



The Longbrake Letter*

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January, 2013

I. Fiscal Cliff Averted with Limited Damage, But Rounds Two, Three and Four Are Coming Soon; Slow Growth in U.S. and Global Economies (Exception — Europe, Which Is in Recession) Continues

As the U.S. economy enters 2013, data reports reflect a continuation of the very gradual recovery process that has been underway since the end of the Great Recession in June 2009. After an interruption during the first half of the year because of tax increases, the most likely trajectory for the U.S. economy during the remainder of 2013 is more of the same — weak growth near potential but with significant downside risks posed by U.S. fiscal policy and Europe's economic recession.

Global economic prospects appear likely to be relatively stable to slightly stronger during 2013 and are not likely independently to pose either upside or downside risks to the U.S. economy; however, worse than anticipated performance of the U.S. and European economies would trigger negative reinforcing feedbacks from global economies.

Most acknowledge that President Obama won round one of the fiscal cliff battle with Republicans, who were forced to permit legislation to pass on January 1, 2013, to raise tax rates for individuals earning more than \$400,000 and families earning more than \$450,000. Some limitations on deductions for higher earners were also included. All told, the legislation will raise about \$620 billion in additional tax revenue over the next 10 years,

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but that is less than half of the \$1.6 billion in additional revenues that President Obama originally was seeking. Most of the difference was due to the omission of nearly all of Obama's proposals to limit deductions and the increase in the income thresholds for higher tax rates from \$200,000/\$250,000 to \$400,000/\$450,000.

Bank of America/Merrill Lynch (B of A) estimates that fiscal tightening will amount to \$285 billion in calendar year 2013 or about 1.75% of GDP. Goldman Sachs (GS) places the impact at about 1.6%. The negative impact would rise to about 2.0% according to B of A, if the mandatory spending cuts imposed by the sequester go into effect on March 1, 2013.

That's the bad news. The good news is that it could have been a lot worse if we had gone over the fiscal cliff or if President Obama had succeeded in his objective of raising \$1.6 billion in new revenue, although in fairness his original proposal also included spending cuts. There is other good news. Further tax policy legislation during 2013, assuming the sequester is repealed and spending cuts are spread over several years, is not likely to increase fiscal drag materially during 2013. And, because of GDP growth rate calculus methodology, fiscal drag from this year will not carry over into 2014, which means that the economy's growth rate is likely to be higher in 2014.

Importantly, however, the legislation did not deal with spending issues or entitlement reforms. The spending sequester was merely delayed for two months. These are contentious political issues which promise more fireworks in the next few weeks.

Thus, much uncertainty remains because *rounds two, three and four* of the fiscal policy battle are still ahead. These include dealing with the temporary deferral of mandatory spending reductions, which expire at the end of February; raising the federal debt ceiling, which was reached on December 31, 2012, and will become binding by late February or early March; and congressional budget authorization of spending — the temporary continuing resolution expires on March 27, 2013.

So, while the fiscal cliff in terms of tax rates was averted, significant fiscal policy issues remain. Political posturing is already underway. President Obama has said emphatically that he will not negotiate the debt ceiling extension. And, Speaker Boehner has said just as emphatically that there will be no further revenue increases. It is reasonable to expect that all

three issues will be resolved ultimately, but the hardline positions of the two political parties promise a nasty fight and calendar deadlines could well pass without timely resolution.

As I said in the *December Longbrake Letter*, *what needs to happen, but is not happening, is a broad public debate that goes beyond a singular focus on deficit cutting and extends to the kind of government fiscal policy needed in the long run to galvanize investment and increase productivity.*

Potential structural real GDP growth has plummeted in recent years, largely due to a decline in productivity. While most economists expect productivity to be near the historical average in coming years, there is strong reason to expect productivity to fall short of expectations. This is important because slower productivity growth means slower growth in potential GDP. And, *slower growth in potential GDP means it will be harder and take longer to reduce the burden of federal debt.*

Better focused government fiscal policies, which target investment in infrastructure, research and education, have the potential to lift productivity significantly over time. Such policies generally have much higher fiscal multipliers than the kinds of transfer payments that have predominantly comprised fiscal policy in recent years. But such policies also take longer to produce results.

My point is that government fiscal policy should not be focused solely on increasing consumption spending and reducing unemployment. It also needs to focus on lifting the structural potential real rate of GDP growth. Effective fiscal policy would have the dual benefits of raising the rate of growth, thus reducing the debt burden more rapidly, but very importantly it would raise the standard of living for Americans to a greater extent.

Certainly, revisions in entitlement programs in terms of benefits, utilization incentives, ability to pay and administrative efficiency are necessary to contain the potential for runaway fiscal deficits. But, policies which successfully increase the structural potential real rate of GDP growth will go a long ways toward providing a greater ability to finance social programs. However, *the course we appear to be on is one of slower growth over the longer run, which will make it harder to finance social programs*

and to deal with the problem of growing income inequality.

Indeed, there is an even more disheartening interpretation of the current state of our political policy fabric. In a January 12, 2013 *New York Times* news analysis, Annie Lowrey quotes **Benjamin Friedman**, a Harvard University economist: “*We could be stuck in a trap We could be stuck in a perverse equilibrium in which our absence of growth is delivering political paralysis, and the political paralysis preserves the absence of growth.*”¹

In this month’s letter, I begin in Section II by examining the potential structural rate of real GDP growth, which is a function of labor supply growth and productivity. I explain why productivity, and therefore potential real GDP growth, is likely to be lower than most expect. Section III includes a summary of the 2013 economic outlook for the U.S. and discusses risks (residential housing, business investment, employment and consumer spending, Europe, and China) to the outlook. This is followed by a discussion of U.S. employment trends and personal income and consumption in Sections IV and V. Monetary and fiscal policies are the subject matter of Sections VI and VII. This month’s letter concludes with a brief update on Europe, China and Japan. Beginning in this month’s letter I have added an appendix which summarizes highlights for key issues for 2013 and beyond. As the year unfolds, the reader, as well as myself, will be able to track how actual events track or diverge from what I outlined in the *December Longbrake Letter*.

II. Potential Structural GDP Real Rate of Growth

In the *December Longbrake Letter* I discussed in detail the determinants of the long-run potential structural GDP real rate of growth. I include in this month’s letter a reprise based on updates to my data analysis. I also include additional commentary on prospects for *productivity* over the next several years.

Potential structural GDP real growth depends on growth in the *labor supply* and *productivity* (the efficiency of the utilization of labor and

¹Annie Lowrey. “The Low Politics of Low Growth,” *New York Times*, January 12, 2013.

capital).

My principal conclusion is that the potential structural GDP real rate of growth is likely to be lower over the next several years than most expect. To the extent that occurs, there are several implications — all negative. For example, to name a few of the more important ones, employment will recover more slowly, inflation will be lower for longer, wage gains will be limited, interest rates will remain at the zero bound for longer, and the budget deficit will remain higher and the public-debt-to-GDP ratio will be a more intractable problem.

1. Labor Supply Growth

Labor supply growth depends in the first order on population growth. However, labor supply growth is affected by the portion of the population eligible to participate in the labor force. Many who are eligible to work choose not to do so. The percentage of those eligible to work, who either are employed or are seeking employment, is referred to as the *labor force participation rate*. The labor force participation rate can change over time because of changes in the demographic composition of the population, such as the aging of the baby boomers; changes in cultural patterns, such as greater participation of women or delayed entry because of increases in the number of people pursuing higher education; or ease of getting a job — the discouraged worker effect.

Labor supply also depends on the length of the workweek as well as the number of workers. Thus, the best way of measuring labor supply growth is in terms of aggregate hours worked. Over a long period of time the length of the workweek has declined. However, in recent years it appears to have stabilized at about 34.5 hours.

In December's letter I measured labor supply as the product of the number of production and nonsupervisory employees and average weekly hours. In this month's letter I have replaced that measure with a more inclusive measure of total hours worked by nonfarm workers which is reported on a quarterly basis by the Bureau of Labor Statistics (BLS). Importantly, this measure of labor supply is consistent with the measure of nonfarm worker productivity.

2. Productivity Growth

Productivity growth involves gains in output relative to labor and capital inputs. Measurement of productivity, however, is not easy. Estimates can either be derived by calculating the difference between total real GDP growth and labor supply growth or by estimating and summing the contributions of each factor of production — labor and capital. The bottom up methodology consists of three components: (1) growth in capital intensity, (2) labor demographic composition and quality, and (3) total factor productivity. Total factor productivity is not a separate factor of production. However, it is a construct embraced by economists and reported by BLS that captures the interaction between the labor and capital factors and incorporates productivity effects that are otherwise not directly measurable.

Although there are various measures of productivity, nonfarm productivity is generally considered to be the most representative measure. However, it is not a comprehensive measure as it does not include government workers who historically have had a lower rate of productivity improvement.

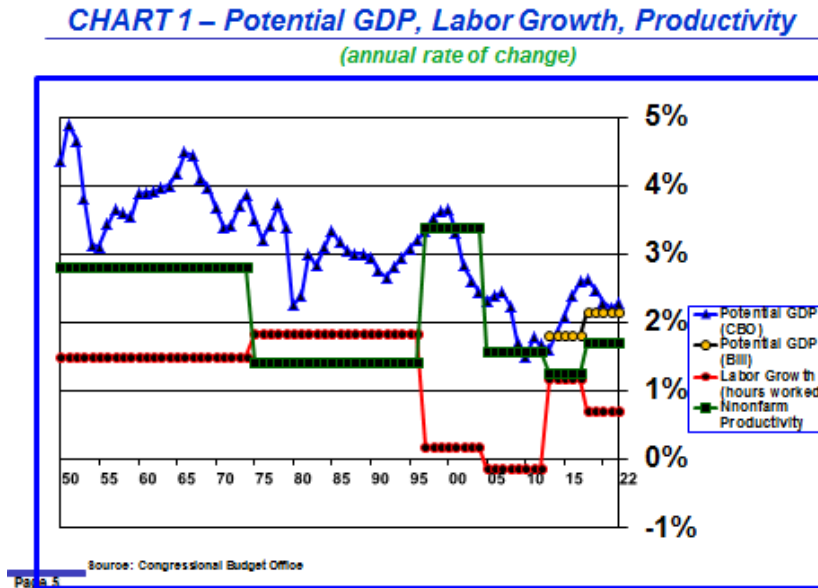
Real GDP growth averaged 3.16% annually from 1947-2012; growth in aggregate nonfarm worker hours averaged 1.17% from 1947-2012 and growth in nonfarm labor productivity averaged 2.21% from 1947-2012. The product of the two nonfarm growth rates — hours worked and productivity — equals the rate of growth of nonfarm GDP, which is 3.40%. Because this rate is higher than the 3.16% growth rate for total GDP, this means that sectors other than the nonfarm sector grew more slowly.

