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

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# The Longbrake Letter*

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As we enter the holiday season, the U.S. economy continues its slow forward march. The only significant sector that is out of step is manufacturing which is on the verge of recession curtesy of a strong dollar. However, manufacturing accounts for a small fraction of total economic activity. Research indicates that developments in this sector do not predict overall economic trends.

Thus, notwithstanding recent weakness in manufacturing much of the damage inflicted by the Great Recession has been repaired. The Federal Reserve seems almost certain to take the first step In December to raise short-term interest rates above zero and commence what will probably prove to be an extended "normalization" process.

Headlines these days are dominated by political events and acts of terrorism and not by economic trends. Forecasters are rolling out their 2016 domestic and global economic outlooks. I'll join that party in next month's letter. But, I can tell you the outlook is sanguine, albeit not something that will stimulate energetic cocktail party conversation.

Professional economists are no longer offering up rosy forecasts as has been their wont for several years. The reality of slow growth has finally been accepted by all, including the Federal Reserve. Forecasts have converged to mine rather than mine converging to the consensus. The more modest outlook reflects acceptance that demographic trends — births, deaths, immigration, retirement, etc. — have slowed the rate of growth in the labor force and this is a long-term secular trend, not a transitory one. There is also growing acceptance that productivity, and therefore potential growth, has decelerated to a much lower level that is likely to continue. However, there is much head scratching about the causes of this trend and whether the right set of policies might lift productivity.

There are always a few worry warts. When the consensus coalesces around benign trends, as is currently the case, it is especially important to listen to opposing viewpoints. The consensus may well prove to be on the mark, but the history of economic cycles is replete with surprises that few anticipated, but that with the benefit of hindsight were visible and their consequences predictable.

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Surprises occur generally when the pattern of economic activity is different from past experience. If the dot.com and housing bubbles were to repeat today, we would not be as dismissive of the potential fallout as we were when we first experienced these events.

Surprises usually come from recent economic phenomena that deviate from our past experience. The question we should ask is: what is different today that could result in unpleasant surprises? The most obvious possibility is the prolonged period of zero-interest rates and the unprecedented and overwhelmingly significant experimentation with monetary policy involving significant purchases of financial assets by the Federal Reserve and other central banks around the world.

Why could the conduct of monetary policy over the last several years matter? After all, it is conventional wisdom that easy monetary policy is essential to stimulate consumer demand and business investment. But whenever prices are administered arbitrarily with the specific intent to change market outcomes there will always be risk that the behaviors that administered prices induce might create economic imbalances that eventually will prove troublesome and unsustainable. Thus, the question to be explored is whether holding short-term interest rates at zero for the last seven years has led to economic and financial activity that will prove problematic once interest rates are once again determined by market forces rather than administered judgments of the Federal Reserve.

This question is explored in the next section of this month's letter.

## I. Potential Route to Recession

There are two potential imbalances that could derail an otherwise slow, but relatively benign, economic expansion. One has to do with administered interest rates and substantial quantitative easing as mentioned in the introduction. The other has to do with global dollar liquidity and the possibility that a severe dollar squeeze could develop which would push the value of the dollar sharply higher resulting in pushing down economic growth and unleashing powerful deflationary forces. Each of these possibilities is explored in this section. Summaries of each possibility and its consequences for the economy are drawn from the writings of Charles Gave of GavekalDragonomics Global Research. I have not formed my own opinion about the seriousness of these threats, so I am neither agreeing with nor rejecting Charles Gave's logic. But I would offer that the logic is well reasoned and should not be dismissed out of hand.

### 1. Typology of a Deflationary Bust

On July 23, 2015, Charles Gave published a research commentary that articulated the four phases of a deflationary bust:[1]

- ***Phase 1*** — *"The central bank follows a Keynesian policy of abnormally low interest rates. This period is marked by rising asset prices and rising leverage in the financial system."*

[1] Charles Gave. "The Typology of a Deflationary Bust," GavekalDragonomics Global Research, July 23, 2015.

Conventional wisdom (Keynesian theory) posits that economic recessions are caused by insufficient aggregate demand and too much saving. The policy antidote is to drive interest rates lower to discourage saving and encourage demand. For much of the last seven years the real rate of interest has been negative and probably is still near zero. Gave, citing Knut Wicksell, observes that *"... the optimum allocation of capital takes place when the marginal return on capital is equal to its marginal cost."* What this means, according to Gave, is that short-term interest rates should equal the nominal rate of growth for capital, which he equates as equal to the growth rate in nominal GDP.

- ***Phase 2*** — *"The abnormally low interest rates lead ... to massive misallocations of capital, causing a structural decline in the growth rate of the economy."*

Nominal short-term interest rates have been substantially below nominal GDP growth for over six years. This is fact. During this time economists have lowered estimates of the structural potential growth rate in the economy. The primary driver of these reduced forecasts of potential growth is a steady decline in expected productivity. A significant decline in actual productivity over the last six years is fact. The decline is a direct result of the "misallocation of capital" that Gave refers to. Massive injections of liquidity into the economy have gone into existing assets, driving up their prices, and not into new productive investment — thus the decline in productivity.

- ***Phase 3*** — *At some point in this structural decline, the rate of return on invested capital falls below the cost of capital, and the leverage in the system can no longer be serviced."*

Gave puts the process that develops during Phase 3 succinctly: "*A low cost of capital leads ... to higher prices for existing assets sporting lower marginal returns, so encouraging the buyers of exisiting assets to leverage up in order to capture the difference between the low cost of money and the meager, but nonetheless higher, return on capital of existing assets."* This leads progressively to a lower rate of real GDP growth as productivity is depressed. It diverts wealth to the rich and exacerbates wealth (income) inequality. It interferes with the natural working of creative destruction by enabling inefficient companies to survive by relying on cheap debt. It artificially depresses the value of the dollar and transmits imbalances to other economies. This last phenomenon has reversed over the last year and a half with a strengthening dollar. But this should not be regarded as contradictory evidence because it is the direct result of other major economies pursuing even more aggressive monetary easing, particularly Europe and Japan.

Gave believes that the U.S. is nearing the end of Phase 3.

- ***Phase 4*** — *"This is the fabled Minsky Moment' which heralds the deflationary bust. The prices of risk assets fall precipitously in a violent crisis ... From there we move into ... [a] secondary depression' which can last anywhere between five and 10 years."*

Panic erupts when financial leverage has built to a level that makes servicing debt difficult. The trigger event would probably be a rise in short-term interest rates. This is exactly what the Federal Reserve appears ready to commence. However, because the Federal Reserve has signaled its intent to "normalize" rates gradually, it is likely that nothing dramatic will occur immediately. And, it is also possible that if

the tightening process is gradual and extends over a long period of time imbalances might be ameliorated without triggering a panic.

## 2. On the Road to a Deflationary Bust

For a while during August and September it looked like panic might seize global markets. However, the moment passed as policymakers worked to calm global markets. This development should be considered to be a reprieve rather than a cure as liquidity and sentiment improved but underlying fundamentals continue to worsen. In other words, we are still in Phase 3. Phase 4 has yet to commence.

Fundamental developments include:

- Global growth is slowing and leading indicators presage further deceleration.
- Recent U.S. data reflect a slowing in private investment spending.
- Increasingly, businesses are moving from positive to negative cash flow, which increases prospective vulnerability as short-term interest rates begin to rise.
- Widening corporate credit spreads reflect growing solvency concerns and reduced risk appetite.
- Much lower commodity prices are here to stay. Solvency issues have yet to emerge but this is a matter of when, not if. Venezuela is on the verge of economic collapse. Widening credit spreads particularly in the commodities and energy sectors may well turn out to be leading indicators of an increase in bankruptcies in coming months. Solvency risks have yet to emerge because equity holders have absorbed the losses to date. But this will change when debt holders are forced to absorb losses. This is probably coming.
- The stronger dollar is beginning to depress exports.
- Leading indicators of inflation point to lower inflation. Various measures of inflation expectations continue to edge downward contrary to Federal Reserve assertions and the expectations of many forecasters that inflation will return to the target level of 2.0 percent by 2018.
- Over the long run stock market returns and corporate profits grow at the same rate. This seems intuitively obvious. Over shorter periods, the relationship often breaks down but has always eventually returned over the longer run. Relative to the grow rate in corporate profits, U.S. stock prices are currently overvalued by approximately 25 percent.[2] This overvaluation is a direct consequence of misallocation of liquidity into existing asset price speculation.

In addition, there is open discussion about the ability of central banks to fight further deflationary pressures with interest rates at the zero bound in many countries and bloated central bank balance sheets.

[2]Charles Gave. "Philosophical Dominance, Profits and Stocks," GavekalResearch, September 23, 2015.

### 3. Tightening Global Liquidity and Potential for a Dollar Squeeze

Global liquidity has been tightening. At first blush this would appear to be an oxymoron given the expansive quantitative easing being pursued by the Bank of Japan and the European Central Bank. But, much of this liquidity has found its way into leveraged debt as investors seek to squeeze higher returns in a very-low return world.

Dollar liquidity is especially important because of the dollar's roll as a global reserve currency and also because the dollar finances a substantial portion of trade and international financial activity. Insufficient dollar liquidity has been building since the Federal Reserve ended its quantitative easing program a year ago. When the Federal Reserve begins to raise rates, this will further limit dollar liquidity.

There have been some offsets, especially from the collapse in oil prices, which are traded in dollars. The decline in oil prices has freed up between $400 and $500 billion in trade credit liquidity. The stronger dollar will eventually result in greater liquidity by widening the U.S. trade deficit. This has not yet begun, but should help in coming months.

Most economists feel that the rise in the value of the dollar has run its course. But a tighter monetary policy in the U.S., and looser policy in Europe and perhaps also in Japan, could lead to a further strengthening of the dollar. These impacts are referred to as "flow" impacts because the value of the dollar fluctuates on the basis of interest-rate differentials and policy differences among central banks.

Occasionally, however, the global stock of dollars matters if the need for dollars to finance trade and other international financial transactions exceeds the availability of dollars. In this case it becomes a matter purely of supply and demand and "flow" impacts fall by the wayside. When the supply of dollars is insufficient to meet demand for dollars, the value of the dollar will increase, and perhaps very substantially. Were this to occur, U.S. interest rates would fall sharply and inflation would decline and perhaps even turn to deflation. U.S. exporters would be clobbered and domestic economic activity would slow considerably.

Such a development currently seems unlikely but it is not implausible. In a zero-interest rate world, there is not much the Federal Reserve could do to arrest a soaring dollar other than to return to quantitative easing. But, how effective would this really prove to be when central banks of other major economies are engaging in similar actions. Read Charles Gave's "Typology of a Deflationary Bust" again to understand why such a policy response would only buy time but would end up exacerbating matters over the longer run.

### 4. Summary

While few believe the global risks of deflationary bust and inadequate dollar liquidity are significant or probable, we really won't know for sure for a considerable time period and not until after the Federal Reserve has pursued a tighter monetary policy for several quarters. Even if the probability is very low, it is not zero. Thus, it will be prudent to monitor developments closely. And, for those who are inclined to be more risk adverse and who choose to emphasize capital preservation over return, it might make sense to structure investment portfolios long duration U.S. Treasury securities and high quality corporate equities whose profits will be resilient to a slowdown in economic activity and a fall in inflation.

## II. U.S. Economic Outlook — Real GDP Growth

Annualized third quarter real GDP growth in the "Advance Estimate" was 2.1 percent, which was a small increase over the "Preliminary Estimate" of 1.5 percent (see **Table 1**). However, this was one of those instances when the improvement in the topline number wasn't really good news. The improvement was driven entirely by a favorable 85 basis point revision in inventory accumulation. All three alternative measures of real GDP growth, which exclude inventory accumulation, declined. The smallest decline from 2.66 percent to 2.60 percent was in the measure of real GDP which excludes, inventory accumulation, government investment and net exports.

