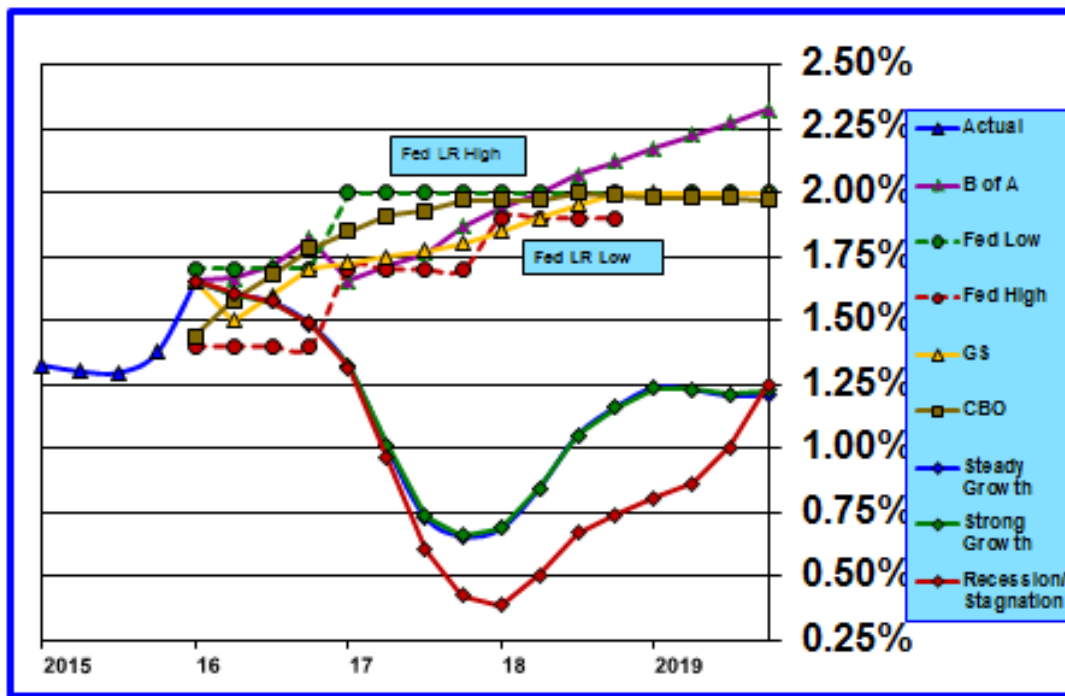
Core PCE inflation was 1.63 percent in April and has now risen about 0.4 percent from its recent low of 1.26 percent last July. Total PCE inflation, which continues to be depressed by the plunge in oil prices and lower import prices, was 0.93 percent in April, up from the 0.66 percent rate of increase that prevailed at the end of 2015 (see **Chart 17**).

a. Core PCE Inflation Forecasts

As can be seen in **Table 4** (**Chart 17** shows historical core PCE price index data and data from **Table 4** in graphical form), forecasts of the core PCE inflation index indicate that inflation will 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. **B of A** recently revised its forecast to 2.3 percent in 2019, reflecting its belief that the FOMC will intentionally let inflation exceed the 2.0 percent target to assure that real GDP growth is sustained. FOMC projections also reflect a gradual rise.

In looking at **Chart 17**, it is very obvious that my forecasts for core PCE inflation differ totally from those of other analysts and FOMC members. I make no claims to have a better forecasting model. Indeed, the forecasts of others are much more likely to occur. 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. However, I would go so far as to say that my forecasts,

CHART 17 – Core PCE Inflation
(annual percentage rate)



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Table 4
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	1.9	2.1	2.3
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	1.4	0.7	1.2	1.2
Bill’s Strong Growth	1.54	1.37	1.44	1.4	0.7	1.2	1.2
FOMC — High				1.7	2.0	2.0	
FOMC — Low				1.4	1.7	1.9	

as implausible as they appear to be comparatively, do reflect that downside risks exist in a heavily debt-leveraged global economy that is loaded with plenty of excess capacity and whose financial markets are fragile.