If the 1.17% growth rate in hours worked for nonfarm workers was the same for all other workers, then the implied rate of productivity for the economy as a whole would be 1.97%. (This figure is derived by dividing one plus 3.40% by one plus 1.17% and subtracting one.)

Even though nonfarm worker productivity is not a comprehensive measure, it is useful to focus on this measure for two reasons. First, BLS has provided comprehensive data for this measure for 65 years. Second, nonfarm workers currently account for about 93.5% of total workers (ratio of nonfarm workers from the BLS's payroll report to total workers from the BLS's household employment survey).²

²The ratio of nonfarm workers to total workers from the household survey has risen over the last 65 years. It was about 85% in 1965 and 94% in 2012 and averaged 92% over

Chart 1 shows potential GDP, labor supply (nonfarm hours worked),



and nonfarm productivity growth rates from 1950 to 2012 with projections to 2022. Potential GDP growth rates are calculated by the Congressional Budget Office (CBO). Nonfarm labor supply and productivity rates from 1950 to 2012 are actual values — these growth rates have been averaged over longer time periods (1950-73, 1974-1997, 1998-2004, 2005-2012) to diminish short-term variations caused by the business cycle and other factors.³

the period 1965 to 2012. One could use this ratio to derive the productivity of workers other than nonfarm workers. This results in a productivity growth rate close to zero. While possible, this doesn't seem particularly plausible which suggests to me that flaws in data measurement and the small size of the non-nonfarm labor component result in statistical noise rather than elucidation.

³**Chart 1** is a revision of **Chart 3** in the *December Longbrake Letter*. The revised **Chart 1** substitutes the BLS's nonfarm hours worked data series for the measure included in the December chart, which was based upon production and nonsupervisory employees.

3. Measurement of Labor Supply Growth

Negative nonfarm labor supply growth from 2005 to 2012 reflects the collapse in the labor market following the Great Recession. Labor supply growth is projected to rebound from 2013 to 2022, but the growth rates during this period will be boosted above the long-term trend level during the initial part of this period by a declining unemployment rate and reentry of discouraged workers into the workforce. Adjusting for these temporary favorable effects, I estimate the trend labor supply growth rate will average about 0.71% annually between 2018 and 2022. I do not expect the average length of the workweek to change between 2012 and 2022. Population should continue to grow about 1.0% annually, but labor supply will grow more slowly because of a persistent decline in the participation rate, primarily due to the aging of the baby boom generation.

It should be noted that CBO expects stable trend labor supply growth (omits cyclical factors) to average a somewhat lower 0.50% annually over the 2013-22 period.

4. Measurement of Nonfarm Productivity Growth

Although nonfarm productivity growth averaged 2.21% between 1947 and 2012, there have been extended periods of higher and lower rates. For example, productivity growth averaged 2.81% from 1950 to 1973, fell to 1.43% from 1974 to 1997, rebounded to 3.39% from 1998 to 2004 and then receded to 1.59% from 2005 to 2012.

Bursts in technological innovation tend to raise productivity growth for a period of time until innovation benefits are distributed throughout the economy. A surge in manufacturing productivity and massive investment in public infrastructure, particularly the interstate highway system, in the 1950's and the 1960's were principal factors in the extended period of high productivity from 1950 to the middle of 1973. However, by the middle of 1973 these forces were abating. In addition, the entry of less skilled baby boomers into the labor force contributed to depressing productivity growth until the middle of 1997. Then, productivity surged once again from the middle of 1997 to the middle of 2004, driven by the dot.com and fiber optic booms and related strong investment spending.

Unfortunately, the investment boom of the late 1990's and early 2000's included many unproductive projects which were financed by an explosion of debt financing. A shake out became inevitable. But, as we know all too well, the shake out did not end debt leveraging. Excessive debt financing shifted into home mortgages and a variety of exotic derivative financial instruments as Wall Street turned into a giant trading casino. Investments in housing and financial engineering proved to have limited productivity potential and the average annual productivity growth rate after mid-2004 fell to 1.59%, little better than the period from 1974 to 1997.

My analysis indicates that productivity will rise about 1.27% annually between 2013 and 2017 and then improves to between 1.70% and 1.88% annually between 2018 and 2022.⁴

5. Potential Structural Real GDP Growth Rate

Potential structural GDP growth has been slowing over time primarily due decreases in the growth in the labor supply, as measured by hours worked. My analysis suggests that potential structural real GDP growth will stagnate around 1.81% between 2013 and 2017, which is a little higher than the 1.68% potential GDP growth rate CBO estimates prevailed from 2009 to 2012. Then the trend potential GDP growth rate rises to 2.17% to 2.32% from 2018 to 2022 as nonfarm productivity improves from 1.27% to a trend growth rate between 1.70% and 1.88%.

However, CBO's estimate of potential structural real GDP growth is more optimistic. It projects that potential structural real growth will average 2.11% between 2013 and 2017 and 2.39% between 2018 and 2022. The difference between my view and CBO's is mostly due to CBO's expectation that productivity growth will average 2.10% annually between 2013 and 2022; whereas, I expect productivity growth will average only 1.48% from 2013 through 2022, but will rise to a trend rate of 1.70% to 1.88% by 2018 to 2022. Except for the dot.com, fiber optic technology investment boom

⁴My statistical analysis indicates that the trend nonfarm productivity growth rate depends upon the size of the GDP output gap. According to CBO data, the GDP output gap averaged 2.0% between 1985 and the third quarter of 2012. Based upon my statistical analysis, a 2.0% output gap would result in a 1.70% nonfarm productivity rate. However, if the trend GDP output gap is 1.0%, the expected trend nonfarm production growth rate would rise to 1.88%.

of the late 1990's and early 2000's (1998-2004), productivity growth has averaged only 1.39% since 1974. And if productivity growth from 1998-2004 is included in the average, annual growth rises to 1.81%, still well below CBO's assumption of 2.10% for 2013 to 2022. Although CBO's estimate of future productivity growth is assembled using a bottom-up component analysis methodology, it is not intuitively obvious why productivity should be as high as 2.10% for the next 10 years when it has averaged 0.29% less than that over the last 38 years.

6. Goldman Sach's Productivity and Potential GDP Growth Analysis

Goldman Sachs (GS) recently released a report "Productivity: Down But Not Out".⁵ In this report GS estimates expected productivity growth rates using two different methodologies. Both methodologies are different from the one I have described above.

First, GS uses a growth accounting approach to project the trend in productivity over the next five years. This involves summing three components: capital services, composition/quality of labor input, and total factor productivity. GS forecasts each component separately using regression analysis. This method results in a trend productivity growth rate estimate of 2.1%.

Second, GS conducts "... a cross-country panel study of the determinants of productivity growth, including proxies for capital intensity, demographics, education and technological innovation." Data came from 33 developed countries and covered 1971 to the present. The estimate of productivity growth was derived using regression analysis. This method produced an estimate of the trend productivity growth rate of 1.9%.

GS commented in the report that "... financial crises weigh on medium term productivity growth in affected countries by at least two tenths of a percentage point per year." This is similar to my finding that each one percentage point increase in the GDP output gap depresses productivity growth by 18 basis points. But, because the output gap currently is very large, my methodology results in a greater negative impact on productivity,

⁵Goldman Sachs. "Productivity, Down But Not Out", Issue No: 13/01, January 4, 2013.

as long as the output gap remains high, than GS's analysis.

GS also asserts that its estimate of trend productivity ranging from 1.9% to 2.1% implies a trend rate of growth in potential GDP of 2.5% over the next five years. This is much more optimistic than CBO's estimate of 2.11% and my estimate of 1.79% over the next five years. Hopefully, actual GDP growth over the next five years will exceed 2.5% annually because that is what will be required to shrink the large GDP output gap quickly.

7. Comparisons of Long-Run Productivity Forecasts

Table 1 shows trend productivity growth rate estimates.

Table 1
Comparison of Long-Run Trend Productivity Growth Forecasts

Forecaster	Period	Productivity Estimate
Actual	1950-1973	2.8%
	1974-1997	1.4%
	1998-2004	3.4%
	2005-2012	1.6%
Projected		
CBO (1/2012)	2012-2017	2.1%
President's Economic Report (2/2012)	2011-2022	2.3%
Kahn & Rich (12/2012)	2013-2017	1.8%
Professional Forecasters (Q1 2012)	2012-2021	1.85%
GS (growth method) (1/2013)	2012-2017	2.1%
GS (cross-country method) (1/2013)	2012-2016	1.9%
Bill (1/2013)	2013-2017	1.3%
Bill (1/2013)	2018-2022	1.7% to 1.9%

There are several takeaways from **Table 1**. First, the range of estimates in expected trend productivity growth over the long run is quite tight, 1.7% to 2.3%, and most estimates are below the 65-year average rate of 2.2%. Second, my estimate for the next five years is considerably below other

estimates. This is because I expect the large GDP output gap to depress trend productivity growth potential. None of the other estimates allow for this possibility. Although GS mentions the possibility that the “financial crisis” will depress productivity for a while, it does not account for this possibility in its estimates. Once the GDP output gap shrinks, my trend productivity growth estimate for 2018-2022 is consistent with most of the other estimates.

8. Consequences of Low Potential Structural GDP Growth

There is evidence that is supportive of my less optimistic view of potential productivity growth and therefore of potential GDP growth insofar as private and public investment spending has been weak in recent years. When the economy is operating substantially below potential it requires fewer workers and less capital investment, but it also discourages forward-looking investment and thus slows growth in the supply of productive capital. My statistical analysis indicates that productivity is decreased by 18 basis points for each percentage point in the GDP output gap. Because the output gap, according to CBO, was 5.68% in the third quarter of 2012, the productivity growth rate was 1.02% below the level that would have prevailed if there had been no output gap. Needless to say, this is a very substantial difference. *Since productivity improvements are cumulative over time, shortfalls in productivity improvements when there is substantial economic slack are unlikely to ever to be made up fully when the economy strengthens.*

9. Raising Potential Structural GDP Growth — Labor Supply

There is limited flexibility from a policy standpoint to increase the growth rate in the labor supply over the longer term. One exception would be to rationalize *immigration policy* to permit entry of greater numbers of immigrants, particularly those with higher level skills. This issue is likely to be on the legislative agenda during 2013. However, immigration policy is a charged issue. Even though he had bipartisan support, President Bush was unsuccessful in getting Congress to pass immigration reform legislation. President Obama did not make immigration reform a priority issue during his first term. However, it will be a priority issue in 2013.

Immigration policy is an emotionally-charged issue. For one thing many are threatened by a more liberal policy because of fears that it will adversely impact America's culture and values. Xenophobia is a timeless obstacle. Nonetheless, the historical record of America's flexible immigration policy is clear — it has fostered rapid growth. Diversity has been a powerful economic accelerant, not an inhibitor.