**Table 1**
**Composition of 2015 and 2014 Quarterly GDP Growth**

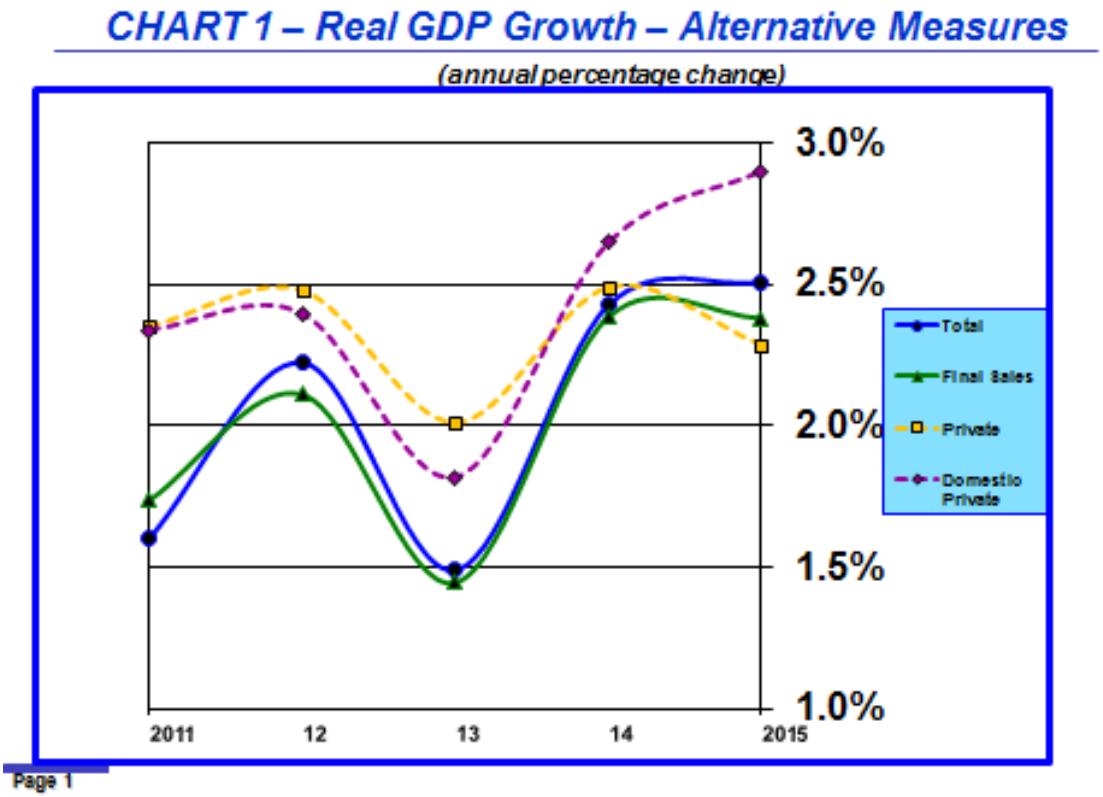
| | Third Quarter 2015 Advance Estimate | Third Quarter 2015 Preliminary Estimate | Third Quarter 2015 Final Estimate | Four Quarter Average Ending 2015:Q3 | Four Quarter Average Ending 2015:Q2 | Four Quarter Average Ending 2015:Q1 |
|---|---|---|---|---|---|---|
| Personal Consumption | 2.19% | 2.05% | | 2.17% | 2.14% | 2.03% |
| Private Investment | | | | | | |
| Nonresidential | .27% | .31% | | .50% | .67% | .75% |
| Residential | .20% | .24% | | .23% | .17% | .11% |
| Inventories | -1.44% | -.59% | | .18% | .14% | .14% |
| Net Exports | -.03% | -.22% | | -.61% | -.44% | -.31% |
| Government | .30% | .29% | | .09% | .07% | -.01% |
| Total | **1.49%** | **2.08%** | | **2.56%** | **2.74%** | **2.71%** |
| Final Sales | **2.93%** | **2.67%** | | **2.38%** | **2.60%** | **2.57%** |
| Private GDP | **2.63%** | **2.38%** | | **2.29%** | **2.54%** | **2.58%** |
| Private GDP — Net Exports | **2.66%** | **2.60%** | | **2.90%** | **2.98%** | **2.89%** |

### 1. Real GDP Growth Trend — Alternative Measures

Annualized quarterly GDP data are highly volatile. A better sense of trend can be gained by observing the four quarter moving average. This method smooths out quarterly anomalies in the data, which are amplified when compounded to produce an annualized rate. This is the way that China reports its GDP data and like the Chinese data this method results in small fluctuations over time.

Four-quarter moving average data are shown in the right three columns of **Table 1** for the first, second

and third quarters of 2015. **Chart 1** shows annual data from 2011 through 2014 for the same four measures of real GDP. Total real GDP, after dipping in 2013 partially in response to tax increases and government spending cuts, recovered to 2.45 percent in 2014 and should be near that same level in 2015. But, when inventory accumulation is eliminated, the trend from 2014 to 2015 becomes very slightly negative.




Private real GDP, which excludes both inventory accumulation and government investment spending, is likely to dip about 20 basis points in 2015 due to stronger inventory accumulation and increased government spending. In other words, the private sector has weakened slightly during 2015.

However, when the impact of net exports is excluded the story changes. Domestic private real GDP, which excludes net exports from private real GDP, is likely to gain 25 basis points in 2015, rising from 2.65 percent to 2.90 percent. This swing of 45 basis points in the respective trends of private and domestic private real GDP is primarily the consequence of the stronger dollar, which has slowed manufacturing and growth in exports and boosted imports (note that falling commodity prices have actually depressed the value of imports over the last year, but that has been more than offset by the decline in the value of exports).

**Table 1** shows the four-quarter growth rates for each quarter of 2015 and provides more color about emerging trends. The total, final sales, and private measures of real GDP have all slowed by 15 to 20 basis points from the first to third quarters of 2015. But, the private domestic measure is unchanged. The story here is that the strong dollar is still depressing real GDP growth.

## 2. 2015 Q3 GDP — Advance Estimate

***Personal consumption*** growth was slightly worse than the "Preliminary Estimate." The increase of 2.05 percent, however, still was sufficient to boost the four-quarter trend rate to 2.17 percent. The trend in growth in consumption spending has been rising since bottoming at 0.93 percent in the second quarter of 2013 but momentum appears to be fading. The rising trend has been propelled by strong employment gains. Employment growth is likely to slow considerably in coming months. Growth in consumption spending, however, could hold up if wages begin to accelerate.

***Net exports*** subtracted 22 basis points from third quarter real GDP growth. This is a smaller negative impact than the recent trend which has resulted in the subtraction of 61 basis points from real GDP over the last four quarters. It is too early to conclude that the negative effects of the rise in the value of the dollar have run their course. But, the worst impact may be behind us and the negative consequences of a strong dollar should diminish going forward unless the dollar continues to strengthen.

***Nonresidential business investment*** contributed 31 basis points to real GDP growth. This is still below the four-quarter average contribution to 50 basis points. Nonresidential investment has been depressed during 2015 by significant cutbacks in energy investment. While the impact of falling energy prices on energy investment will dissipate quickly, the trend toward slower nonresidential investment growth is likely to continue as employment growth slows and consumer spending stabilizes.

***Government consumption and investment spending*** was little changed from the "Advance Estimate" and contributed 29 basis points to real GDP growth, all of which came from state and local spending. The trend in government spending has been very slightly positive for the last two quarters, all due to state and local investment spending. The negative trend in federal investment spending has moderated but has still subtracted 5 basis points from trend real GDP over the last two quarters.

***Inventories*** increased 85 basis points in the "Preliminary Estimate." Inventory accumulation from quarter to quarter is extremely volatile, which is why it is better to focus on growth in final sales rather than total GDP and why it is also better to look at the four-quarter trend in inventory accumulation. With the exception of recessions and their immediate aftermath, the trend in inventory accumulation is very stable. Currently trend inventory accumulation is adding about 18 basis points to real GDP growth. This is 5 to 10 basis points above recent trend growth. This is corroborated by the recent increase in the inventory-to-sales ratio. There is no reason to expect trend growth to accelerate. Indeed, just-in-time inventory management should result in a moderate slowing in trend growth over time. The current trend rate is probably unsustainable, but its level is a sufficiently small contributor to real GDP growth that a significant decrease in inventory accumulation will have only a limited negative impact on trend real GDP growth.

All in all, the story is one of moderate growth that is relatively stable. Over time slowing employment growth will push the growth rate down. And, if productivity doesn't recover, downward pressure on trend growth could be worse than expected.

## 3. GDP Forecasts for Q4

**Table 2** shows forecasts/projections for the fourth quarter of 2015 and for the full years 2015 through 2019.

**Table 2**
**Real GDP Growth Forecasts — B of A, GS, Bill's "Steady Growth", Bill's "Strong Growth" and FOMC High and Low Projections**

| | 2015 Q4 | 2015 Q4/Q4 | 2015 Y/Y | 2016 Y/Y | 2017 Y/Y | 2018 Y/Y | 2019 Y/Y |
|---|---|---|---|---|---|---|---|
| B of A | 1.9 | 2.15# | 2.5 | 2.45 | 2.35 | 2.1 | 2.0 |
| GS | 2.0 | 2.15# | 2.5 | 2.3 | 2.25 | 2.1 | 1.9 |
| Bill's Steady Growth | | 2.3# | 2.5 | 2.25 | 1.85 | 1.5 | 1.6 |
| Bill's Strong Growth | | 2.1# | 2.5 | 2.35 | 2.0 | 1.75 | 1.85 |
| FOMC — High# | | 2.3# | | 2.6# | 2.4# | 2.2# | |
| FOMC — Low # | | 2.0# | | 2.2# | 2.0# | 1.8# | |

#Measured from Q4 to Q4

**B of A** expects real GDP growth to come in at a relatively weak 1.9 percent in the fourth quarter. **GS** expects 2.0 percent. These estimates are based on only fragmentary fourth quarter data which means they could change substantially as additional data reports become available.

Consumption and investment are expected to slow moderately. Inventory accumulation is still too high and could reduce fourth quarter growth. On the positive side government investment spending is expected to move a little higher. All-in-all real GDP growth should differ little from third quarter growth and should be close to a trend rate that is consistent with relatively full employment.

## 4. Forecasts for 2015 – 2019

**Real GDP.** As **Chart 2** shows, most forecasters expect GDP growth to be about 2.25 to 2.45 percent Y/Y in 2016. In subsequent years the variation in forecasts is substantially less than it has been in the past and all forecasters agree that trend growth will decelerate slightly over time. CBO's forecast, made just last August, is a clear outlier and is likely to be revised significantly early next year when it does its annual budget update.

**Consumer Spending.** Fourth quarter consumer spending is expected to be a bit slower, reflecting the waning benefits of lower oil prices and slowing employment and disposable income growth. As can be seen in **Table 3** and **Chart 3**, forecasts for real consumer spending growth in 2016 range between 2.50 percent and 2.65 and are below the near 3.0 percent growth rate which seems probable in 2015.