Table 5 shows contributions to core PCE inflation for two periods of time. The starting point is the

1.63 percent rate that prevailed in April. By the end of 2020 core PCE inflation falls to 1.35 percent as the positive impact of tight labor markets is more than offset by negative impulses from low productivity (depresses the equilibrium real rate of inflation as well as the measured level of inflation), a strong dollar (negative impact on U.S. manufacturing and lower import prices), and decelerating gains in housing prices, which is a proxy for the rent and owners equivalent rent components of the core PCE inflation index.

Table 5
Changes in Core PCE Inflation
(Basis Points)

	Labor Growth	Labor Gap	Productivity	Dollar	Housing Prices	Total
2016-2020	-10	41	-25	-24	-11	-28
2021-2026	2	3	-2	63	-1	64
2016-2026	-8	45	-27	39	-12	37

During the 2021 to 2026 period core inflation rises to 1.99 percent and converges with most other forecasts which anticipate that core PCE inflation will match the FOMC's 2.0 percent target in the long run. The primary boost to inflation during this period comes from a weakening dollar.

The greatest sensitivity of inflation in my model is to changes in the value of the dollar. Inflation changes by 9.8 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 nearly 250 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 depresses export-based economic activity. 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.

b. 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 1.31 percent in October of last year to 1.63 percent in April. More recently commodity prices have rebounded sharply from their early February lows. And, the value of the dollar has fallen about 4.7 percent from its January high. These developments have prompted some mainstream 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, 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 arguably 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 and perhaps even exceeded. 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. Owners equivalent rent could slow as housing affordability becomes more of an issue. 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.

c. 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 1.85 percent on May 28, 2016. By contrast, U.S. stock prices are within spitting distance of their all-time high reached on May 21, 2015 (S and P 500 index was 2099.06 on May 28, 2016, compared to 2130.82 on May 21, 2015).

During the height of the panic earlier this year, the market decided that interest rates will remain lower for longer. This was validated by the decline in inflation expectations embedded in market interest rates. Since then, there has been some recovery in inflation expectations but financial market measures of inflation remain subdued relative the concerns of many forecasters.

Perhaps, however, other factors have depressed the market measure of inflation expectations, which would mean that it is not necessarily a reliable indicator of future inflation. **GS** has cited two 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 the benchmark security relied on to tease out a measure of inflation expectations. Second, the price of the benchmark 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. Many 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.

3. Financial Conditions

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

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

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

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

That brings us to the recent global financial panic. Measures of financial conditions, which appear to capture well developing financial system instability, at least in the latter stages of their development, began to escalate during the summer of 2015. Indeed, the FOMC in response did delay the first federal funds rate hike that had widely been expected to occur in September. When a degree of calm returned to markets during the fall, the FOMC proceeded to initiate monetary tightening in the U.S. at its December meeting. Financial conditions began to tighten again and full-scale panic ensued in January. Again, the FOMC responded by pulling back and the crisis passed or, what is more likely, simply went into hibernation.

This is not to argue that the FOMC was wrong to begin tightening monetary policy. After all, the labor market is near full employment and the risk of rising inflation, although not necessarily the reality that

inflation will actually increase, is real. The FOMC now finds itself in the difficult position of attempting to satisfy its full employment and price stability mandates without aggravating the instability that is already at an elevated level in the global financial system.

GS calculates and publishes a financial conditions index. Moreover, **GS** has conducted extensive empirical research which demonstrates that tighter financial conditions slow growth over the next few quarters. That intuitively makes sense because tighter financial conditions reflect elevated perceptions of risks and cause market participants to act with a greater degree of caution. Riskier loans are not made and more speculative investments are deferred or avoided altogether.

GS recently included a financial conditions variable in its version of the traditional Taylor Rule, which provides guidance for calibrating monetary policy to attain full employment and price stability. **GS** posits that the effects of financial conditions on the policy interest rate are not necessarily independent of the employment and inflation components of the Taylor Rule. Because of the interactive effects, **GS** believes that a more gradual rate of monetary policy tightening in the U.S. is prudent policy. In this regard, **GS** has ratified through a model a policy that the FOMC has already embraced.