Resistance to liberalizing immigration tends to escalate during periods of high unemployment because people fear that immigrants will accept jobs for lower wages and displace existing workers. While this undoubtedly occurs a job at a time, research unambiguously shows that over time greater immigration results in faster job growth in the aggregate. Also, there is no evidence that wages are depressed over the long run by immigration.

10. Raising Potential Structural GDP Growth — Productivity

While there is not a great deal policymakers can do to increase the rate of growth in the labor supply outside of liberalizing immigration, there are plenty of opportunities to develop policies and programs which will boost the potential rate of productivity growth over time. Unfortunately, the current policy focus on the fiscal deficit and the political fight over how to reduce it has diverted policymakers from examining and debating ways to raise productivity growth. In fact, *there is real risk that the intense focus on cutting spending could result in lowering potential productivity growth in the future.*

Productivity improvement occurs when a unit of labor can produce more output. It can occur through an increase in labor skills, which involves providing training and educational programs. It can occur by developing technology that leverages human capabilities. This requires investment in research and development. It can occur through improving infrastructure efficiency, such as reducing transportation time and costs or by improving the quality and timeliness of information. It can occur through developing technologies that use energy more efficiently.

Many argue that the private sector will perform these tasks and that the government sector is not essential and, worse, might serve as an inhibitor rather than a catalyst. There are elements of truth and falsehood in this belief. None would disagree that that massive public goods projects, such

as highway building, require government involvement. It is well understood that government projects, such as space travel, could not initially be done by the private sector but that many extremely valuable innovations resulted which benefited the private sector. On the other hand, it is also understood that incentives to innovate and to take risks are much stronger in the private sector.

There are times when the return on public sector investment will exceed return on private sector investment. Such times are generally periods of enormous economic slack like we are currently experiencing. In such times there simply isn't strong enough private demand to make some kinds of private sector investment attractive. So, it doesn't get done. It is at such times that the government has a legitimate role in pursuing investment initiatives that extend beyond its traditional role of investing in public infrastructure. And, we should not lose sight of the importance of government accelerating public infrastructure investment when the GDP output gap is large as it is now.

There was some increase in infrastructure spending in the 2009 stimulus package, but it was quite limited in scope. Policymakers at the time didn't fully understand the causes of the Great Recession and hoped that the quick fix of providing transfer payments through lower taxes and greater spending would revive aggregate demand quickly. Of course we now know that what seemed like a massive amount of stimulus at the time proved to be inadequate. But, an opportunity to invest in public infrastructure, which takes much longer to bear fruit, was missed.

President Obama did attempt to remedy this oversight when he proposed the American Jobs Act in September 2011. Congress never acted on most of the substantive investment initiatives embedded in this proposal and, in any event, the proposal itself was exceedingly modest.

III. U.S. Real GDP Growth

Real GDP growth continues to be very disappointing. Over the long run slower population growth and reduced productivity gains have combined to reduce the inflation-adjusted growth rate in potential aggregate demand.

But in the short run weak GDP growth and the large gap between actual and potential GDP is a direct consequence of a very weak labor market. While employment is growing, the number of new jobs being created each month is only marginally greater than the number of new entrants to the labor force. There were 4.0 million fewer people employed in December than five years ago at the beginning of the Great Recession in December 2007. And, wage and income growth has been anemic.

Monetary and fiscal stimulus has been unable to ignite sustained recovery. Over the last two years fiscal stimulus has reversed and is now a negative force, which will be even more negative in 2013.

1. 2012 Q3 GDP — Final Estimate

As can be seen in **Table 2**, growth was 3.10% in the “Final Estimate” compared to 2.66% in the “Preliminary Estimate”. The 44 basis points increase was good news and included improvements of 13 basis points in consumer spending, 8 basis points in government spending and 24 basis points in net exports. The improvement in net exports is noteworthy as it is composed of a small increase in exports and a decrease in imports. Corroborating the improvement from trade is the negative trade balance, peaked in April and has declined modestly since that time. However, this conclusion may be premature since the trade deficit surged in November.

Real growth in “Final Sales”, which deducts changes in inventory accumulation from GDP, is a better measure of underlying demand than real GDP growth. Inventory accumulation tends to be procyclical, decreasing more rapidly than other components of GDP during a recession and rising more rapidly during recovery. “Final Sales” grew 2.37% in the third quarter compared to 1.71% in the second quarter and 2.35% in the first quarter. While this is a welcome improvement from the second quarter, it was not strong enough to make a material dent in the large GDP output gap which declined from 6.01% in the second quarter to 5.68% in the third quarter.

Inventory accumulation fell a smidgen in the “Final” estimate, but contributed an unusually large amount to third quarter GDP growth. Unless consumer spending picks up significantly in the fourth quarter, right-sizing of inventories in the fourth quarter could result in a negative contribution to fourth quarter GDP growth.

Table 2
2012 Third Quarter GDP Growth

	Advance Estimate	Prelim. Estimate	Final Est.	Second Quarter	First Quarter
Personal Consumption	1.42%	0.99%	1.12%	1.06%	1.72%
Private Investment					
Nonresidential	-.13%	-.23%	-.19%	.36%	.74%
Residential	.33%	.32%	.31%	.19%	.43%
Inventories	-.12%	.77%	.73%	-.46%	-.39%
Net Exports	-.18%	.14%	.38%	.23%	.06%
Government	.71%	.67%	.75%	-.14%	-.60%
Total	2.03%	2.66%	3.10%	1.25%	1.96%
Final Sales	2.15%	1.89%	2.37%	1.71%	2.35%

Why isn't personal consumption stronger? After all it accounts for 71% of GDP and if potential GDP growth is 2.5%, it should contribute 1.78% to GDP growth. Indeed, GDP growth needs to exceed this amount to bring down unemployment and close the output gap. But, over the first three quarters of 2012, personal consumption is contributed only 1.30% to the 2.10% increase in GDP. What is going on is that not enough new jobs are being created and, worse, disposable income growth has weakened since the first quarter.

Last year's good news story — business investment — has turned into this year's bad news story. Nonresidential investment is growing more slowly which results in a negative contribution to GDP growth.

Also, the 0.75% contribution of government to GDP in the third quarter is an anomaly that will not repeat because most of this spending can be traced to one-time defense outlays.

2. GDP Forecast for 2012 Q4

Forecasts for fourth quarter GDP growth have improved over the last month. For example, GS currently expects Q4 GDP growth of 1.7% versus 1.2% a month ago. The data reports have been a little better than expected and

it appears that Hurricane Sandy will have a less negative effect, which also means that the first quarter rebound from Hurricane Sandy will also be smaller.

Negatives relative to the third quarter include a lower contribution from government spending, slowing inventory accumulation and possibly a reversal of the third quarter's favorable trade contribution. Weaker business investment spending is also possible because of ongoing uncertainties related to fiscal policy issues. Residential investment should improve moderately.

Of course, the most important contributor to GDP growth is consumer spending. Fiscal cliff uncertainties do not appear to have had any noticeable effect on consumer spending. Hurricane Sandy's impact appears to have been largely temporary as October's decline in personal consumption outlays was more than offset by November's increase. Also, the pace of consumer disposable income growth has picked by over the last two months, although this "improvement" could be revised away in subsequent reports. Year-to-date annualized growth in disposable income through November is 2.57% which is little different from the 2.46% growth rate in 2011. At the moment it looks like consumer spending growth will match the slow rates of the second and third quarters, which generally would be consistent with GS's 1.7% growth estimate.

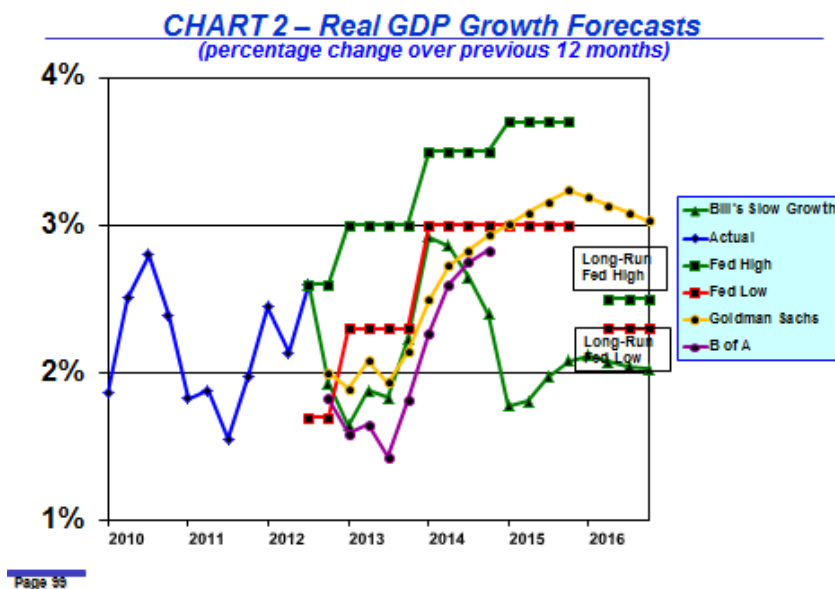
3. GDP Forecasts for 2013

Most forecasters expect growth in 2013 to begin slowly and then pick up in the second half. A slow start to 2013 is virtually assured by restrictive fiscal policy including the Health Care Act tax rate increases, the tax rate increases on those earning over \$400,000/\$450,000 and the end of the 2% payroll tax cut. The elimination of the payroll tax cut will have the most immediate effect and predominately impacts lower and middle income households which have limited flexibility to dip into savings to maintain expenditure levels.

B of A's forecast of 1.8% GDP growth in 2013 has not changed over the last month. GS's slightly more optimistic 2.1% forecast is also unchanged. The Fed, which has consistently been too optimistic and probably still is, tempered its 2013 GDP forecast in December. Its revised projection for 2013 has a range of 2.3% to 3.0% growth. Bill's "Slow Growth" forecast

projects 2013 GDP growth of 2.2%.

Chart 2 shows GDP forecasts/projections for 2013 through 2016.