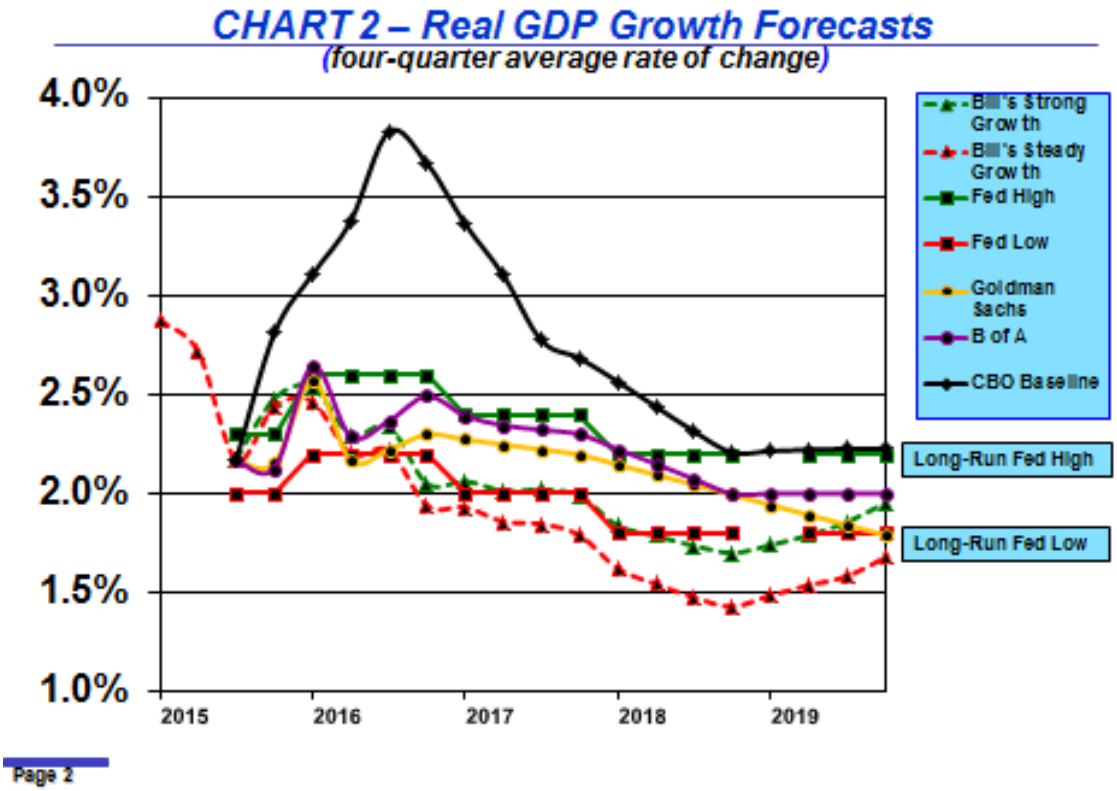
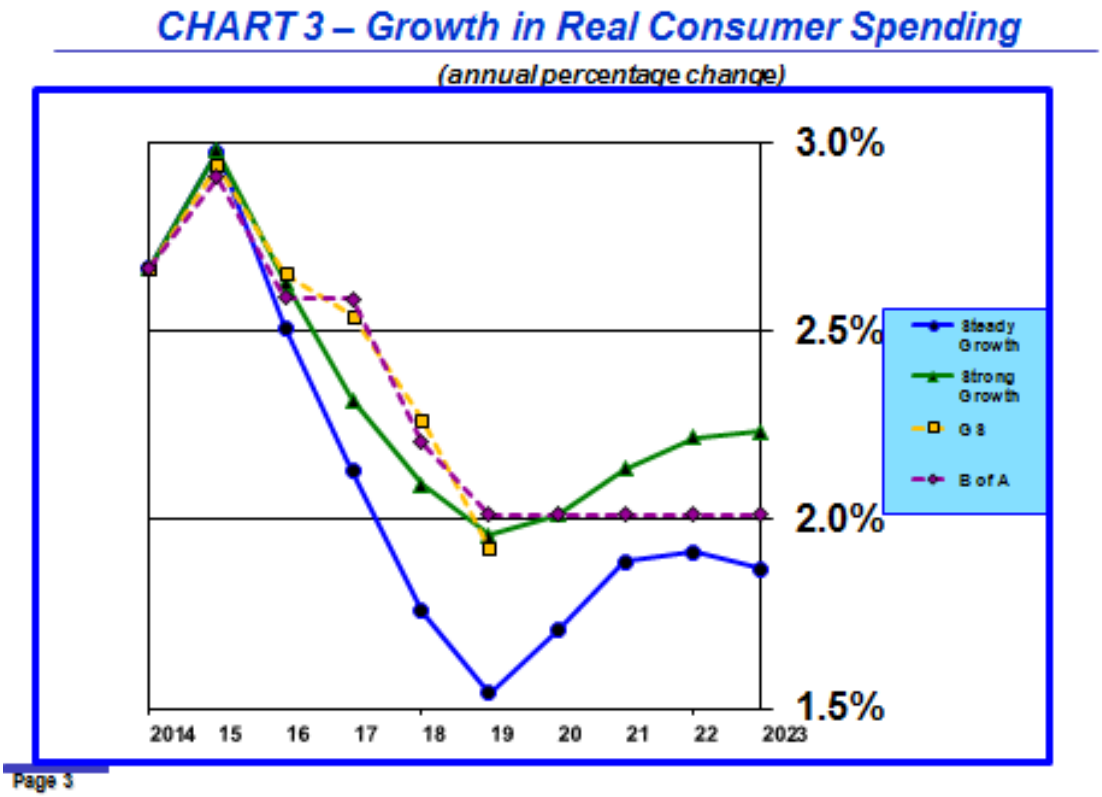



**Table 3**
**Real Consumer Spending Growth Rate Y/Y Forecasts — B of A, GS, Bill's "Steady Growth" and Bill's "Strong Growth"**

| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|
| Actual | 1.38 | 1.65 | 2.67 | | | | |
| B of A | | | | 2.91 | 2.59 | 2.59 | 2.20 |
| GS | | | | 2.94 | 2.65 | 2.54 | 2.27 |
| Bill's Steady Growth | | | | 2.98 | 2.51 | 2.13 | 1.76 |
| Bill's Strong Growth | | | | 2.98 | 2.63 | 2.32 | 2.09 |

Beyond 2016, trend growth in real consumer spending should continue to decline as employment growth slows. My forecasts are somewhat more pessimistic, primarily because I am less optimistic about a recovery in productivity. Over long periods of time higher productivity is correlated with high real wage gains which, in turn, support greater growth in real consumption spending.

**Residential Investment.** Forecasts for growth in residential investment are shown in **Table 4**. Residential investment growth has been strong during 2015 and is on pace to grow 8.5 to 8.8 percent. Both **GS** and **B of A** expect residential investment growth to continue to be strong in 2016 and 2017.




However, the two forecasters part company in 2018. Strong growth is warranted because of the shortage of housing that now exists and the surge in new household formation. Census Bureau housing vacancy data suggest that there is a shortage of multi-family housing and a slight surplus of single family housing. Strong household growth should support construction of about 1.4 million units annually. Housing starts are running about 1.15 million annually currently, so there is still room for above average growth in housing investment.

Notwithstanding the recent strength in residential housing investment, it would probably be stronger were it not for the persistence of tight mortgage underwriting standards and the absence of a fully-functioning market for private mortgages. Except for jumbo mortgages, nearly all mortgages today are guaranteed by FHA, Fannie Mae and Freddie Mac.

**Nonresidential Investment.** Forecasts for growth in nonresidential investment are shown in **Table 4**. This category of investment has repeatedly failed to measure up to forecaster expectations. Results so far in 2015 are no different. Real nonresidential investment should grow about 3.1 to 3.2 percent in 2015 compared to **B of A's** initial 2015 forecast of 5.2 percent growth and **GS's** initial forecast of 4.8 percent.

Both forecasters expect investment growth in 2016 to match 2015's level but then improve slightly in 2017 and 2018. **GS** believes that tighter financial conditions will temporarily reduce long-run trend non-residential investment growth of approximately 5.0 percent by 0.5 to 1.0 percent in 2016. **GS's** forecasting model indicates that strong consumer spending, resilient profit margins, and easing lending standards will support a rebound back to trend in 2017 and 2018. However, a forecasting model is only as good as

**Table 4**
**Real Private Business 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. 1947-2015 |
|---|---|---|---|---|---|---|---|---|
| REAL PRIVATE BUSINESS INVESTMENT | | | | | | | | |
| Actual | 9.78 | 4.21 | 5.31 | | | | | **3.81**** |
| B of A | | | | 4.11 | 4.42 | 4.23 | 3.95 | |
| GS | | | | 4.16 | 4.14 | 4.70 | 4.50 | |
| Bill's Steady Growth | | | | 4.15 | 2.79 | 2.08 | 1.93 | |
| Bill's Strong Growth | | | | 4.17 | 3.19 | 2.65 | 2.55 | |
| REAL NONRESIDENTIAL INVESTMENT | | | | | | | | |
| Actual | 8.98 | 3.03 | 6.15 | | | | | **2.14*** |
| B of A | | | | 3.19 | 3.12 | 3.56 | 3.65 | |
| GS | | | | 3.10 | 3.04 | 3.87 | 3.89 | |
| REAL RESIDENTIAL INVESTMENT | | | | | | | | |
| Actual | 13.51 | 9.52 | 1.76 | | | | | **-1.36*** |
| B of A | | | | 8.50 | 8.06 | 6.58 | 4.14 | |
| GS | | | | 8.82 | 8.72 | 7.98 | 6.82 | |

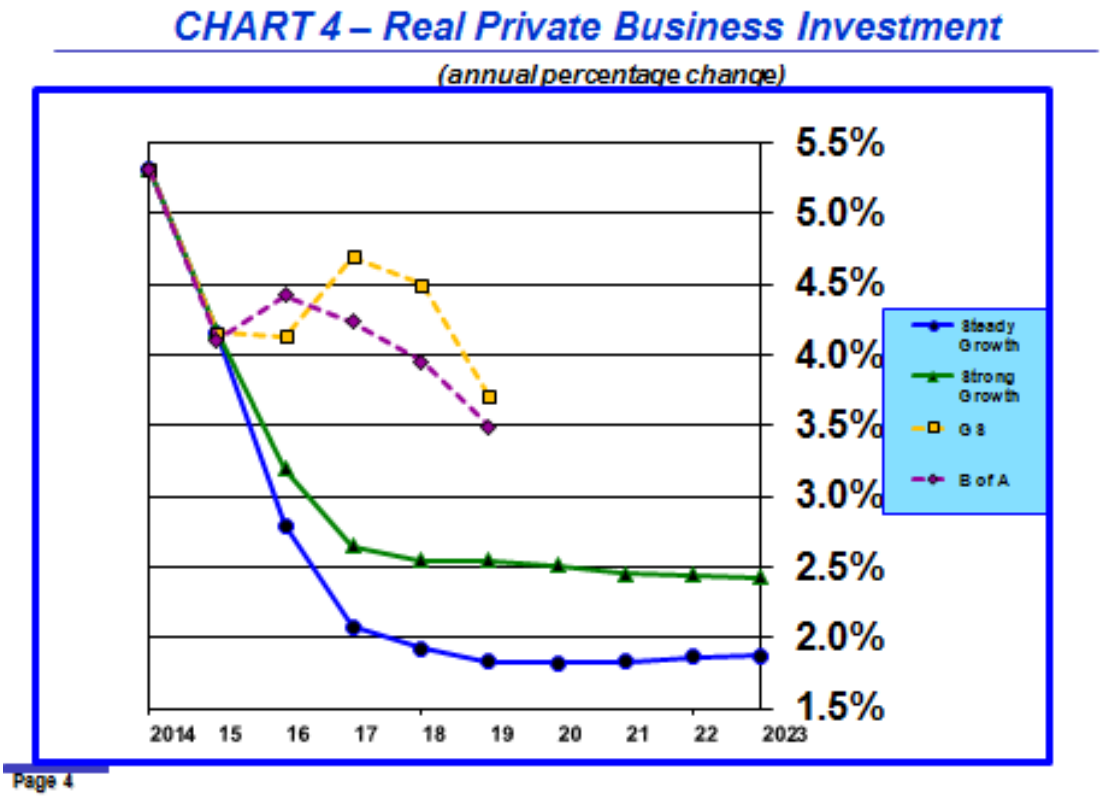
*Average 2000-2015

**Real private business investment = 1.49% for 2000-2015

the soundness of its assumptions and consumer spending growth and resilient profit margins may prove optimistic. In any event, I continue to believe these forecasts are too optimistic as they do not appear to take into account fully slowing employment growth, an incipient recession in manufacturing and the effects of low real rates of interest in depressing investment.