But, a gradual tightening policy may maintain a semblance of financial stability for the time being, but such a policy is not directed to dealing directly with the sources of financial instability. In that regard, such a policy is palliative, not curative. And, cynics will continue to observe, with merit, that every time that the market has a convulsion, the FOMC pulls back and, perversely, this encourages more risk-taking which worsens, rather than ameliorates, underlying financial market instability.

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

4. Interest Rates — Federal Funds Rate

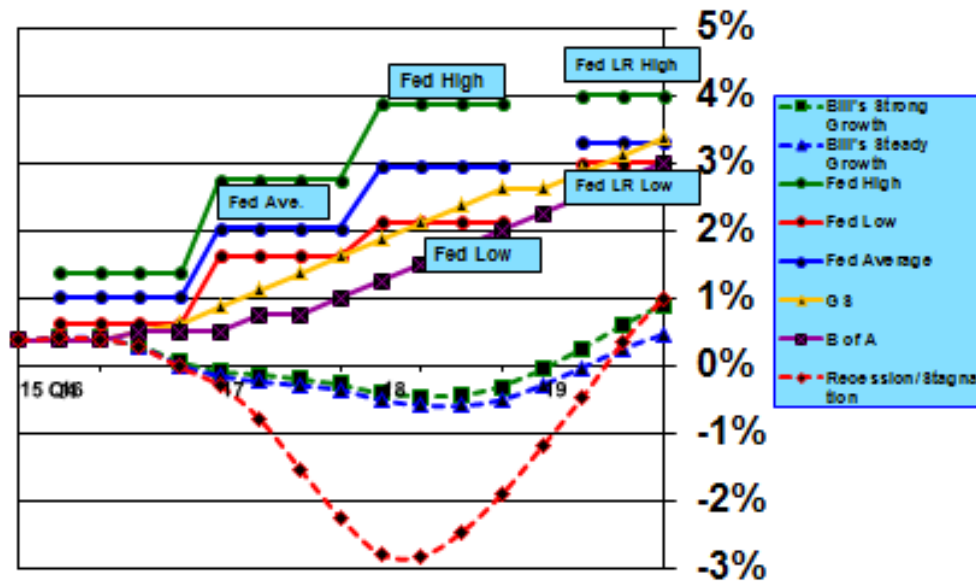
B of A has revised its forecast to only one increase in the federal funds rate during 2016 and pegs the most likely date as September. **B of A** expects two 25 basis points increases during 2017 which would bring the target federal funds rate range to 1.00 percent to 1.25 percent by the end of 2017.

GS has changed its forecasting approach to focus primarily on the timing of the next 25 basis points increase in the federal funds rate. **GS** now also expects only one more increase during 2016 and assigns a 35 percent probability to June, a 35 percent probability to July, a 20 percent probability to September, and a 10 percent probability an increase later in the year or possibility a cut. While four increases remain in **GS's** overall 2017 macro forecasts, it has ceased to place any emphasis on this forecast, preferring instead to focus on the probable timing of only the next rate increase.

Chart 18 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**.”

My forecasts continue to be outliers. They are driven by my expectation that inflation will remain lower