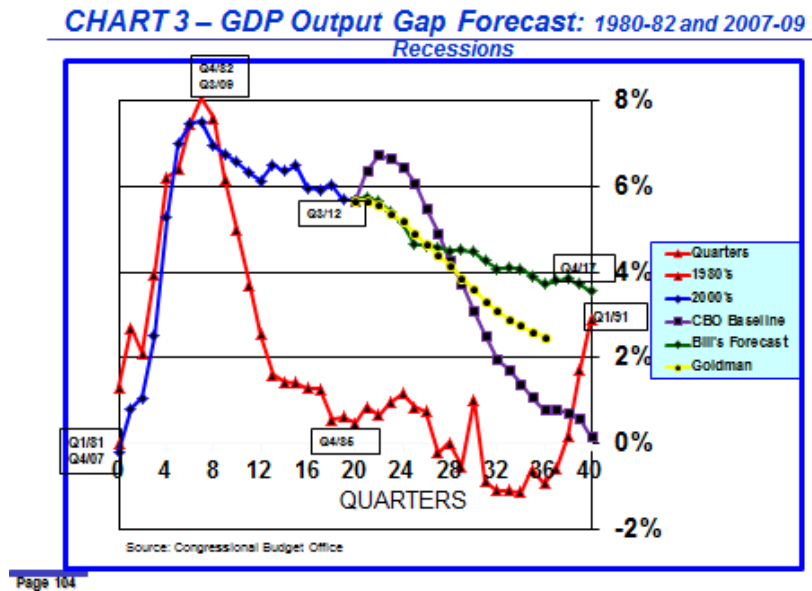
With the exception of “Bill’s Slow Growth” forecast, others expect GDP growth to accelerate in 2014 and 2015. Goldman Sachs and B of A track the lower end of the Fed’s projected range. Following a relatively consistent pattern, the Fed remains on the optimistic end of the spectrum. Bill’s less optimistic outlook depends to a large extent on sharply lower productivity growth than others expect.

4. GDP Output Gap

Because of greater fiscal policy contraction during the first half of 2013 no improvement in the already sizeable GDP output gap is likely. The CBO’s baseline forecast, which was prepared in January 2012 and will be updated shortly, indicates that the GDP gap will rise during 2013. That forecast seems likely to improve when CBO releases its updated forecast in late

January.

Forecasts for the GDP output gap are shown in **Chart 3**, which com-



pares the output gaps during and after the recession of 1981-82 and the Great Recession of 2007-09. The output gaps peaked during the seventh quarter of each recession — 8.1% in the 1981-82 recession and 7.5% in the Great Recession. Nineteen quarters have passed since the start of the Great Recession and the output gap is still 5.7% compared to 0.6% nineteen quarters following the onset of the 1981-82 recession.

The purple line (black squares) in **Chart 3** shows the *Congressional Budget Office's "baseline" scenario* which CBO prepared in January 2012 and probably paints too onerous an outlook for 2013. The output gap in CBO's forecast does not fully close until the end of 2017.

Using CBO's estimates of potential GDP and GS's GDP forecasts results in a slow but steady decline in the output gap (yellow line, black circles). By the end of 2016, GS expects the output gap to be a still large 2.5% compared to CBO's estimate of 0.8%.

My scenario (*Bill's Forecast* the green line — black diamonds) shows an even more gradual decline in the GDP output gap over the next several years. Again, as I explained above, this more pessimistic projection depends importantly on my expectation for much slower productivity growth over the next several years. In my scenario the output gap closes only to 3.7% by the end of 2016 compared to 2.5% for GS. However, when I assume a faster rate of employment growth (*Bill's Strong Growth* scenario — not shown in **Chart 3**), the GDP output gap falls to 3.0% by the end of 2016.⁶

5. Risks to the Outlook

Risks to the 2013 forecasts are numerous.

Following the year-end resolution of the fiscal cliff — specifically locking in tax rates, a general sense of optimism has developed in financial markets. Slow GDP growth during the first half of 2013 is expected and has already been discounted. Optimism is focused on expected increases in growth as the negative impacts of fiscal policy abate. Increased growth will come from a steady increase in residential construction and home prices, a resumption of business investment growth, steady improvements in unemployment and consumer spending, emergence of Europe from recession, and somewhat stronger growth in China and the rest of Asia. When the collective impacts of all of these are considered it is not difficult to envision a 3% rate of growth in GDP or better by the end of 2013, which would be consistent with the Fed's expected 3.0% to 3.6% GDP growth range for 2014.

When optimism is relatively high, as it is currently, the risks of disappointment are also relatively high.

Residential Housing. For now *optimism about residential housing appears well-grounded*. Inventories have tightened and large amounts of investor money are pouring into the home rental market which will assure inventories tighten further. This will contribute to rising prices.

⁶I calculate estimates for both potential GDP and actual GDP which differ from those calculated by CBO. Thus, my estimate of the output gap is based upon my estimate of potential GDP and not on CBO's estimate. For comparison purposes, my estimates for potential GDP versus those calculated by CBO are: \$15.6 versus \$15.7 trillion in 2016, \$15.9 versus \$16.1 trillion in 2017, and \$17.7 versus \$18.2 trillion in 2022. Thus, over the next ten years I expect potential GDP to grow 2.6% less in aggregate or 0.26% less annually.

Rising prices once underway tend to be persistent and have the further benefit of raising consumer optimism, which typically translates into increased consumer spending. But, rising prices, to the extent they stem mostly from investor demand rather than individuals will be self-limiting because return on investment will decline as prices rise. Also, the Consumer Financial Protection Bureau is in the process of issuing mortgage regulations required by the Dodd-Frank Act. These regulations are likely to reinforce the tighter mortgage underwriting standards that have evolved in recent years. The risk is that as the year progresses the recovery in the housing market, while relatively strong, will lose momentum.

Business Investment. As fiscal policy uncertainty abates *business investment spending should accelerate*. However, there is a high probability that mandatory federal spending cuts will occur, at least for a while, beginning on March 1. Mandatory spending reductions will cut defense spending at an annual rate of 9% and much of this would fall on defense investment spending. Most believe that Congress will not allow the mandatory spending cuts to continue for very long. But, the hardline positions of both parties on spending cuts and revenue increases raise the probability of an extended impasse. This would not be good for business investment spending.

Employment and Consumer Spending. *Improvements in employment and spending will depend upon improvements in housing, business investment and exports.* What we know for sure is that the elimination of the 2% payroll tax cut will depress consumer disposable income. The key will be the extent to which this translates into reduced consumer spending. If consumers dip into savings, the impact will be moderated to a certain extent. The extension of unemployment benefits for another year will also serve to offset a portion of the impact. As the year progresses the impact of the payroll tax cut elimination will abate and momentum in housing, business investment and exports will help boost employment, income and spending and contribute to a modest favorable feedback loop. The risk is that many things could go wrong or momentum could be less than is currently anticipated.

Europe. *Optimism about Europe's ability to emerge from recession in the second half of 2013 has pretty much become the consensus view.* Were this to occur it would help boost U.S. manufacturing and exports. Europe's recession is a home-grown affair based upon

its response to banking and sovereign debt crises. Europe's recession is not feeding off of global problems. Optimism about Europe's ability to emerge from recession is based on two considerations. First, slowly improving global growth will be positive for European exports. Second, there is a presumption that the banking and sovereign debt crises are slowly being resolved. The first reason seems to be relatively sound. The second reason is not sound. Abatement of turmoil in financial markets is not an indicator that the underlying problems have been resolved. Provision of unlimited amounts of liquidity, which is what the principal remedy has been, can treat the symptoms but cannot cure the disease. The disease is deeply rooted in balance of payments mismatches, differences in competitiveness and the absence of effective economic and political governance mechanisms. Can Europe emerge from recession when these fundamental problems remain unresolved? Perhaps, but a return to normal growth seems to be a real stretch of the imagination. The European financial system remains deeply dysfunctional and like the Japanese financial system of the 1990's will not be in a position anytime soon to facilitate the kind of credit creation essential to economic growth. Stay tuned — Europe remains a large downside risk that is significantly underappreciated.

China. *Optimism about China's soft landing appears to be sound.* There appears to be little reason to doubt official projections of a small increase in the growth rate during 2013. Enormous challenges remain ahead but there appears to be time for the new leadership to formulate and implement reform policies. Their ability to do this successfully will have a significant impact on the health of China's economy but this risk is not likely to unfold during 2013. If there is a risk that occurs in 2013 it would be the reemergence of inflationary pressures that would prompt more restrictive policy measures. Housing in recent years has involved speculative elements. Policy had some impact in dampening speculation during 2012 but prices are now beginning to edge up again. Also, the inventory correction cycle seems to have run its course. So, no dramatic developments appear likely during 2013. However, over the longer run, the necessary transformation to a consumer-based economy will be challenging and fraught with risk.

In summary, there is much to be optimistic about. However, one should not lose sight of the significant problems and imbalances that still permeate the U.S. and global economies. Progress is occurring slowly. *However, economies still remain fragile and subject to the vicissitudes of policy errors and unexpected shocks.*

IV. Employment

December's employment report conveyed a story of a labor market that is healing slowly but is still far from healthy. It wasn't bad news, but it wasn't great news either.

1. Payroll and Household Reports

Payrolls grew 155,000 in December. October and November were revised upwards by a combined 14,000. Continuing a pattern that has prevailed since the end of the Great Recession, government jobs decreased by 13,000. However, the end of this trend may be at hand. Moody's expects employment in state and local governments to increase 244,000 during 2013.

Monthly payroll growth averaged 153,000 during 2012, exactly the same monthly average as in 2011. However, both 2011 and 2012 average monthly employment are likely to be revised up when the annual payroll employment benchmarking is reported along with the January 2013 payroll report. A monthly growth rate of 153,000 is marginally above the 121,000 jobs that need to be added each month to absorb new entrants into the labor force.⁷

This explains the modest decline in the unemployment rate from 8.26% in January to 7.85% in December.

Adjustments to seasonal factors eliminated some the month-to-month volatility in the *household employment survey*. The monthly average gain during 2012 was 201,000 compared to 153,000 in the payroll survey. Because the payroll survey covers fewer jobs than the household survey and because the payroll survey is likely to be adjusted upwards, the difference in the two sets of numbers for 2013 is not material.

Growth rates in the household and payroll surveys generally track each other fairly closely over time. While the household survey is never revised except for seasonal factors, the payroll survey is benchmarked annually to

⁷The population eligible for employment has grown about 207,000 monthly since the end of the Great Recession. The employment to population ratio measures the percentage of those eligible to work who are actually working. This ratio has averaged about .5851 since the end of the Great Recession and was .5865 in December. This implies that about 121,000 people eligible to work join the labor force each month.

adjust for the entry and exit of small establishments. During periods of economic expansion benchmarking usually adds jobs to the payroll survey. The next benchmarking of payroll data will occur in January 2013 and will update payroll data from March 2011 through March 2012. Based on preliminary data through March 2012, the current benchmark revision estimate would raise the total number of jobs by 386,000 or an increase of about 32,000 per month. This would raise the monthly payroll job growth from 153,000 to 185,000 which is closer to, but still less than the 201,000 average in the household survey. However, because payroll jobs currently cover only 93.5% as many jobs as the household survey, adjusting for this would increase monthly payroll jobs to 198,000.

Payroll employment is still 4.0 million less currently than it was in January 2008. This coupled with sluggish wage growth has restricted growth in consumer spending power. When this is understood it is not surprising that both nominal and real GDP growth have been extremely weak.