**Private Business Investment.** Private business investment includes both residential and nonresidential investment. I provide a forecast of this measure of investment but not of its component parts — residential and nonresidential investment. My forecast for 2015 is not materially different from other forecasts. However, as can be seen in **Chart 4**, my below consensus forecasts in 2016, 2017 and 2018 result from my more pessimistic outlook for nonresidential investment, which I believe will continue to be depressed by low real interest rates and slower real GDP growth.

**Government Investment.** Government investment spending is divided between federal and state/local




investment spending. State and local government spending accounts for 61.2 percent of the total.

**Table 5** and **Chart 5** show actual total government real investment growth for 2012, 2013, and 2014, and forecasts for 2015 through 2018. Relative to the 68-year average growth of 2.65 percent annually the actual results and forecasts are quite pessimistic. But the pessimism is warranted by the political constraints that have been imposed on government spending in recent years. Forecasts for 2015-2018, including my own, assume a modest increase over the 0.94 percent annual real rate of growth in government investment spending over the last 16 years. However, as is already turning out to be the case in 2015, even these low rates of growth may prove to be too optimistic.

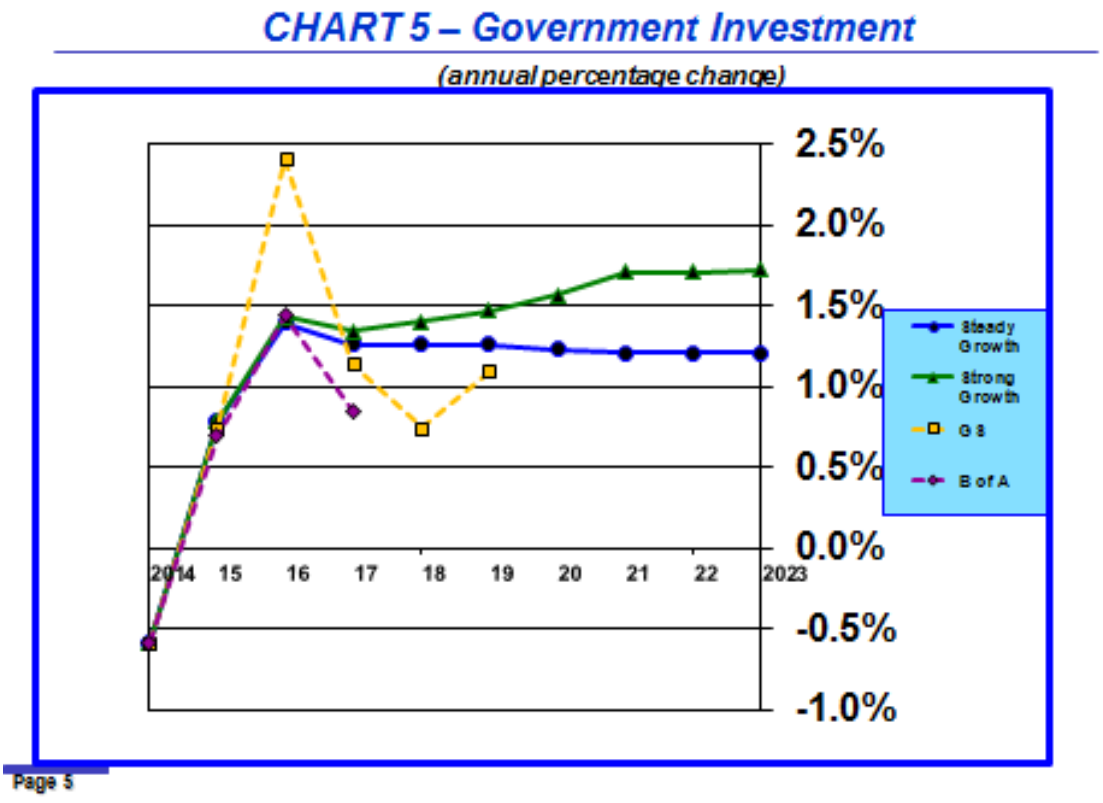
Inflation-adjusted state and local spending is up 1.86 percent over the last year and should grow at a somewhat slower rate of 1.5 percent for all of 2015. Federal spending has declined 1.12 percent over the last year and is expected to fall about 0.45 percent during 2015. Growth in federal investment spending will improve in 2016 due to increases in spending caps authorized by Congress in the recent two-year budget compromise. However, over the longer run, all forecasters expect the trend in government investment spending growth to remain much lower than the historical level.

**Trade.** The trade-weighted value of the dollar has declined 21.5 percent since the dollar's value peaked in October 2013. This should lead to a larger trade deficit as growth in exports is depressed and cheaper prices lead to a surge in imports. Indeed, exports of goods have fallen from 9.6 percent of nominal GDP in October 2013 to 8.8 percent in September. However, imports of goods have also fallen over the same time period from 14.0 percent of nominal GDP to 13.0 percent, with the result that the trade deficit for

**Table 5**
**Government Investment 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. 1947-2015 |
|---|---|---|---|---|---|---|---|---|
| Actual | -1.85 | -2.95 | -0.58 | | | | | **2.65*** |
| B of A | | | | 0.69 | 1.44 | 0.85 | | |
| GS | | | | 0.74 | 2.41 | 1.14 | 0.74 | |
| **Bill's Steady Growth** | | | | 0.78 | 1.39 | 1.26 | 1.26 | |
| **Bill's Strong Growth** | | | | 0.78 | 1.43 | 1.34 | 1.40 | |

*2000-2015 average growth rate = 0.94%; federal = 2.14%; state & local = 0.24%




goods remains unchanged at 4.15 percent of nominal GDP. Total goods exports have declined 5.3 percent over the last 12 months compared to a 2.5 percent decline in total goods imports. Put together, the trade deficit in goods has increased 3.9 percent over the last year.

The total trade deficit, which includes financial flows, also is unchanged over the last year at 2.9 percent. Thus, the weaker dollar has not yet had the expected effect in increasing the trade deficit. A partial explanation is that the fall in commodity prices, particularly oil, has depressed the value of imports. Nonetheless, lower prices of imports are already depressing measures of inflation and will eventually prompt consumers to substitute cheaper foreign goods for more expensive domestic goods. In other words, it is only a matter of time before the expected increase in the trade deficit for goods occurs.

## III. Employment

While the unemployment rate continues to decline and reached 5.04 percent in October, a level many consider to reflect full employment and a tight labor market, other measures of employment paint a picture of some lingering weakness. Indeed, many indicators of the labor market are perplexing. For example, why is the labor force growing so slowly and why is the labor force participation rate declining? What happened to discouraged workers? If the labor market really is at full employment, why aren't wage rates rising?

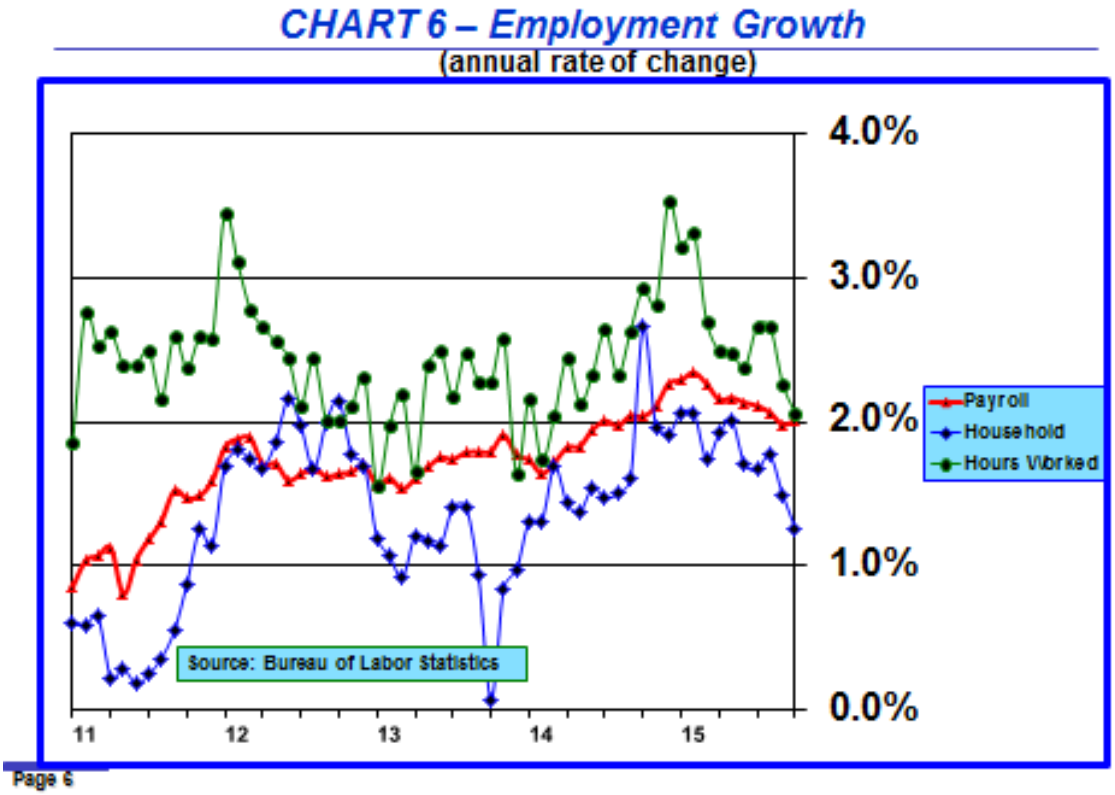
### 1. Employment Growth

Following September's weak employment report, October's was very strong. The increase in payrolls in October was 271,000 compared to 137,000 in September. This boosted the 2015 monthly average increase to 206,000. The 12-month rate of growth in payroll employment has eased slightly to 2.01 percent after peaking at 2.34 percent in February, but remains quite strong. However, the story told by the household survey is quite different and much weaker. According to the household employment survey, the 12-month rate of employment growth has declined from 2.65 percent in November 2014 to 1.26 percent in October. The 12-month rate of growth in total hours worked has also declined from 3.53 percent in December 2014 to 2.06 percent in October.

**Chart 6** shows that all measures of employment growth are slowing. This is exactly what should be happening as the economy approaches full employment. Employment growth should decelerate to a level consistent with trends in labor force demographics and participation.

Labor force participation continues to fall short of what demographic trends and historical relationships imply. This gap led many to conclude that a significant number of uncounted discouraged workers existed who would re-enter the labor force as the labor market tightened. Well, the labor market has tightened considerably as indicated by various measures of unemployment and the participation rate has not recovered, which implies that there are fewer discouraged workers than thought to be the case. Increasingly, as time passes, the facts speak for themselves but there is not yet widespread consensus about the reasons for the greater than expected decrease in the participation rate. **GS** has revised its outlook and believes that only a small participation gap of approximately 0.3 to 0.4 percent remains. Furthermore, the participate rate should continue to fall at about 25 basis points annually, reflecting demographic trends.

The failure of a falling unemployment rate to translate into an acceleration in wage rate growth has led to speculation that the relationship between unemployment and inflation, dubbed the "Phillips Curve" by




economists, has changed with the implication that the noninflationary rate of unemployment is lower than the historical level of approximately 5.0 percent.

### 2. Wage Growth — Is Acceleration Just Around the Corner or Missing in Action?

If the labor market really is approaching full employment, albeit at a much lower number of employed workers than expected, 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 in spite of ample anecdotal commentary, acceleration in wage growth is barely discernible in aggregate statistical data. For quite some time FOMC members have been expecting the rate of growth in wages to pick up and boost inflation. That has yet to happen convincingly. FOMC members are not the only ones with poor forecasting track records. Private sector economists have forecast acceleration in wage rate growth for some time now as the amount of slack in the labor market gradually declined. To date there is only limited evidence, and it is mixed, that wage increases are accelerating. However, the expectation that acceleration should occur is so embedded that missed forecasts simply get pushed forward in time.

### 3. Broad-Based Measures of Labor Compensation

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

more bargaining power.