CHART 18 – Federal Funds Rate Forecasts



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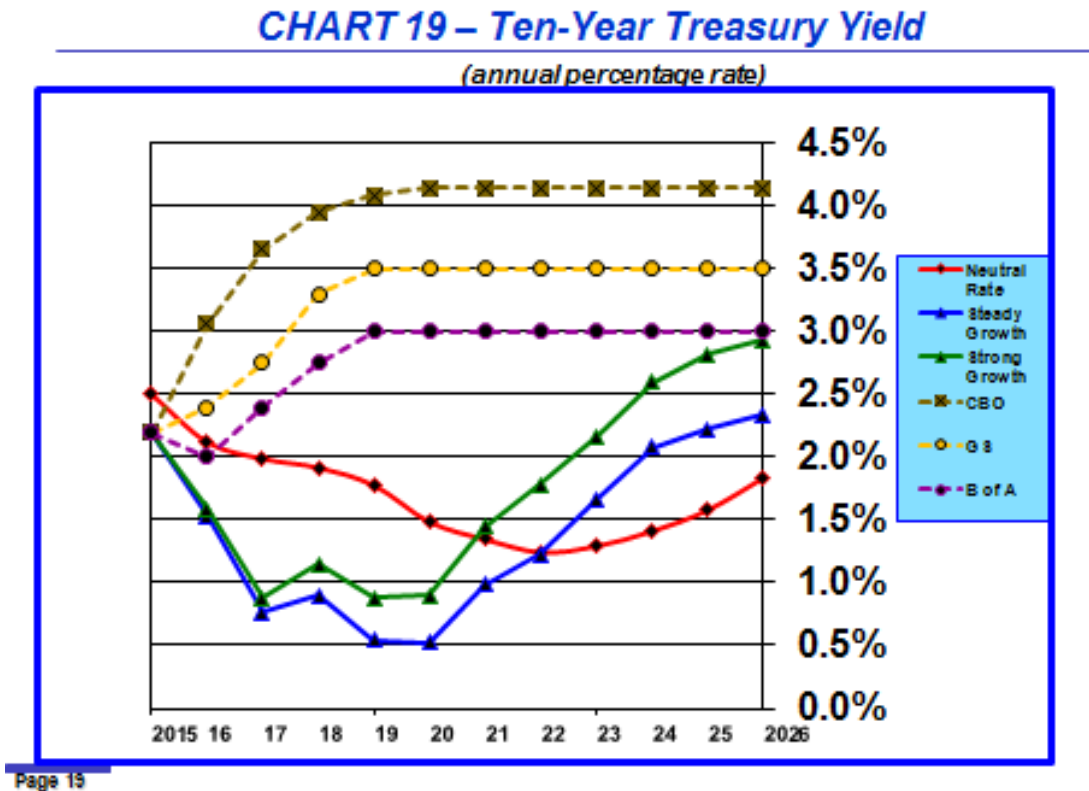
for longer than others expect and also by an even smaller expected value for the real rate of interest than the 1.25 percent level now embraced by a majority of the FOMC. It certainly is tempting to dismiss my forecasts of future values of the federal funds rate as being unrealistically low, particularly 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.

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, an FOMC rate increase and more hawkish commentary could well unleash a repeat of January’s market panic.

5. Interest Rates — 10-Year Treasury Note Yield

Chart 19 shows forecasts for the 10-year Treasury note yield over the next ten years. Analysts continue to reduce their forecasts for the ten-year yield. Partly this is a mark-to-market exercise driven by the persistent decline in this yield in opposition to expected increases. Analysts still expect long-term rates to rise from the current level, but not to as high a level.



B of A's revised long-term ten-year yield forecast is a bit odd since the 3.0 percent level is exactly the same as its 3.0 percent forecast for the federal funds rate. Because there is a positive term premium customarily attached to long-term rates, **B of A's** forecasts imply a negatively sloped yield curve in the long run, which customarily is indicative of very low inflation or even modest deflation. However, **B of A's** long-term inflation forecast is 2.0 percent. That implies that the long-term real rate of interest is just 1.0 percent. That seems implausibly low, although my estimate of the long-term neutral rate dips to about 1.25 percent in 2022 before rising to about 1.8 percent in 2026.

Over the next five years my model forecasts that the 10-year yield will decline 125 basis points from its recent level of 1.85 percent (see **Table 6**). Slowing labor force growth contributes 99 basis points to the decline. However, tighter labor market conditions raise the yield by 40 basis points. Thus, the total impact of changes in the labor market contributes 59 basis points to the decline. Rising productivity adds 20 basis points while easier financial conditions subtract 52 basis points. Collectively, all of these factors decrease the 10-year yield by 91 basis points. The remaining 34 basis points decline stems primarily from my forecast that inflation will decline.

Table 6
Changes in 10-Year Treasury-Note Yield
(Basis Points)

	Labor Growth	Labor Gap	Productiv- ity	Inflation	Financial Conditions	Other	Total
2016-2020	-99	40	20	-23	-52	-11	-125
2021-2026	-3	-4	35	165	-11	-5	178
2016-2026	-101	35	55	143	-63	-16	52

After 2020, inflation in my model moves rapidly toward 2.0 percent and this adds 165 basis points to the 10-year yield by 2026. What is important to note is that even though my inflation forecast eventually matches that of others, the 10-year yield rises in the aggregate by only about 50 to 100 basis points from its recent low level. Other forecasters expect the 10-year yield to rise 100 to 200 basis points and that is expected to occur within the next three years rather than in eight to ten years' time.