2. Growth in Wages

If the labor market really is tightening, wage rates should begin to rise and that development would threaten subsequent increases in inflation. However, increases in both hourly and weekly wage rates are stuck at a very low level.

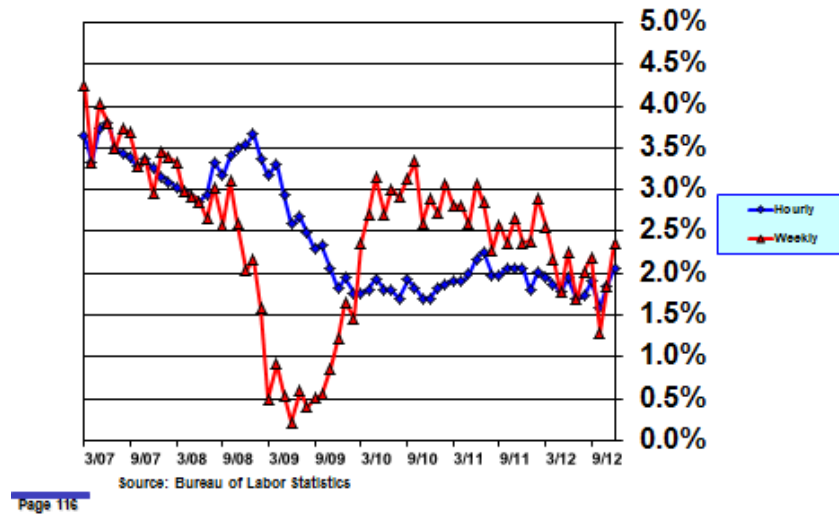
Last month **Chart 4** showed that wage growth appeared to be slowing. However, revised data now indicates that wage growth remains in the tight range around 2.0%, which has prevailed for the last three years.

As long as the unemployment rate remains unusually high, labor will have very little bargaining power and this is likely to limit increases in hourly wages for the foreseeable future.

More troublesome, however, is the slowing rate of growth in weekly wages. The workweek peaked at 34.6 hours in February and has ranged between 34.3 and 34.5 since then. Growth in take home pay has slowed from about 2.5% in 2011 to 2.0% currently.

Real hourly and weekly wages are not increasing, which means that the standard of living for wage earners is not improving. This is not the stuff of a robust labor market.

CHART 4 – Hourly and Weekly Wages
(annual rate of change)



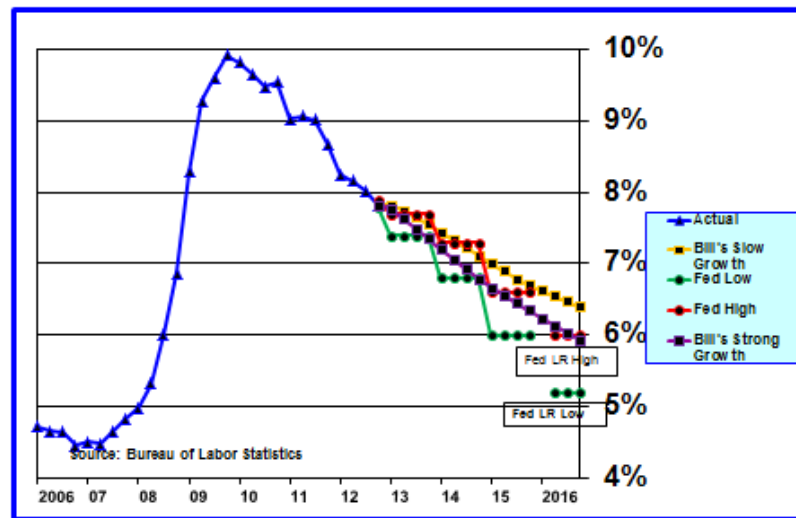
3. Unemployment Rate

Because the Federal Open Market Committee (FOMC) has now linked monetary policy explicitly to the unemployment rate, it will be important to track this data point and various forecasts of when the unemployment rate crosses below 6.5%, which is the FOMC's threshold for maintaining the federal funds rate near zero.

According to the BLS, the number of unemployed workers increased 164,000 in December. Although BLS reported the unemployment rate as unchanged at 7.8%, the rate to three decimals actually increased from 7.753% to 7.849%. Over the last 12 months unemployment has decreased 843,000 and the unemployment rate has decreased from 8.48% to 7.85%. If this rate of decline continues unchanged, the 6.5% threshold would be reached in early 2015. This is consistent with the FOMC's projections for the unemployment rate, which reaches 6.5% sometime during 2015 (See **Chart 5**).

Chart 5 shows the FOMC's high (red line, black circles) and low (green

CHART 5 – Unemployment Rate
(quarterly average)



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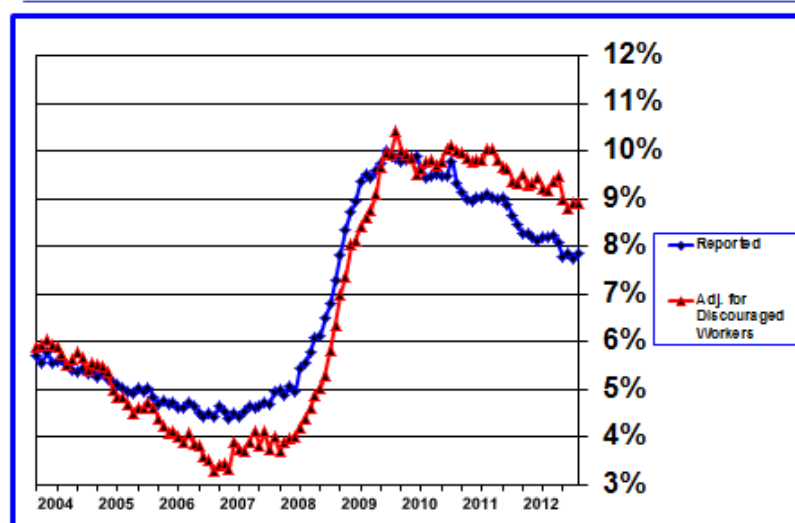
line, black circles) unemployment rate projections for 2013, 2014 and 2015. The FOMC’s long-run noninflationary rate of unemployment (structural unemployment rate), achieved sometime after 2015, falls between 5.2% and 6.0% (shown on the right hand side of **Chart 5**.)

I have included unemployment rate forecasts for both “Bill’s Slow Growth” (yellow line, black squares) and “Bill’s Strong Growth” (purple line, black squares) scenarios. During 2013 “Bill’s Slow Growth” unemployment rate projection tracks the upper end of the FOMC’s range and “Bill’s Strong Growth” unemployment rate tracks the lower end of the FOMC’s range. “Bill’s Strong Growth” unemployment rate forecast projects reaching the 6.5% threshold in mid-2015, which is consistent with the FOMC’s prior date-driven guidance and its projection range for 2015. However, in “Bill’s Slow Growth” scenario, the unemployment rate does not fall below the 6.5% threshold until mid-2016.

4. Discouraged Workers and Labor Force Participation

There is reason to expect the rate of improvement in the unemployment rate to slow as the economy and the labor market strengthen. As is shown in **Chart 6**, over the business cycle there is a systematic pattern in labor force

CHART 6 – Reported Unemployment Rate & Adjusted for Discouraged Workers



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participation. When times are good some marginal workers join the labor force and when times are difficult some marginal workers drop out.

In December 2012, there were approximately 1.7 million discouraged workers who were not counted as unemployed. If they had been counted, the unemployment rate would have been 8.92% rather than 7.85%. A recent Federal Reserve Bank of San Francisco Economic Letter suggests that as many as 2.1 million discouraged workers could re-enter the labor force as the labor market strengthens.⁸

As the labor market strengthens discouraged workers will re-enter the labor force and the rate of improvement in the unemployment rate will slow.

⁸Mary Daly, Early Elias, Bart Hobijn, and Oscar Jorda. "Will the Jobless Rate Drop Take a Break?", FRBSF Economic Letter 2012-37, December 17, 2012.

To some extent this effect is probably factored into the FOMC projections, but my sense is that the full extent of the potential discouraged worker effect is probably not factored in. If this is the case, then there is a good chance that the unemployment rate will not reach the 6.5% threshold until sometime during 2016, as suggested by “Bill’s Slow Growth” unemployment rate forecast.

V. Consumer Income and Spending

1. 2012 Personal Income, Disposable Income and Spending

Consumer personal income and disposable income data are reported on a monthly basis but are revised several times over subsequent months. Thus, one can never be sure whether the story recently released data tell will be the same story several months hence. *Revisions in November were substantial and positive. October revisions*, reported in last month’s letter, *were substantial and negative*.

Data for 2012, shown in **Table 3**, indicate that disposable income growth accelerated from 2.46% in 2011 to an annual rate of 4.05% over the first eleven months of 2012. The rate of growth in personal income also rose in 2012 but to a lesser extent — 3.64% in 2011 and 4.19% in the first eleven months of 2012.

However, the annualized rate of growth in disposable income over the last eight months has been 2.57%. The difference between the eleven-month growth rate of 4.05% and the more recent eight-month growth rate of 2.57% stems from a one-time boost in reported income during the first quarter for bonus and deferred income. This adjustment conveyed the impression that income growth was improving; however, it is now clear that the underlying relatively weak trend is still in place and that there has been very little real improvement in the rate of income growth.

The saving rate has declined farther so far in 2012, but may be in the process of stabilizing at a somewhat lower level. The saving rate will probably continue to edge down, perhaps fitfully, over the next few years. In fact, the saving rate should decline during the first quarter of 2013 because of the effects of eliminating the 2% payroll tax cut.