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

Although both sets of measures are highly correlated over time, because compilation methodologies differ for each set of measures, percentage changes over fixed time periods will not necessarily be in sync. This is the case currently. Hourly wages for all employees are rising 2.16 percent annually, but this is only 8 basis points higher than the 2.08 percent rate of increase that prevailed 12 months ago. However, emerging upward pressure is now visible as indicated by a 2.48 percent year over year rate of change in hourly wages in October, although this was a considerable jump from the annual rate of change of 2.28 percent in September and may reflect some noise in the data.

The wage and salary component of ECI, which had been relatively stable at a 1.5 percent annual rate of growth between 2009 and 2013 began edging up in 2014 and was 2.07 percent in the second quarter of 2015. The more comprehensive measure of ECI, which includes benefits, has risen only 1.88 percent over the last year. In fact, growth in the wages and salaries component of ECI has been stable over the last year while growth in benefits has fallen considerably.

### 4. Hourly and Weekly Wage Trends

As can be seen in **Chart 7**, the rate of growth in hourly wages for all workers has fluctuated in a narrow band in the vicinity of 2.0 percent for the last six years and only very recently has begun to edge up. Over the last year wage growth has inched up about 0.1 percent to 2.16 percent and over the last six months the growth rate has been 2.34 percent. Thus, there are tentative signs of acceleration in wage growth but the increases are surprisingly low given how much labor market slack has diminished.

### 5. Employment Cost Index

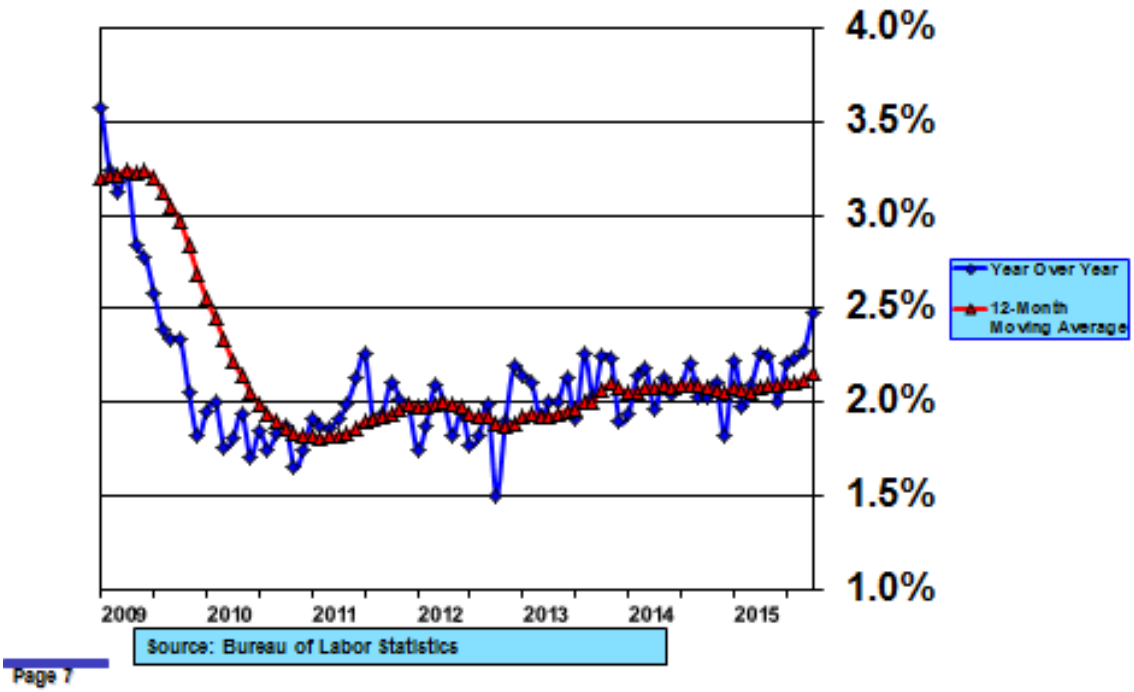
**Chart 8** shows trends in wages and salaries, benefits, and total compensation. The recent short-lived acceleration in ECI during the first quarter of 2015 apparently was not the result of a firming trend in compensation growth but a compositional anomaly due to one-time reporting of nonproduction bonuses in a few industry sectors. When these one-time compensation elements are discounted, ECI tells basically the story of no substantive acceleration in employment compensation.

### 6. GS's Wage Tracker

**GS's** wage tracker is a statistical compilation of three measures — ECI (40 percent weight); average hourly earnings (AHE) of production & non-supervisory workers (35 percent weight); and compensation per hour

## CHART 7 – Hourly Wage Rate Growth – All Workers

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

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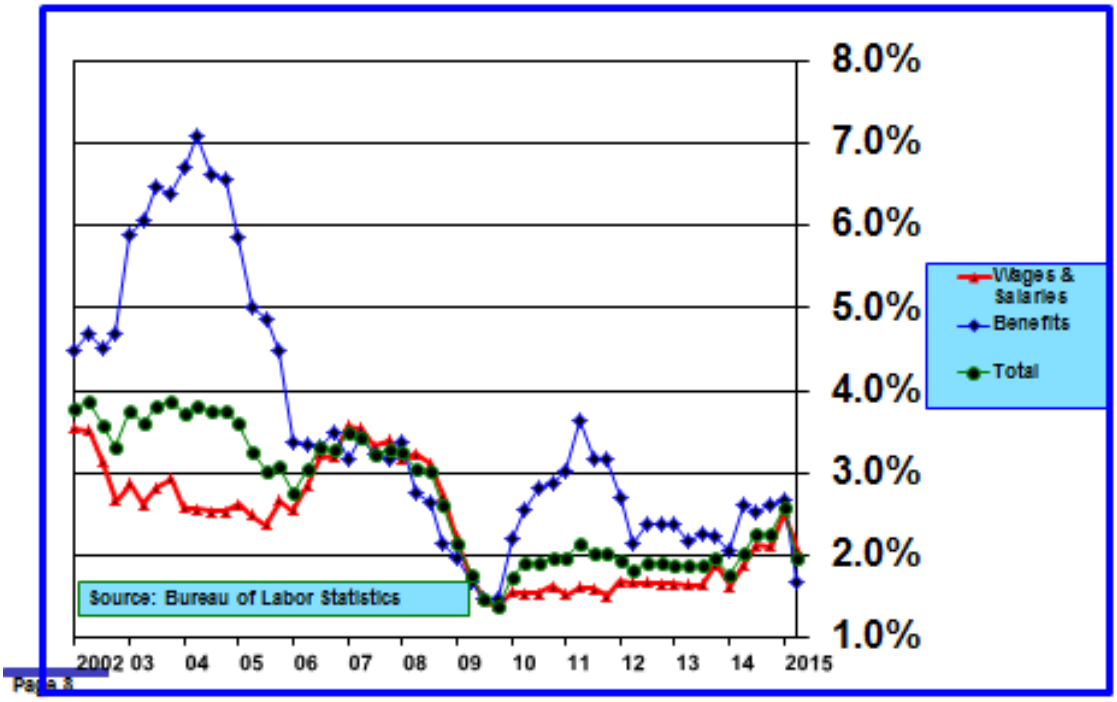
## CHART 8 – Employment Cost Index

(annual rate of change)

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from the national income accounts (25 percent weight). The wage tracker in the second quarter of 2015 indicated that wages were rising 2.0 percent annually, down from 2.2 percent in the first quarter. **GS's** wage tracker has varied little from the 2.0 percent level for the last six years. **GS** had expected its wage tracker to rise to 2.5 percent in the second quarter. Obviously, it did not and the miss was sizeable.

Nonetheless, **GS** still expects the wage tracker to rise to between 2.50 percent and 2.75 percent by the end of 2015, although its confidence in its forecast appears to have wavered.

In a separate analysis of trends in wage growth at the state level, **GS** did find evidence supporting modest wage rate acceleration in states with less labor market slack.

While **GS's** wage tracker forecasts are based on its statistical analytics, intuitively, even though **GS** has lowered its expectation, the forecasts still seem optimistic to me. There is an embedded assumption that U.S. labor force composition is stable. If, however, the composition is shifting toward lower wage categories and more part-time work, an eventual wage growth rate of 3.5 percent could well be too high. In addition, the rise to 3.5 percent presumes that the historical relationship between labor market slack and wage rate growth is stable. This also does not appear to take into consideration that the current level of inflation has been low for an extended period of time and that might have the effect of slowing down acceleration in wage rate growth for a given amount of labor market slack. Then, there is also the matter of low productivity. If low productivity persists, which seems likely, then this phenomenon will retard the rate of acceleration in wage rate growth.

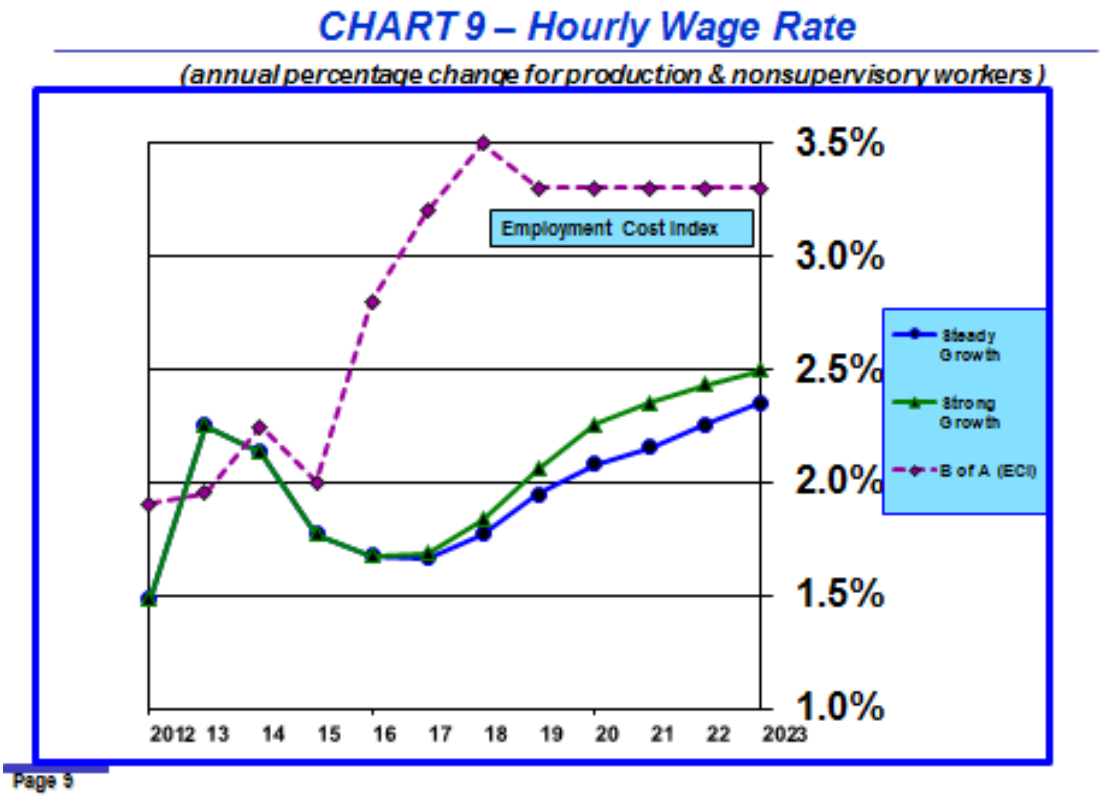
Failure of wage growth to accelerate as the labor market tightens also means that feedback loops of wages to inflation will have limited impact. This is yet another argument favoring the persistence of low inflation rates for a much longer period of time than most expect.

## 7. Prospects for Acceleration in the Growth Rate in Wages

As the labor market continues to tighten, economists continue to expect wage rate growth to accelerate. The laws of supply and demand support this expectation. So, the real question is one of just how much faster wages should grow in an economy at full employment.