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, particularly in the U.S. 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 2015.

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 1.5% and 1.6% (note that my lower estimates result from slowing employment growth and near zero productivity); the FOMC has reduced its 2016 Q4/Q4 projection range from 2.3%2.5% to 2.1%2.3%*
 - *Both B of A and GS are currently projecting annualized GDP growth for Q2 of 2.6%*
- **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. Other analysts believe the current output gap is smaller than CBO's estimate.*)
- **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%.
 - *Due to disappointing productivity gains, 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 is 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 0.5%; my current productivity projection for 2016 is 0.5%; B of A's is -0.1%*
 - *Productivity was an annualized -1.0% (should be revised up slightly to -0.7% to -0.8%) in the first quarter due to a combination of strong growth in total hours worked and weak growth in output*
- **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 192,000 over the first four 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 62.82% in April 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 4.98% in April slightly above the long-term structural rate of 4.84%, according to CBO*
 - ? *The overall full employment gap is about 0.3% (unemployment gap = 0.1% 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 March was 3.7% ahead of the year earlier level due to strong employment gains during the last year; growth is projected to fall to 2.7% by the end of 2016 provided that employment growth and total hours worked slow*
- **Nominal consumer spending growth** on the Y/Y basis will be relatively stable in a range of 3.3% to 3.5%.
 - ? *While nominal spending growth over the past year as of March was rising at a 3.5% annual pace, nominal spending growth in 2016 is projected to fall to 3.1%*
 - ? *Growth in nominal retail sales was weaker than expected over the first two months of 2016 but was stronger than expected during April*
 - ? *Consumer sentiment measures have been mixed; University of Michigan's preliminary index was 95.8 in early May compared to 90.7 a year ago; the Conference Board was 94.2 in April, down from 96.1 in March and about the same as the 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 48.9 since March 2015, but they are up from the recent low of 47.7 in late April*

- **Household personal saving rate** will decline slightly as growth in spending exceeds growth in disposable income.
 - *The saving rate was 5.69% over the first three 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 2.7% 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 50.8 in April compared to 51.8 in March, 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 51.2 in May compared to 52.8 in April, 54.5 in March 53.4 in February, 53.5 in January, and 55.8 in December, reflecting modest, but stable growth in services; however, the declining trend is worrisome*
 - + *The NFIB optimism index for small businesses rose to 93.6 in April from 92.6 in March, 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 fell to 44.9 in April from 46.5 in March, 40.4 in February, 39.9 in January, and 48.6 in December, marking the 13th 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.
 - *Business investment fell at an annual rate of -6.2% in the first quarter, reflecting in part energy investment cutbacks; however, investment in non-energy areas has fallen short of expectations*
 - *GS expects business investment fall -0.8% overall during 2016; B of A expects business investment to decline -0.2% 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%.
 - *Residential housing investment rose during the first quarter at a higher than expected 17.1% annual rate, but the growth rate is expected to slow in coming quarters*
 - *GS expects housing investment to increase 10.4% in 2016; B of A expects an increase of 9.4%; both estimates are slightly above the expected range*
 - ? *Over the first four months of 2016 housing starts are 4.0% above 2015's average, but 11.1% above the first four 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%; GS expects prices to increase 3.8%*
 - ? *The Federal Housing Finance Agency's purchase only price index rose 5.7% over the 12-month period through March 2016*
- **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 2.96% in March*

- *The trade-weighted value of the dollar has fallen 5.1% since December, but appears to have stabilized in May*

- **Monetary policy** — the Federal Reserve will raise the federal funds rate two to three times during 2016 in 25 basis point increments.

+ *Although the market currently expects only one 25 basis points increase in the federal funds rate during 2016, the FOMC projects two increases; B of A expects one increase in September and GS expects two increases in September and December; in the minutes of its April meeting the FOMC stated that an increase in June was a possibility*

- **Total inflation** measures (CPI and PCE) 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 2.4% in 2016 according to B of A; PCE is expected to rise from 0.7% to 1.6%*

- **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 1.7% 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 1.85% on May 27*

- **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 2.77% in April 2016 compared to 2.57% in April 2015 but is expected to rise to at least 3.07% by the end of 2016*

- **State and Local investment** spending growth should range between 1.5% and 2.0%.