Table 3
Change in 2011 and 2012 Personal Income and Its Disposition
(in billions of dollars)

	Nominal 2011*	Pct. Change	Nominal 2012 Jan.- Nov.**	Annual Pct. Jan.-Nov. Change	Annual Pct. Apr.-Nov. Change
Personal Income	\$458.1	3.64%	\$500.4	4.19%	2.64%
Compensation	269.2	3.34%	290.3	3.80%	1.44%
Proprietors' Inc.	21.0	1.83%	53.6	5.00%	4.16%
Rental Income	70.7	19.50%	49.3	12.41%	10.40%
Asset Income	25.9	1.56%	65.8	4.25%	4.44%
Government Transfers	4.3	0.19%	73.5	3.45%	2.78%
Less: <i>Personal Taxes</i>	-112.7	5.05%	-101.2	4.71%	2.36%
Disposable Income	278.5	2.46%	431.3	4.05%	2.57%
Less: <i>Consumption</i>	435.8	4.04%	378.1	3.76%	2.67%
Personal Saving	-157.4	-28.63%	44.4	12.35%	-0.03%
Personal Saving Rate	4.24%		3.66%		3.67%

*Measured from December 2010 to December 2011

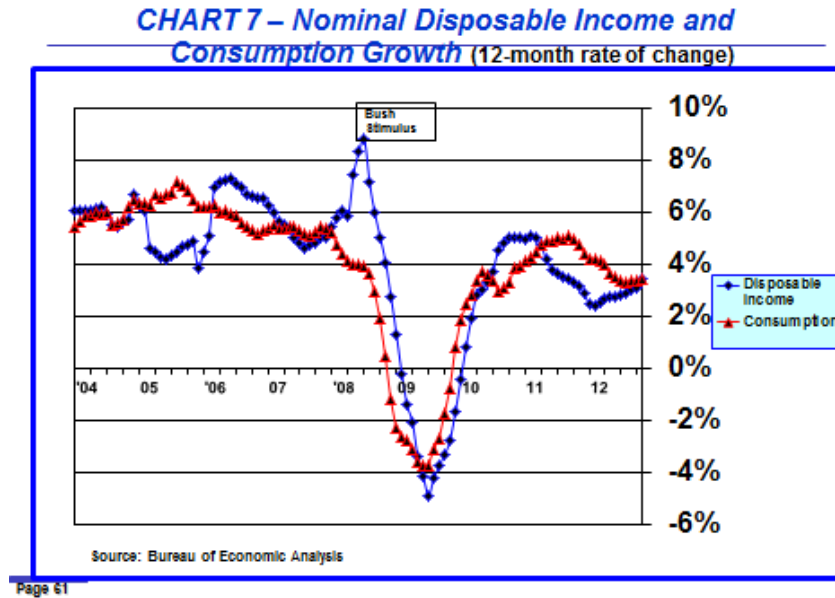
**Measured from December 2011 to November 2012

All-in-all, income growth is extremely weak and will not improve in any meaningful way until employment growth accelerates to a greater extent.

2. Disposable Income and Spending

Chart 7 shows the nominal rate of growth in disposable income and consumer spending from 2006 to the present. The annual rate of growth in disposable income began slowing in late 2010 and declined from its recent high of 5.1% in February 2011 to 2.4% in February 2012, but has risen since then to 3.5% in November 2012.

As mentioned above, the rebound in the growth rate since February appears to be due primarily to a one-time boost in bonus and deferred income during the first quarter. It will take several more months for this one-time pop in income to work its way through the 12-month moving average of income growth. This means that the percentage growth rate will probably



rise above 3.5%. My model suggests it will peak at 3.6% in January 2013. While I generally prefer to look at 12-month rates of change, this is one of those times when this method of analysis may convey a false sense of an improving trend.

Growth in consumer spending peaked later than income growth at 5.1% in September 2011, but then declined and reached 3.3% in August 2012. Since then consumption growth has edged up to 3.5% in November, matching the growth rate in disposable income in that month.

3. Outlook — Effect of Increases in Tax Rates

Over the next few months consumer disposable income growth will slow sharply because of increases in federal taxes. This trend is not in doubt. However, there is less certainty about how higher taxes will affect consumer spending since consumers have the choice to try to maintain spending by dipping into savings or simply to maintain savings by cutting spending. The result is likely to lie somewhere in the middle, but the question is where. The

extent of any pullback in consumer spending will affect real GDP growth and improvement in labor market conditions.

Increases in federal personal taxes during 2013 will amount to approximately \$200 billion or about 1.66% of nominal consumer disposable income. The increases include \$126 billion in payroll taxes, which predominately impact middle and lower-income households; \$50 billion in income taxes from tax rate increases for those earning more than \$400,000/\$450,000 annually; and \$24 billion from higher taxes on dividends and capital gains mandated by the Health Care Act, which predominately affect wealthier households.

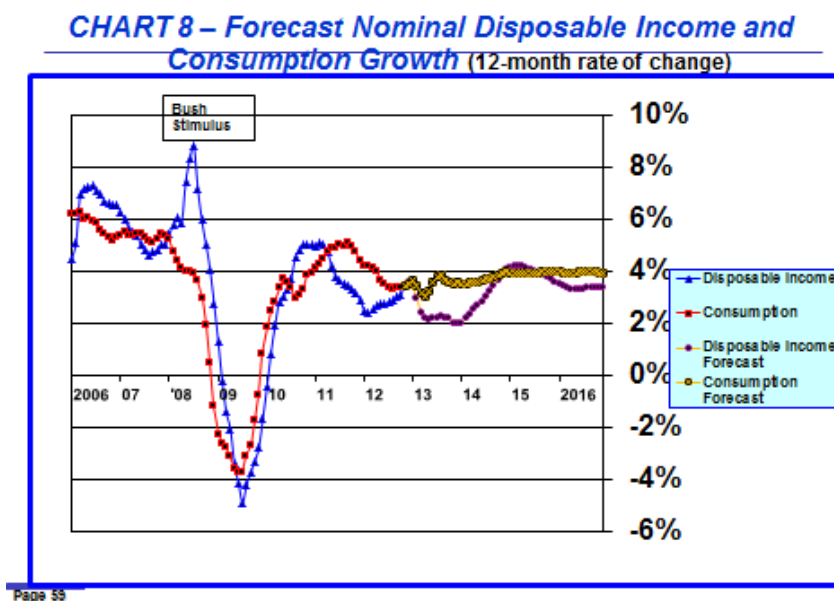
If all of the disposable income shortfall is made up by dipping into savings, the saving rate would drop to 2.00% in 2013 from 3.66% year-to-date in 2012. If nothing else changed, nominal spending growth would continue at the 2012 level of 3.8% and real spending growth would be 1.9%, if the PCE deflator remained constant. This involves a lot of assumptions, but the point of this exercise to provide a basis for understanding B of A's and GS's estimates of tax increases on real consumer spending in 2013.

B of A expects real consumer spending to grow at annual rates of 0.5% in the first quarter, 1.5% in the second quarter and 1.9% during the second half of 2013. GS expects real consumer spending to grow at an annual rate of 1.0% in the first half of 2013 and 1.5% in the second half. Although not a precise interpolation, the B of A and GS quarterly numbers translate into approximately a 1.4% real growth rate in consumer spending in 2013 or about a 25% decrease from 2012.

Without attempting to show the mathematical details, this translates roughly into 60% of the decrease in disposable income resulting in a decrease of \$120 billion in consumer spending with the 40% remainder made up through a reduction in the saving rate to 3.0% in 2013.

This looks to me like a very significant impact, particularly in the first half of 2013. B of A expects real GDP growth to average just 1.0% during the first half of 2013. Others are more optimistic. *Market participants are optimistic about the recent trend in slightly stronger data and don't appear to have grasped the significant negative impact that the tax increases, particularly the payroll tax increase, are likely to have on consumer spending and GDP growth during the first half of 2013.*

Chart 8 shows my forecast for growth in nominal consumer disposable



income and consumption through 2016. While the forecast picks up a little of the impact of the tax increase shock, it does not pick up all of the short-run effects. The trends shown in **Chart 8** are more reflective of long-run phenomena, particularly depressed productivity growth and low inflation.

Generally, consumption grows a little faster than income which is consistent with a slow decline in the personal saving rate. The nominal disposable income growth rate declines in 2013 and early 2014, reflecting tax increases that take effect at the beginning of 2013. Once these tax increases have been absorbed, the nominal income growth rate slowly accelerates beginning in mid-2014 to 4% by the end of 2016. This is consistent with gradual improvement in the household sector as unemployment falls.

All-in-all the story **Chart 8** tells is not a strong one. It is a story that is consistent with low labor supply growth, paltry productivity gains, low inflation and meager increases in wages and salaries.

VI. Monetary Policy

There are two sets of monetary policy issues market participants are pondering. The first has to do with *quantitative easing* (large scale asset purchases) and how long and in what amounts the FOMC will continue to purchase U.S. Treasury and Government Sponsored Enterprise guaranteed mortgage backed securities. The second has to do with how long the FOMC will maintain a “*zero-interest-rate policy*” (ZIRP) for the federal funds rate.

Both of these monetary policy elements are designed to lower longer-term interest rates and stimulate aggregate demand in an economy still struggling to establish sustainable growth momentum. Quantitative easing works to stimulate the economy by changing the supply/demand dynamics of longer-term securities and reducing their yields. ZIRP has the same impact but works through market participant expectations by extending the timeframe for future increases in interest rates.

Easy monetary policy is especially important at the moment because of the negative impact on the economy of higher taxes. As the impact of the tax increases abates later on in 2013 and, if the economy regains forward momentum, the need for an aggressively easy monetary policy should diminish.

1. Uncertainty Diminishes Monetary Policy Effectiveness

Although the Federal Reserve can impact financial market dynamics and economic decision making directly through interest rates by changing the federal funds rate and buying long-term securities to depress yields, much of the effectiveness of monetary policy occurs through changing expectations about the future course of interest rates and the future strength of economic activity.

Unfortunately, uncertainty about the future course of interest rates and economic activity can severely dilute the intended impact of current monetary policy actions on expectations. This is why the FOMC, under Chairman Bernanke’s guidance, has striven to increase the clarity of monetary policy through a variety of enhancements to its communications. These en-

hancements have included publishing economic projections for the key policy variables of the unemployment rate, inflation, real GDP growth and the federal funds rate; press conferences following release of updated projections; periodic interviews, speeches and op ed articles; and more explicit guidance in the FOMC meeting policy statement.

Research by Michael D. Bauer, an economist at the Federal Reserve Bank of San Francisco, indicates that “. . . *uncertainty about the future path of the Fed’s policy rate*” has fallen substantially.⁹ Specifically, Bauer finds that the Fed’s unconventional policy actions have “. . . *lowered the public’s expectations for the path of the federal funds rate and reduced uncertainty surrounding these expectations.*”

As the following discussion indicates, while the FOMC has made substantial strides in reducing market uncertainty about the future course of monetary policy, the FOMC’s development of unconventional policy tools is still a work in progress.

2. Quantitative Easing — Large Scale Asset Purchases

When the minutes of the December FOMC meeting were released it became clear that a vigorous debate is underway among Committee members about how long the Fed should continue to buy \$85 billion monthly in securities. It is clear that quantitative easing is likely to end well before the first increase in the federal funds rate takes place. But, it is not clear what the FOMC’s guidelines are likely to be for determining how and when to scale back and eventually end purchases of securities.

FOMC members are clearly uneasy about the Fed’s growing balance sheet and about the potential impacts of large scale asset purchases on the functioning and stability of financial markets over the longer run and about the complexities of shrinking the Fed’s balance sheet when the time comes to do that.

Unlike the FOMC’s explicit guidance on ZIRP, considerable uncertainty exists about the timing and pathway for exiting its large scale asset purchase policy. This issue is likely to be an ongoing matter of market uncertainty

⁹Michael D. Bauer. “Monetary Policy and Interest Rate Uncertainty”, FRBSF Economic Letter #2012-38, December 24, 2012.

and FOMC policy debates. And, perhaps more explicit FOMC guidance will be provided at a future meeting.