As can be seen in **Chart 9**,**B of A** expects the nominal wage growth component of ECI to move up from its recent level of 2.1 percent in the second quarter of 2015 to 3.5 percent in 2018 before stabilizing at 3.3 percent thereafter. This projected increase is consistent with the historical record which indicates that growth in wages peaked at 3.6 percent in 2007 just prior to the Great Recession. However, the question that should be asked is whether this apparently moderate increase, which emulates the historical pattern, is likely to occur. My own statistical analysis suggests otherwise and is graphically very apparent in **Chart 9**.

Contrary to consensus expectations my statistical analysis suggests wage rate growth for production and nonsupervisory workers, which has averaged 1.94 percent over the first ten months of 2015, will slow to about 1.7 percent by mid-2017 and then rise gradually to 2.4 percent in 2023, based on assumptions embedded in my "Slow Growth" scenario. The projected level is a slightly higher 2.5 percent in 2023 in my "Strong Growth" scenario.




Forecast wage rate growth for production and nonsupervisory workers is based on four variables: core PCE inflation rate, productivity, the long-term U-3 unemployment rate (greater than 26 weeks), and the rate of growth in total hours worked. The short-term U-3 unemployment rate and the unemployment gap (difference between total U-3 unemployment rate and CBO's full-employment rate) were not statistically significant. **Table 6** shows the coefficients of each of these four variables and the average lag time in months between a change in the value of each variable and a change in the rate of growth in wages.

**Table 6** also shows the assumed values in the right three columns for each of the four variables for three scenarios: "Slow Growth-2017," "Slow Growth-2023," and CBO-2023. **Table 7** shows the contributions of each of these four variables to for each of the three scenarios, as well as the total estimated rate of growth in nominal wages.

The coefficients in **Table 6** indicate that the wage rate increases as inflation, productivity, and growth in total hours worked rises and falls as long-term unemployment rises. The lagged impacts of productivity and long-term unemployment take nearly five years to impact wage rate growth which explains why wage rates respond so slowly to improving economic conditions. The growth rate in total hours worked has a very significant impact which takes a little over two years to take effect. A one percentage point increase in the rate of growth in total hours worked will increase wage rate growth by about 63 basis points with a 27 month average lag.

Wage rate growth approaches 3.0 percent in 2023 if CBO's assumptions prevail on a sustained basis. My sense is that CBO's assumptions are more likely to be too optimistic rather than too pessimistic. That

**Table 6**
**Factors Affecting Growth in Wage Rates for Production and Nonsupervisory Employees**

| | | | ASSUMPTIONS | | |
|---|---|---|---|---|---|
| | Coefficient | Average Lag in Months | Slow Growth 2017 | Slow Growth 2023 | CBO 2023 |
| Core PCE | .378 | 9.3 | 1.02% | 1.47% | 1.97% |
| Productivity | .229 | 58.9 | .42% | 1.39% | 1.52% |
| Long-Term Unemployment Rate (>26 weeks) | -.641 | 56.5 | 2.91% | 1.13% | 0.82% |
| Growth Rate in Total Hours Worked | .628 | 27.1 | 1.75% | .39% | .59% |

*2000-2015 average growth rate = 0.94%; federal = 2.14%; state & local = 0.24%

**Table 7**
**Wage Rate Growth Forecasts for Production and Nonsupervisory Employees**

| | | CONTRIBUTIONS | | |
|---|---|---|---|---|
| | Coefficient | Slow Growth 2017 | Slow Growth 2023 | CBO 2023 |
| Constant | | 1.97% | 1.97% | 1.97% |
| Core PCE | .378 | .38% | .56% | .76% |
| Productivity | .229 | .10% | .32% | .35% |
| Long-Term Unemployment Rate (>26 weeks) | -.641 | -1.86% | -.73% | -.52% |
| Growth Rate in Total Hours Worked | .628 | 1.10% | .24% | .37% |
| Wage Growth Rate Estimate | | 1.69% | 2.36% | 2.93% |

*2000-2015 average growth rate = 0.94%; federal = 2.14%; state & local = 0.24%

is especially my view with respect to the forecast core PCE inflation rate.

***Based on this analysis, B of A's forecast ECI wage and salary growth rates appear not***

***only to be too high but reach that high level too quickly.*** It is important to point out that my analysis includes only production and nonsupervisory workers which is a smaller population of workers who generally have lower incomes. My analysis is based on production and nonsupervisory workers because data is available for a much longer time period than for any other wage rate measure. Thus, there is an apples-to-oranges comparison risk, if wage rate growth behaves differently in the two populations. But, it appears that the risk goes in the direction of reinforcing the conclusion that **B of A's** ECI forecasts are too optimistic. During 2007, at the peak of the last business cycle, wages of production and nonsupervisory workers rose 4.0 percent while the ECI measure of wages and salaries rose 3.5 percent.

### 8. Relationship Between the Rate of Growth in Wages and Inflation

Research indicates that increases in the rate of growth in wages ***follow*** increases in inflation; ***they do not lead***. Moreover, the relationship is a weak one and the lag between a change in the inflation rate and a change in wage growth rates is considerable. My analysis of changes in wage rates for production and nonsupervisory workers indicates that only 38 basis points of a 1.0 percent change in inflation pass through to a change in wage rate growth and this takes an average of 9.3 months to occur. Like others I find no significant relationship in which a rise in wage rates precedes an increase in inflation.

## IV. Fiscal Policy

Unlike recent years of fractious partisan bickering over federal tax and spending matters, Congress has without enormous fanfare laid to rest many previously contentious issues. For example, it passed a budget covering not only fiscal 2016, but fiscal 2017 as well. It suspended the debt ceiling until March 2017. It passed trade legislation and a long-term extension of transportation spending authority. It has not been a clean sweep, however, as certain issues, such as repatriation of foreign earnings and tax reform, remain on the table.

### 1. Budget

President Obama signed a two-year budget deal, covering fiscal years 2016 and 2017, on November 2, 2015. The deal raises discretionary spending caps by $50 billion in 2016 and $30 billion in 2017, which are evenly split between defense and nondefense spending. These increases were offset by changes to Medicare/Medicaid payments, defined benefit pension rules, sale of 58 billion barrels of oil from the Strategic Petroleum Reserve, improved tax compliance and numerous other miscellaneous sources. Analysts expect increased spending to boost real GDP growth in 2016 by about 0.3 percent.

### 2. Deficit

Fiscal 2015 ended with a deficit of $439 billion compared to $483 billion in fiscal year 2014. The deficit as a percentage of the four-quarter fiscal year average was 2.81 percent in fiscal year 2014 and 2.46 percent in fiscal year 2015. Since nominal GDP grew 3.10 percent from fiscal year 2014 to fiscal year 2015, the

federal debt to nominal GDP ratio fell from 74.4 percent to 73.7 percent. Revenues grew 7.5 percent and spending grew 5.2 percent.

The Congressional Budget Office's (**CBO**) most recent deficit projection for fiscal year 2016, made in August, forecasts a further slight decrease in the size of the deficit to $414 billion. However, given the budget deal and the likelihood that Congress will reenact a series of tax extenders, it is much more likely that the fiscal year 2016 budget deficit will rise. **GS** estimates the deficit will be $550 billion and **B of A** $475 billion.

Deficits will probably begin to creep up going forward and within about three years the effects of demographic trends on social security and Medicare benefits will begin to increase the deficit and the debt-to-GDP ratio. This can be seen in **Charts 10** and **11.**

**Chart 10** shows that the improvement in the size of the annual deficit ends by fiscal year 2017. Indeed, if **GS's** forecast turns out to be correct, the low mark was reached this year.

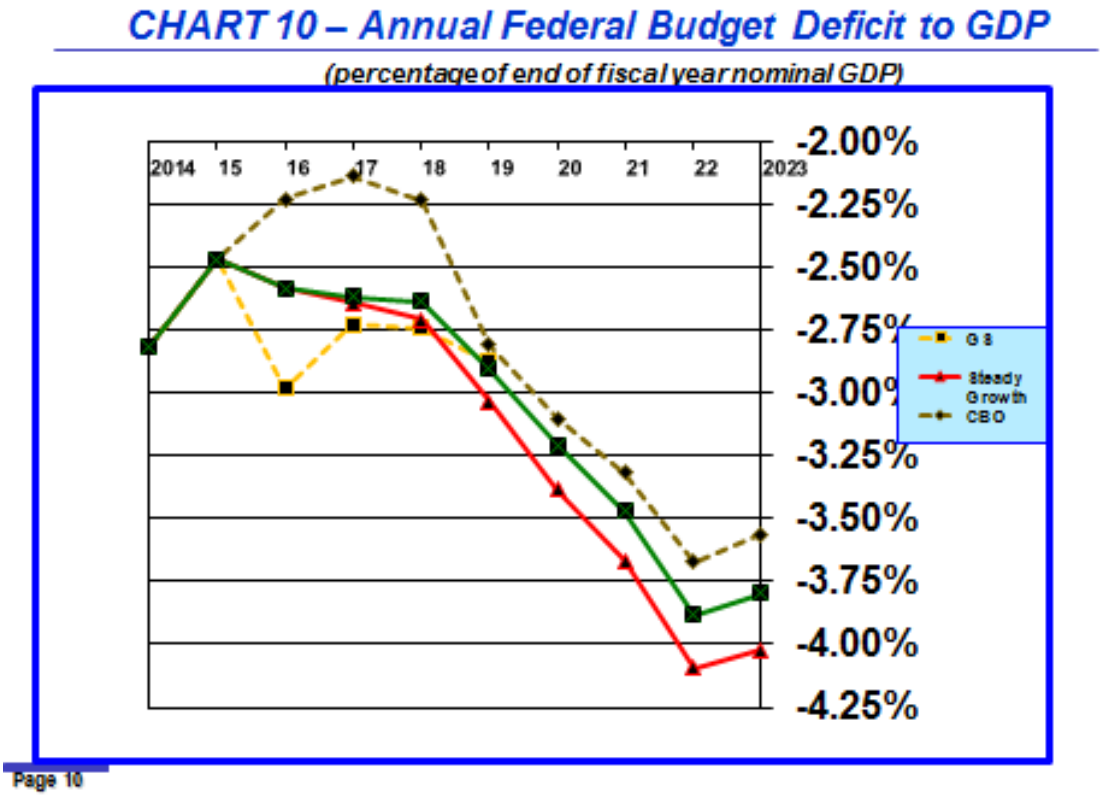
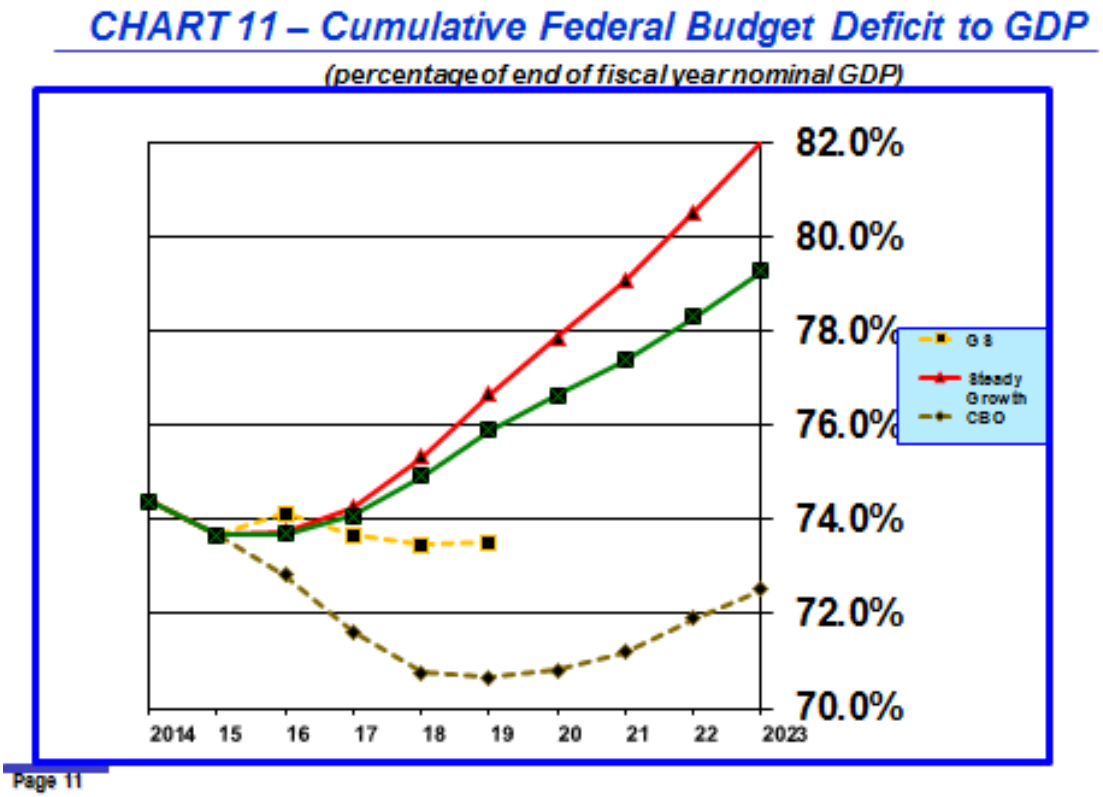



**Chart 11** shows various forecasts of the public-debt-to-nominal-GDP ratio. This ratio in my scenarios begins rising in fiscal 2016 and accelerates thereafter. **GS's** projected ratio is stable through 2019. It is lower than in my scenarios primarily because **GS** expects nominal GDP to rise faster. **CBO's** more optimistic outlook stems from its assumption of strong GDP growth.