- *State and local investment spending grew at an annual rate of 2.9% in the first quarter*

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 3.0% in 2016*

- *The global manufacturing index is in a declining trend and at 50.1 in April indicates virtually no growth*
- *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 stable*
- **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 0.0%*
 - *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; nonetheless, 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 a new election has been scheduled*
 - + *Italy's banking crisis has the potential to erupt and could derail Renzi's fall constitutional referendum; however, recent ECB monetary policy initiatives have bought additional time for Italian banks*
 - + *Greece's third bailout is increasingly in jeopardy of failing; however, Greece's parliament has enacted spending cuts and tax increases necessary to meet the requirements for disbursement of funds under the current bailout agreement; debt relief is necessary according to the IMF — creditors have promised to consider that possibility in 2018 after the next set of German elections*
- **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 1.8% (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%); policy makers have once again taken actions to boost housing construction and public investment, which will give a short-term*

boost to the economy but could worsen future economic performance as debt leverage continues to grow faster than economic output

- **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

? Prime Minister Modi has had difficulty getting parliament to pass economic reforms, which has held back growth potential

- **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; however, easier U.S. monetary policy and rebounding prices of commodities have averted a potential meltdown

- 2016 GDP IMF forecast has been revised downward from 4.3% to 4.1% and is just 2.9% if China is omitted

- **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 impeachment of President Dilma Rousseff

+ Russia's 2016 GDP forecast has been revised from -1.0% to -1.8%

+ Brazil's 2016 GDP forecast is -3.5%

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

- + Forecasts of actual 2016 growth have been reduced; lower than expected productivity, if sustained, will depress potential growth*
- **U.S. employment growth** is slower or faster than expected; slower growth is the more serious risk
 - + Employment growth over the first four months of 2016 has been faster than expected, but April's growth provided a hint of a potential slowing trend*
 - **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 2.38% in April (12-month moving average); however, the rate of increase in weekly average wages has fallen from 2.42% in December to 2.21% in April as the length of the workweek has decreased; other measures of wages indicate a slight acceleration*
 - **U.S. 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%
 - + Productivity fell at an annual rate of -1.0% in the first quarter and has risen only 0.6% over the last four quarters; little improvement over the remainder of 2016 seems likely*
 - **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 the 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
 - First quarter housing investment was stronger than expected*
 - + Housing starts are rising more slowly than expected*
 - **U.S. residential housing price increases** are less than expected
 - Risk not realized; prices are rising faster than expected, although the rate of increase is expected to slow during the remainder of the year*
 - **U.S. private business investment** does not improve as much as or more than expected; falling short of expectations is the more serious risk
 - + Business investment declined sharply in the first quarter and is now expected to be negative for the entire year*
 - **Oil price declines** that occurred in 2015 trigger bankruptcies and cause tighter financial conditions with negative implications for economic activity and growth

? *Early in the year it appeared that this risk would be realized; however, the rebound in the price of oil has delayed, perhaps prevented, realization of potential problems*

- **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 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
 - *Risk not realized — spending rose faster than expected in the first quarter*
- **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*
- **ECB's** quantitative easing program is not successful in raising inflation and stimulating the European economy
 - + *Risk realized — inflation forecast is 0.0% 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 about profitability and problem loans*
- **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**

+ *Risk realized* — reforms have been delayed in favor of economic stimulus implemented primarily through state-owned banks and the municipal bond market

- **China's growth** slows more than expected

- *Risk not realized* — policy makers are pulling out all the stops to boost the growth rate; this will eventually backfire, but not during 2016

- **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* — although recent data reports have had a modest upbeat tone, underlying conditions are slowly deteriorating and the popularity of the Abe government is eroding

+ *Kyushu earthquakes pose a severe threat to Japan's economy which may be diminished through a massive fiscal stimulus program*

- 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, although no serious dislocation are yet evident*

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