One possible guideline might be real GDP growth relative to potential growth. If there is clear evidence that the output gap is closing, this could serve as a guide for scaling back and eventually ending large scale asset purchases.

However, the record to date does not offer much hope. The FOMC's real GDP projections have been consistently and substantially overoptimistic. For example, in November 2010, the FOMC's mid-point estimate for 2012 GDP growth was 4.05%; with one quarter to go, it looks like 2012 real GDP growth will be 2.0%. Similarly, the FOMC's mid-point estimate for 2013 GDP growth was 4.15% in February 2011. This estimate was revised to 2.65% in December 2012. And, even with that reduction the FOMC's 2013 projection range of 2.3% to 3.0% is above that of many other forecasters. The FOMC's current real GDP growth forecast range for 2013 is 3.0% to 3.5% compared to 2.8% for B of A and 2.9% for GS.

Thus, most market forecasts lead to a conclusion that the GDP output gap will close very slowly and quantitative easing will continue for an extended period of time. However, the Fed's own projections imply an earlier phasing down and cessation of quantitative easing.

This optimistic bias on the part of FOMC members stands in the way of reducing market uncertainty. And, there may be little that can be done about it. For one thing the FOMC is cognizant of the power of its projections to influence markets. This creates a natural tilt toward optimism because of fear that more pessimistic projections of real GDP growth would spur the kind of decision making that would result in a worse outcome. Or, FOMC members might have strong faith that their monetary policy actions would improve real GDP growth.

As a consequence of this uncertainty, the market's response to release of the December FOMC minutes was to price in a slightly earlier phasing out of quantitative easing. This resulted in boosting longer-term asset yields, probably not what the FOMC really wanted to happen.

3. Zero-Interest-Rate Policy — FOMC Guidelines for Raising the Federal Funds Rate

In December the FOMC adopted explicit inflation and unemployment rate guidelines for ending its “zero-interest-rate policy”. *“In particular, the Committee decided to keep the target range for the federal funds rate at 0 to 1/4 percent and currently anticipates that this exceptionally low range for the federal funds rate will be appropriate **at least as long as the unemployment rate remains above 6-1/2 percent, inflation between one and two years ahead is projected to be no more than a half percentage point above the Committee’s 2 percent longer-run goal, and longer-term inflation expectations continue to be well anchored.**”* (The bolded language, which replaced the previous time-based language, set the unemployment rate guideline at 6.5% and the inflation guideline at 2.5%.)

Needless to say this event-based guidance leaves open to interpretation the approximate date when the FOMC is likely to begin raising the federal funds rate. But guidance can be derived from the FOMC’s own projections for the unemployment rate and inflation and from forecasts developed by others.

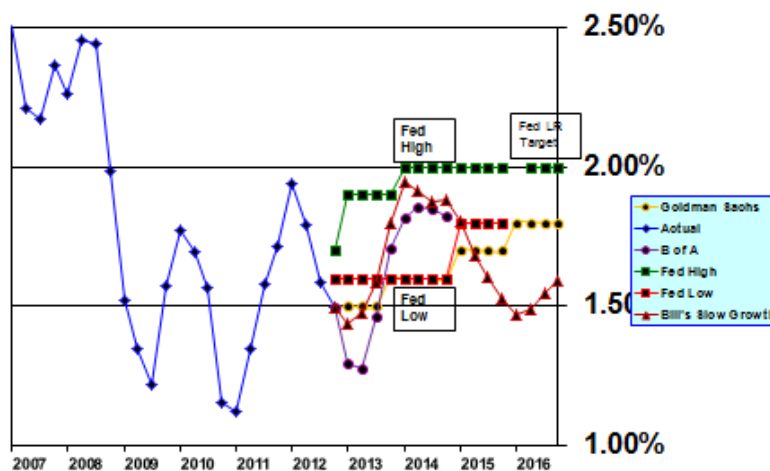
Inflation Guideline. FOMC projections for both the total and core measures of PCE inflation for 2013, 2014 and 2015 remain below its long-term target of 2.0% and are substantially below the ZIRP guideline of 2.5%.

Chart 9 shows the FOMC’s core PCE inflation projection range. Also shown are my core PCE inflation forecast and those prepared by B of A and GS.

My statistical model does not incorporate the impact of expectations. But it does incorporate the impact of both a linear and nonlinear term for the employment gap (CBO’s structural unemployment rate minus my estimate of the unemployment rate). The nonlinear term is highly significant statistically and has the greatest impact when the employment gap is large. This captures the fact that inflation adjustments are sticky in the downward direction and prevents the forecast inflation rate from falling to extraordinarily low levels during periods of substantial labor market slack. As a consequence, my core PCE forecast (red line, black triangles) now tracks B of A’s forecast for 2013 and 2014. However, after that my forecast decelerates from about 1.8% in 2014 to 1.6% in 2015 and 2016. This modest decline

CHART 9 – Core PCE Inflation Forecasts

(percentage change over previous 12 months)



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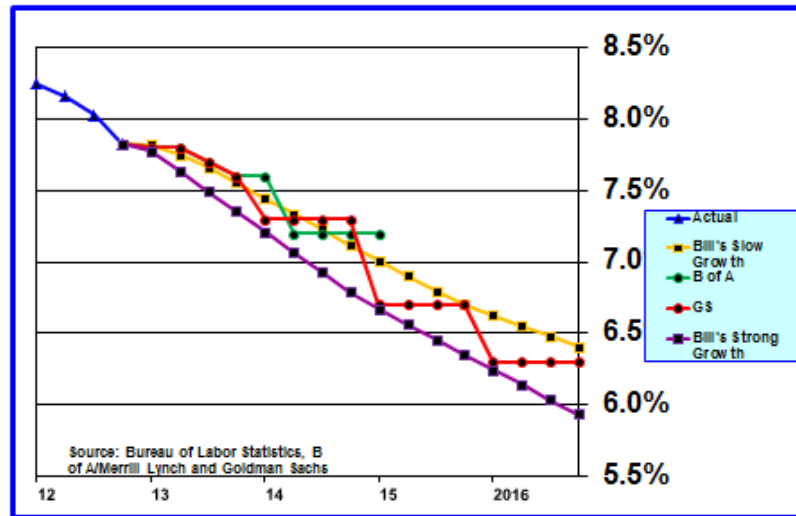
results from the ongoing slow recovery in the labor market. GS's forecast rises to only 1.8% in 2016.

What is important is that none of these forecasts, including the FOMC's projections, results in PCE inflation rising above 2.0% for the next five years.

Unemployment Rate Guideline. Chart 5 in Section IV above showed the FOMC's high and low projections for the unemployment rate. The unemployment rate does not fall below 6.5% until sometime during 2015. However, given the FOMC's optimistic real GDP growth forecasting record and given the substantial amount of discouraged workers who could reenter the labor market as the labor market strengthens it is reasonable to infer that the FOMC unemployment rate projections could be optimistic. If that turns out to be the case, then ZIRP is likely to remain in place for longer than mid-2015, which is the market's current expectation for the timing of the first federal funds rate increase.

Chart 10 shows that the unemployment rate does not reach 6.5% in "Bill's Slow Growth" forecast until mid-2016. GS's forecast does not penetrate 6.5% until early 2016. Much stronger employment growth, as shown

CHART 10 – Unemployment Rate
(quarterly average)



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in “Bill’s Strong Growth” forecast, would result in the unemployment rate falling below 6.5% in mid-2015.

4. FOMC’s Policy Reaction Function — Taylor Rule — Historical View

Congress has tasked the Federal Reserve with maximizing employment while minimizing inflation. This is known as the dual mandate. A few years ago economist John Taylor captured the dual mandate in a policy reaction function defined as:

$$FF = FF^* + inf. + a \times (inf. - inf. target) - b \times (unemp. rate - structural unemp. rate)$$

where FF is the nominal federal funds rate; FF* is the real inflation neutral federal funds rate; and “a” is the FOMC’s response to inflation and “b” is its response to the unemployment gap. If inflation is above the target, the reaction function indicates that the FOMC will raise the federal funds

rate. And, if the unemployment rate is above the structural unemployment rate, the FOMC will lower the federal funds rate.

Knowing the reaction function and knowing what the current federal funds rate should be are not the same thing. Each of the parameters in the reaction function needs to be defined.

Inflation Rate. The measure of inflation, as the FOMC said in its December statement, is the inflation rate one to two years ahead. This is the PCE (personal consumption expenditures) inflation rate. The problem is in projecting what this rate will be one to two years ahead. The core PCE inflation rate, which eliminates the effects of volatile food and energy prices, is considered to be a reasonable but not absolute proxy measure.

Inflation Target Rate. We know this rate with precision as the FOMC has established the target rate as 2%.

Unemployment Rate. This is the BLS's standard U-3 measure of unemployment complete with its flaws in failing to capture cyclical variations in discouraged workers.

Structural Unemployment Rate. This is the noninflationary long-term rate of unemployment. There is much debate about what this rate is and the FOMC has established a range of 5.2% to 6.0% in its projections. It is convenient to use the CBO's point estimate, which is currently 5.9% on a short-term basis and 5.5% on a long-term basis. However, CBO projects the structural rate of unemployment to drift down in coming years so that both short-term and long-term measures equal 5.3% by 2022.

FF* — Real Neutral Federal Funds Rate. One might think this measure should have a constant value over time, but it does not. Thus, its measurement is subject to debate. Based on statistical analysis covering 1988 through 2008, GS derived a value for FF** of 2.3% but cites evidence that FF* has declined to perhaps as low as 0.0% in mid-2012.¹⁰ This outcome appears to be related to the very low level of interest rates and the more limited effectiveness of monetary policy because of that phenomenon. In any event, it implies that the nominal federal funds rate, FF, must be much lower than historical statistical research indicates.

¹⁰Goldman Sachs Economics Research. "US Economics Analyst: Rebalancing Fed Policy", Issue No: 12/50, December 14, 2012.

Coefficients “a” and “b”. In its study of 1988-2008 data GS derived a value for the inflation coefficient “a” of 0.5 and a value for the unemployment gap coefficient “b” of 1.8. The values of these coefficients indicate the weighting the FOMC puts on each one of its mandates in determining monetary policy. However, to derive the contributions of each policy variable to setting the federal funds rate, coefficients need to be weighted by the variability in the inflation and unemployment measures. Based on such an adjustment, the FOMC gave about twice as much weight to inflation in setting the federal funds rate during the 1988 to 2008 time period as it gave to the employment gap.

Federal Funds Rate, FF, Implied by Historical Taylor Rule. According to GS’s analysis, when the unemployment rate falls to 6.5%, the federal fund rate, if it followed the 1988-2008 policy regime, would be about 3.0%. However, the FOMC’s current policy is not to begin raising the federal funds rate until the unemployment rate reaches 6.5%. Clearly, the FOMC has changed its policy stance significantly.