### 3. Debt Ceiling

Congress suspended the debt ceiling until March 16, 2017. This means that this issue is off the table until well after the next president assumes office since, as we all now know, the Treasury Department can keep the government running for several months after the debt ceiling becomes binding.

### 4. Transportation Spending Authority

Both houses of Congress have passed legislation to authorize transportation spending for another six years. Differences are being worked out in a conference committee. Because authority terminated on November 20, 2015, Congress approved a short-term extension to enable the conference to complete its work. The principal issue under debate is providing a source of funding. The House version reallocates funds from a Federal Reserve capital surplus account while the Senate version decreases the dividend rate to banks on Federal Reserve stock and extends higher Fannie Mae and Freddie Mac mortgage guarantee fees. These spending sources are not particularly popular. Thus, it is entirely possible that the compromise that Congress reaches may be insufficient to guarantee full funding for six years.

### 5. Inversions and Repatriation of Foreign Earnings

Large U.S. firms with international operations have been reluctant to repatriate foreign earnings because of the large amount of taxes that would be owed. Furthermore, several large companies have engaged in a type of mergers referred to as "inversions" because such mergers involve merging a U.S.-domiciled company into a foreign country domiciled company. This enables the U.S. company to shelter a portion of its earnings from U.S. taxation. The Treasury Department is trying to dissuade U.S. firms from entering into inversion mergers by threatening to issue regulations. On November 19, 2015, Treasury issued additional "guidance," which does not have the force of law and may not even be constitutional. However, the intent is certainly to discourage such mergers by introducing significant uncertainty about the possible consequences of inversion mergers.

Inversion mergers would cease to be attractive if Congress agreed to significant corporate tax reform involving reducing the corporate tax rate. Such a reform would also encourage repatriation of foreign earnings since they would be taxed at a much lower rate. Because there are approximately $2 trillion in foreign earnings which could be repatriated, legislation to encourage repatriation would provide a "windfall" of tax revenues, which could be used to fund other spending initiatives, such as transportation.

House Speaker Ryan, Senator Schumer and President Obama have voiced support for corporate tax reform and discussions have occurred. These discussions have yet to achieve a compromise position which can be supported by both sides. Thus, corporate tax reform will have to wait until next year and possible until the next Congress.

### 6. Exim Bank

Re-chartering the export-import bank is now a virtually certainty because of support of majorities in both houses of Congress. All that remains is finding the right legislative vehicle. Tax extender legislation, which is likely to be passed just before Christmas, is a prominent possibility.

### 7. Tax Extenders

Congress will probably approve about 60 tax breaks, usually referred to as "tax extenders," just prior to the holiday recess in December. Extenders will be approved retroactively for all of calendar year 2015 and also will be approved for 2016. The cost of extenders is not likely to be offset and thus will add to the deficit which is a major reason **GS's** 2016 deficit estimate is higher than **CBO's**.

### 8. Repeal of Oil Export Ban

Republicans want to repeal the oil export ban while environmentalists oppose repeal. President Obama is not opposed but wishes to assure regulatory oversight and management. So, there is room for compromise on this issue. However, it is too controversial to pass as a standalone bill. That means it would need to be linked to another piece of legislation that has broader support. Republicans have not yet found an appropriate legislative vehicle.

### 9. Pacific Trade Treaty

Earlier this year Congress renewed the president's trade promotion authority which permits the president to negotiate a trade treaty and limits Congress to voting either to approve or not approve.

Details of the Pacific Trade Treaty were released recently which starts the clock ticking on public review. Congress could consider the treaty as soon as February 2016. But, another possibility is that political controversy causes Congress to postpone the vote on ratification until the lame duck session following the presidential election.

**APPENDIX: Outlook — 2015 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 2015 U.S. and global economic outlook and risks to the outlook were contained in the ***December 2014 Longbrake Letter*** and are included below without any changes. As events unfold during 2015, this will enable the reader to track my analytical prowess. Current assessments follow each item with the following identifiers: **"+" tracking forecast**; **"-"not tracking** forecast; **"?" too soon to know**. As events unfold during 2015, this will enable the reader to track my analytical prowess.

***As the year progresses, actual results for many economic Indicators are diverging from beginning-of-the year forecasts, as evidenced by the large amount of red ink, "not tracking," below. In addition, many of the risks have materialized. On balance, U.S. and global economic activity is a little less strong than expected and deflationary risks have increased. These developments are being reflected in tighter financial conditions and increased financial market volatility.***

1. **U.S.**

- ***2015 real GDP Y/Y*** growth projections range from 2.7% to 3.5%. The FOMC's central tendency Q4/Q4 projections range from 2.6% to 3.0%. (Q4/Q4 projections are highly dependent upon potential anomalies in Q4 data; therefore, Y/Y estimates, which average all four quarters, are more stable estimates.) Because the substantial decline in oil prices is likely to boost consumption growth more than it depresses investment growth, actual 2015 real GDP growth is likely to be at the high end of the forecast range.

  *- The FOMC has changed its Q4/Q4 GDP projection range several times during the year; based on the September projections, the FOMC now expects growth in 2015 to be 2.0% to 2.3%*

  *- Other Y/Y forecasts are also below the lower end of the original forecast range: GS = 2.4% (Q4/Q4 = 2.05%); B of A = 2.45% (Q4/Q4 = 2.1%); Bill's Steady scenario = 2.4% (Q4/Q4 = 2.1%); Bill's Strong scenario = 2.4% (Q4/Q4 = 2.1%)*

- ***Real GDP output gap*** will remain high, but will close rapidly during 2015 from about 3.4% to 2.0%. (The exact size of the output gap will be revised by CBO, probably in February 2015).

  ** CBO revised the output gap down by 1.1 percentage points in February but then raised it by 0.5 percentage points in August for a net reduction of 0.6%*

  *- Revised output gap should decline to between 2.9% and 2.8% by the end of 2015, which would be a 0.5% decline over the year; this is considerably less than the forecast 1.4% decline at the beginning of the year*

- ***Potential structural rate of real GDP growth*** has declined significantly in recent years. I expect potential growth to be about 2.0% in 2015. Long-term potential real GDP growth will edge up in coming years to between 2.0% and 2.3%.

  ** CBO reduced 2015 potential growth from 1.79% to 1.66%*

  *- Potential growth for my scenarios for 2015 is 1.54%*

  *+ Long-run potential growth for my scenarios is between 1.8% and 2.1%; it is 1.75% for GS; it is between 1.8% and 2.2% for the FMOC; and it is 2.1% for CBO; all estimates of long-run potential growth have been edging down*

- ***Productivity*** should rise during 2015 as growth improves and investment increases, but should still fall well short of the historical 2.1% average.

  *+ The four-quarter change in productivity rose from 0.0% in the fourth quarter of 2014 to 0.4% in the third quarter of 2015*

- ***Employment*** growth should slow during 2015 as full employment approaches and grow about 185,000 per month.

  *? Payroll growth has averaged 206,000 monthly over the first ten months of 2015*

- ***Employment participation*** will rise slightly during 2015 as the unemployment rate falls, labor market conditions tighten and discouraged workers find jobs. These cyclical factors will more than offset the downward pressure on the participation rate stemming from an aging population.

  *- The participation ratio has declined; it was 62.70% in December and 62.43% in October; the short fall in participation has occurred in more retirees and fewer prime-age individuals seeking employment*

- ***Unemployment rate*** should edge down to about 5.25%. A higher rate could occur if substantial numbers of discouraged workers re-enter the labor force.

  *? The unemployment rate has fallen from 5.56% in December to 5.04% in October; employment growth has been stronger than expected while labor force growth and participation have been weaker*

- ***Nominal consumer disposable income,*** measured on a Y/Y basis will rise about 3.2% (roughly 1.2% increase in hours worked; 1.8% increase in CPI inflation and 0.2% increase in the annual rate of growth in the hourly wage rate — *note: this relationship is mischaracterized because inflation does not factor directly into disposable income growth; disposable income growth is a composite of many sources of income, the largest of which is wage and salary income; growth in salary and wage income depends upon growth in total hours worked and growth in nominal hourly wages, which was 2.1% at the beginning of 2015 and forecast to rise to 2.3% by the end of 2015*).

  *- 12-month rate of change in disposable income is 3.6% through September; (total hours worked for all employees were growing at a 2.1% annual rate through October; growth in hourly nominal wages was up slightly through October to a 2.2% annual rate of increase); growth in hours worked is much stronger than forecast which has resulted in stronger than expected growth in nominal consumer disposable income*

- ***Nominal consumer spending growth*** on the Y/Y basis will grow slightly faster at approximately 3.5%, but could grew slightly faster if low oil prices persist.

  *+ 12-month rate of change is 3.5% through September*

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

  *? Saving rate averaged 4.86% over the first nine months of 2015 compared to 4.80% in 2014*

- ***Stock prices***, as measured by the S&P 500 average, should rise between 0% and 5%.

  *+ Through November 27, stock prices were up 1.5%*

- ***Manufacturing*** growth will continue to be relatively strong and the PMI index will exceed 50.

*- The ISM manufacturing index has softened since the beginning of the year but was still at a just barely expansionary level of 50.2 in September and 50.1 in October; the risk of an index value below 50 by year end is increasing*

*+ The ISM nonmanufacturing services index was a still strong 56.5 in October but was down from 59.0 in August*

- ***Business investment*** spending growth should remain relatively strong in a range of 4% to 6% as employment and consumer spending growth gather momentum; however, low oil prices will depress energy investment.

  *- Business investment rose at an annual rate of 2.6% over the first three quarters of 2015; forecasts for 2015 have been lowered to 3.1% to 3.2%*

- ***Residential housing investment*** should improve over 2014's disappointing level by 8% to 10%; residential housing starts should rise 15% to 20%.

  *+ Residential investment grew at an annual rate of 8.4% over the first three quarters of 2015; forecasts for 2015 range between 8.6% and 8.7%*

  *- Over the first ten months of 2015 total housing starts were 9.2% above and single-family housing starts were 8.3% above the 2014 level and are on a pace to grow 10% during 2015, short of the 15% to 20% forecast*

- ***Residential housing prices*** should rise about 2% to 4% in 2015, more slowly than 2014's projected 4.5% increase.

  *- According to the Federal Housing Finance Agency's home purchase price index, housing prices rose 5.07% in 2014 and 5.39% through the 12 months ending June 2015; prices are on track to rise 4.0% or more in 2015*

- ***Trade deficit*** should be slightly higher in 2015 as economic growth improves growth in imports and the rising value of the dollar depresses growth in exports. The ***dollar's value*** on a trade-weighted basis should continue to rise.

  *+ The trade deficit for goods has been stable; it was 2.89% in December and 2.90% in September*

  *+ The trade weighted value of the dollar rose 8.3% from December through October and is 12.8% higher than October 2014*

- ***Monetary policy*** — the Federal Reserve will raise the federal funds rate at its June, or possibly, September 2015 meeting. Because inflation is likely to continue to fall short of the Federal Reserve's expectations, the pace of increases in the federal funds rate is likely to be slow.

  *- The FOMC did not raise rates in either June or September; a December increase is probable*

- ***Total inflation*** measures (CPI and CPE) will fall sharply during the first half of 2015, reflecting the significant decline in oil prices. **Core PCE inflation** will be stable to slightly lower in a range of 1.3% to 1.5%, reflecting global disinflationary trends. Core PCE inflation will remain well below the FOMC's 2% objective at least through 2017.

  *+ Total CPE was up 0.2% in September compared to September 2014 and is projected to rise only to 0.7% for all of 2015*

  *+ The annual rate of change in core PCE was 1.31% in September and should be within the forecast range at the end of the year*

- The **10-year Treasury rate** is likely to fluctuate in a range between 2.0% and 3.0% in 2015. Faster than expected real GDP employment growth will push the rate toward the top end of the range; greater than expected declines in inflation and/or heightened financial instability will push the rate toward the bottom end of the range.

  *+ The 10-year Treasury rate was 2.22% on November 27; because of low rates globally and aggressive quantitative easing by the European Central Bank and the Bank of Japan; the 10-year Treasury rate is likely to remain near the lower end of the 2.0% to 3.0% range during 2015*

- ***Fiscal policy*** will have limited impact on real GDP growth during both fiscal year and calendar year 2015. The deficit as a percentage of nominal GDP will probably decline from fiscal year 2014's level of 2.75% to 2.50%. The decline could be greater if economic growth and tax revenues exceed expectations or less if Congress increases spending without offsets as it did in approving the tax extenders bill for 2014.

  *+ The 2015 fiscal year deficit was $436 billion and was 2.42% of third quarter 2015 nominal GDP*

- ***State and Local investment*** spending growth rises slightly from 0.5% in 2014 to 1.0% in 2015, which is still well below the long-term average of approximately 1.4%.

  *- State and local investment has risen at an annual rate of 2.0% over the first three quarters of 2015; forecast for all of 2015 has been revised to 1.5%*

2. **Rest of the World**

- ***Global growth*** is likely to improve to 3.7% in 2015 from 3.2% in 2014. Risks are tilted to the upside because of the substantial decline in oil prices.

  *- Global growth forecasts have been lowered to 3.1%; improvement in Europe has been more than offset by slower growth in China, Japan, the U.S. and emerging markets; risks are tilted to the downside during the remainder of 2015*

- ***European growth*** will be positive but will is likely to fall short of the consensus 1.2%.

  *- Europe's growth forecast has been raised to 1.6%*

- ***European inflation*** will continue to decline and may even turn into outright deflation. Quantitative easing, assuming it occurs, may be too late and have too limited an impact to deflect emerging deflationary expectations. Europe may well be headed to the kind of deflationary trap Japan has been in for the last 20 years.

  *+ Consumer prices in Europe are expected to rise only 0.1% during 2015*

- ***European financial markets*** may face renewed turmoil. Markets expect the ECB to begin purchasing large amounts of securities, including sovereign debt, by March. This presumes that legal hurdles and German opposition will be overcome. Assuming that quantitative easing actually occurs, its impact is likely to disappoint.

  *+ The ECB's massive bond purchase initiative has provided a stable backdrop for financial markets; however, volatility has emerged from time to time (during the spring when speculative positions, which had driven interest down to nearly zero, were unwound; in June in conjunction with the crisis in Greece, followed in August by China's growth slowdown); credit conditions have eased*

- ***European political dysfunction, populism and nationalism*** will continue to worsen gradually. Countries to watch include the U.K., Greece, Spain, Italy and Portugal.

  *+ Centrists lost the Greek election in January, however, the replacement government disintegrated but the Syriza party was returned to power in September elections; the National Front party is gaining ground in France; recent regional elections indicate that centrist parties may lose the Spanish elections scheduled for late 2015; the Conservative Party won an outright majority in the UK parliamentary elections but political fragmentation grew as the Scottish National Party won 56 seats; terrorism and the refugee crisis is exacerbating political pressures on centrist parties*

- ***U.K. growth*** is expected to slow from 3.0% in 2014 to 2.6% in 2015; however, political turmoil, should the May parliamentary elections be inconclusive, could drive growth lower.

  *+ Expected 2015 real GDP growth is expected to be 2.4%, slightly below the expected level*

- ***China's GDP growth*** will slow below 7% and gradually move toward 6% as economic reforms are implemented and the shift to a consumer-focused economy gathers momentum.

  *+ Year over year growth in the third quarter of 2015 was 6.9%; growth is headed down toward 6.5%*

- ***China's leadership*** will focus on implementing ***economic reforms*** and will overcome resistance and maintain stability.

  *+ Chinese reform policies are being implemented more slowly than expected; the anti-corruption campaign continues and has had a chilling impact on speculation in commodities; in spite of stock market turmoil, which has now abated, political stability has been maintained*

- ***Japan's*** economic policies may be successful in defeating deflation, but GDP growth will be hard pressed to achieve the expected 1.6% rate in 2015 if Abenomics' third arrow of economic reforms fails to raise the level of potential growth sufficiently to overcome the effect of negative population growth on labor force growth.

  *+ Japanese expected growth has been lowered to 0.7%; the Bank of Japan is likely to fall short of its goal to raise inflation to 2.0%expected inflation currently is 0.7% for 2015 and 1.3% for 2016*

- ***India*** should experience an improvement in real GDP growth to 6.3% in 2015.

  *+ 2015 growth is expected to equal 7.4%*

- ***Emerging market countries*** that are energy consumers will experience greater growth, as long as the U.S. does better in 2015; energy producing. countries and those heavily dependent upon commodities exports for growth will do less well.

  *+ Data indicate that slower growth in China, Japan and the U.S. is dragging down growth in emerging markets*

3. **Risks** — stated in the negative, but each risk could go in a positive direction.

   - ***U.S. potential real GDP growth*** falls short of expectations

     *+ Reductions in estimates of long-run potential GDP growth by CBO, FOMC and other analysts indicate this risk has been realized*

- ***U.S. employment growth*** is slower than expected; the ***participation rate*** is stable or declines rather than rising modestly

  *+ Participation rate has fallen slightly*

  *- Employment growth slightly above expected level through the first ten months of 2015*

- ***U.S. hourly wage rate growth for all employees*** does not rise materially over its 2014 level of 2.1%

  *+ Through October this risk is being realized — wage growth, measured as a 12-month year over year rate of change, has edged up from 2.06% to 2.16%; the employment cost index has declined from 2.25% to 1.88% over the first three quarters of 2015*

- ***U.S. unemployment rate*** falls less than expected

  *- Through October the unemployment rate has fallen more than expected*

- ***U.S. productivity*** remains low in the vicinity of 1%

  *+ Productivity over the last 12 months has been 0.4%*

- ***Real U.S. consumer income and spending*** increase less than expected

  *- Data through September indicate that consumer disposable income has risen slightly more than expected, while the increase in consumer spending is as expected*

- ***U.S. financial asset prices*** rise more than expected posing increased bubble risks

  *- Bond prices are at the low end of the expected range*

  *- Stock prices have changed little so far in 2015*

- ***Growth in U.S. residential housing investment and housing starts*** is less than expected

  *+ Housing starts are below expectations*

  *- Residential investment is on track to meet expectations*

- ***U.S. residential housing price increases*** slow more than expected

  *- First and second quarter data indicate that home prices are rising more than expected*

- ***U.S. private business investment*** does not improve as much as expected

  *+ Private business investment growth is below the lower end of the expected range*

- ***Oil price declines*** in the U.S. trigger bankruptcies and cause tight financial conditions with negative implications for economic activity and growth

  *+ Energy-related investment reduced real GDP growth during the first half of 2015 by about 0.5% but, after an initial lag consumer spending has risen as expected to offset much of this drag*

  *- There is no evidence of significant financial market disruptions stemming from the fall in oil prices; however, much higher junk bond spreads in the energy sector foreshadow troubles ahead*

- ***U.S. manufacturing growth*** slows as the value of the dollar rises and global growth slows

  *+ ISM manufacturing index remains above 50 but has softened considerably and might move below 50 by the end of the year*

- ***U.S. trade deficit*** widens and the ***value of the dollar*** rises more than expected

  *+ The value of the dollar has risen more than expected at the beginning of the year*

  *- The trade deficit has been relatively stable*

- ***U.S. monetary policy*** spawns financial market uncertainty and contributes to financial instability

  *+ Volatility has increased considerably and financial conditions are the tightest they've been in four years; Goldman Sachs estimates that tighter financial conditions, if sustained, are equivalent to an increase in the federal funds rate of 75 basis points; however, financial conditions have moderated slightly since late summer*

- ***U.S. inflation*** *falls, rather than rising, and threatens deflation*

  *+ Core PCE inflation has been slightly softer than expected and with recent further declines in commodity prices and a stronger dollar is unlikely to rise by year end*

- ***U.S. interest rates*** fall *or* rise more than expected

  *- Long-term interest rates are at the lower end of the expected range*

- ***U.S. fiscal policy*** is more restrictive than expected and the ***budget deficit*** falls more than expected

  *+ Tax receipts have been stronger than expected; the deficit was slightly lower than originally expected*

- ***U.S. state and local spending*** does not rise as fast as expected

  *- Through the first three quarters of 2015 state and local spending has risen faster than expected*

- ***Global GDP growth*** does not rise as fast as expected

  *+ The global GDP growth forecast has been reduced from 3.7% to 3.1% and the balance of risks tilts to a further slowing*

- ***Europe*** slips back into recession

  *- Growth is improving in Europe because of the decline in the value of the euro, lower commodity prices, easier financial and credit conditions, and less fiscal drag*

- ***ECB*** does not engage in quantitative easing or the quantitative easing program it decides to pursue lacks market credibility

  *- This risk did not materialize because the ECB initiated a massive quantitative easing program which is expected to continue until September 2016 and perhaps beyond*

- ***Europe*** — financial market turmoil reemerges

  *- Speculation drove interest rates in the spring on long-term bonds too low and was followed by a short but relatively violent correction; however, that turmoil was short-lived; however volatility reemerged in August because of concerns about the impact of slowing Chinese growth*

- ***Europe*** — political instability and social unrest rises more than expected threatening survival of the Eurozone and the European Union

  *+ Political fragmentation is building slowly but does not yet threaten the survival of the Eurozone and the European Union; the Greek threat has been contained, but could explode again in the next few months as the Greek economy remains mired in recession; terrorism and the refugee crisis is contributing to nascent political instability*

- ***Acute political turmoil*** engulfs the **U.K.**

  *- The Conservative Party won an outright parliamentary majority and political stability is the order of the day for the time being; however, political fragmentation is increasing slowly*

- ***Chinese*** leaders have difficulty implementing ***economic reforms***

  *+ Implementation of reforms is proceeding more slowly than expected; at least one of the reforms involving opening up participation in the stock market led to a rapid escalation in prices followed by a crash in prices and extreme volatility*

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

  *+ Growth has slowed to 6.9% and is expected to fall to 6.0% in 2016*

- ***Japan*** — markets lose faith in Abenomics

  *? This risk has not materialized; however, both real growth and inflation have been considerably less than expected, Prime Minister Abe's approval ratings have dropped below 50%*

- Severe and, of course, unexpected ***natural disasters*** occur, which negatively impact global growth

  *- This risk has not materialized*

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