Flaw in Taylor Rule’s Specification. Economists seem to live in a world of theory in which taxes do not exist. Obviously, that is not the case. In a world of taxes, the nominal rate of interest must rise by more than the nominal increase in inflation to maintain a constant after-tax real rate of return. The math is straightforward, just chose a tax rate. There is also an intuitive argument that as inflation rises so too does the volatility of the inflation rate which leads to an increase in the real rate to compensate for this added uncertainty. This factor accounts for at least a part of the recent observed decline in FF*, the real neutral federal funds rate.

5. FOMC’s Policy Reaction Function — Taylor Rule — Forward Looking View and Vice Chairman Janet Yellen’s “Optimal Control” Policy Approach

It is clear that we are in a world in which monetary policy does not have the kinds of effects on the economy economists were accustomed to in the past. This necessitated casting off the historical policy framework and adopting an approach in greater alignment with current economic challenges and the ability of monetary policy to influence these challenges.

For one thing the FOMC has steadily adopted a series of unconventional

policy tools. In addition, and very importantly, the FOMC reweighted its policy mandates during 2012 and appears now to be giving equal weight, in both word and fact, to inflation and to unemployment. This is also reflected in a dampening of inflation rhetoric from FOMC member hawks, although there is a significant number of market participants who believe very strongly that current Fed policies are sowing the seeds of a virulent inflation down the road.

Vice Chairman Yellen’s “Optimal Control” Policy Approach.

There are three components to the “Optimal Control” policy approach. First, the FOMC establishes clear policy goals. It has done that with the 2% inflation objective and now with the 6.5% unemployment guideline and a 5.6% (mid-point of projection range) structural unemployment rate. In addition, there is a stated equal weighting of both inflation and unemployment.

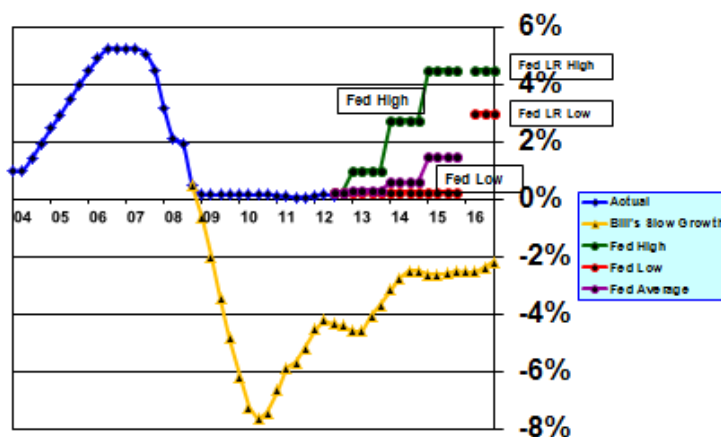
Second, rigorous econometric model analysis is conducted which includes projections of real economic activity and the evolution of the output gap, evaluation of the dynamics of inflation, and a monetary policy reaction function.

Third, the analytical framework enables examination of an “optimal” pathway for monetary policy which achieves the “best” combination of inflation and unemployment. The word “best” is in quotation marks because what is “best” is still in the final analysis a subjective judgment.

GS’s Estimate of Timing of ZIRP Phase Out Using the “Optimal Control” Policy Approach. GS finds that the coefficients “a” and “b” have values of 0.7 and 2.6 in a world in which inflation and unemployment are given equal weight compared to the historical values of 0.5 and 1.8. GS constructed a simple analytical framework which lead them to conclude that the FOMC will not raise the federal funds rate until early 2016. This, of course, is consistent with GS’s estimate of when the unemployment rate reaches 6.5%, shown in **Chart 10**. It is also consistent with my much less sophisticated analysis.

6. Federal Funds Rate

Chart 11 shows the FOMC’s high and low projections for the federal funds

CHART 11 – Federal Funds Rate Forecast

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rate for 2013, 2014 and 2015. The FOMC central tendency range is derived by excluding the three highest and the three lowest projections. The purple line (circles) is the average of projections for the 19 FOMC members (7 governors and 12 presidents).

“Bill’s Slow Growth” forecast is shown by the yellow line (triangles). My forecast indicates that the federal funds rate is not likely to increase at all, which is inconsistent with FOMC guidance and my forecast that the unemployment rate should fall below 6.5% during 2016. However, I would note that my model indicates an implied federal funds rate currently of -4.5% which falls within a -3.5% to -5.0% range suggested by the work of others.¹¹

¹¹Goldman Sachs Economics Research. “US Economics Analyst: Rebalancing Fed Policy”, Issue No: 12/50, December 14, 2012. The federal funds forecast in **Chart 11** is considerably lower than what I have shown in previous letters. The changes have to do with changing the measures of key variables in my econometric model, such as substituting the PCE inflation rate for the CPI, replacing the measure of employment growth with hours worked and replacing a measure of labor market slack with one tied to CBO’s measure of the structural noninflationary unemployment rate.

VII. Fiscal Policy

Round one of the fiscal policy struggle was won by President Obama, more or less. He forced an increase of \$620 billion in taxes on the wealthy over the next ten years. But, he also permitted an immediate tax increase of \$120 billion on wage earners by not renewing the 2% payroll tax cut. This will have a heavy impact on low- and moderate-income households. He also won because there were no significant spending cuts and entitlements emerged unscathed. And, implementation of mandatory spending cuts was delayed for two months.

But rounds two, three and four of the fiscal policy struggle — mandatory spending cuts, debt ceiling and budget authorization are ahead. And, by most accounts political momentum will switch in the direction of House Republicans.

1. Economic Impacts

As I mentioned in **Section V**, taxes will go up immediately to the tune of \$126 billion in additional payroll taxes, \$24 billion in increased investment income taxes and \$50 billion in higher taxes to be paid by wealthy Americans.

In addition, there is about \$85 billion more in spending cuts that are carryovers from the Budget Control Act and expiration of stimulus programs put in place in 2009.

This totals \$285 billion in fiscal contraction during 2013 and amounts to about 1.75% of nominal GDP. If the mandatory spending cuts, which were deferred for two months, take effect, the total fiscal drag would rise to \$335 billion or approximately 2.0% of GDP. This additional \$50 billion is not in anyone's forecast and would depress real GDP growth during 2013.

There could be some offsets linked to the \$60.4 billion spending authorized for Hurricane Sandy relief and flood insurance.

Nonetheless, the risks appear to be tilted to the down side. There is reason to believe that the Fed's 2013 projection range of 2.3% to 3.0% for real GDP growth in 2013 underestimated substantially the negative impact

of fiscal policy adjustments that now seem likely.

In addition to the detailed discussion in Section V about the negative implications of fiscal policy changes for household income and spending, there is reason to worry about whether business investment spending rebounds as expected. First of all, business investment spending did not slow as much in the fourth quarter as expected. We will know that with greater certainty when the Bureau of Economic Analysis releases the fourth quarter “Advance Estimate” of GDP in late January. A stronger fourth quarter would have the statistical effect of raising the bar higher to realize significant growth in 2013. Second, if consumer spending growth slows as much as seems likely, this is likely to delay business investment spending in industries tightly linked to consumer spending.

It is this kind of analysis that supports B of A’s pessimistic expectation for real GDP growth to be depressed to about a 1% annual rate during the first half of 2013.

2. Policy Prospect for Rounds Two, Three and Four

Perhaps most important and rather discouraging is that no one seems any longer to give a Grand Bargain much of a chance. That chance faded away when the Bush tax cuts were extended permanently without addressing spending and entitlements.

Going forward there appears to be little incentive for Republicans to compromise. They own the House for the next two years and most Republicans come from districts that are strongly anti-Obama. Redistricting has given Republicans a built in edge which will not likely change until the next decennial census in 2020.

What this means is that unless Obama agrees to negotiate explicit spending reductions and joins in meaningful discussions on entitlement reform, Republicans are likely to dig in their heels and let the mandatory spending cuts take effect as now scheduled for March 1, 2013.

Matters are more complicated for the debt ceiling and the budget resolution as both ultimately will require some kind of action. As was the case in the summer of 2011, Republicans will probably use extension of the

debt ceiling as a hammer to attempt to force President Obama to negotiate spending cuts and entitlement reform. Obama has said emphatically that he will not negotiate the debt ceiling. I'm not sure where that leaves us, but it certainly raises the possibility that there will be a default of some kind. If the Democrats want to play nasty, the Secretary of the Treasury can threaten to suspend or limit social security payments. This kind of response was threatened once before.

And then there is the expiration of the continuing budget resolution on March 27. If no action is made to extend the resolution or adopt the fiscal year 2013 budget, spending will revert to fiscal year 2012 levels and certain portions of the government will have to be shut down.

So, there is little compelling either side at the moment to get serious about negotiating. We can hope that the spirit of compromise somehow miraculously infuses Congress and solutions are found. However, a more likely outcome seems to be a combination of missed deadlines and short-term extensions. And, even with short-term extensions, something of substance will be demanded by Republicans in return.

3. Rating Agencies

Lest we forget, the three rating agencies have a negative outlook on U.S. Treasury debt and all have telegraphed that a ratings downgrade is likely if Congress does not take substantive action to put the U.S.'s public-debt-to-GDP ratio on a more sustainable path. The problem is that \$620 billion in increased revenue over ten years is insufficient to accomplish this. Additional spending cuts will help, but the real problem with the long-term debt ratio is entitlement reform. If the Democrats remain intransigent on this issue, then a ratings downgrade sometime later in 2013 will become a significant possibility.

In the short run a rating downgrade of Treasury debt would have little substantive impact. Interest rates are low because of the weak economy and monetary policy and this will not be changed by a ratings downgrade. The matter, thus, is more one of "prestige" versus becoming a banana republic. Just as has been the case with the recent downgrade of French public debt, a one-notch downgrade is unlikely to spur enough political pressure to make a difference.

VIII. Europe, China and Global Economies

Not much of note happened in the rest of the world over the holidays.

Europe's recession continues, although most forecasters expect a return to growth by the second half of 2013. I think this may well turn out to be optimistic. As I have mentioned repeatedly, European policy makers have been effective in stabilizing financial markets through a variety of initiatives, but none of these has addressed effectively fundamental political and economic reforms which are necessary in the long run to assure the viability of the European Union and the common currency.

Recent data from *China* have reinforced the soft landing story. It is still much too early in the tenure of China's new leadership to know whether and how the necessary transformation of the Chinese economy and concomitant political reforms will occur. This will take time to unfold. Over the next several months China is likely to support somewhat improved global growth, but is unlikely to be the engine of global growth to the same extent as it has been in recent years. For the moment, downside risks also appear to be in check.

Japan's election returned Shinzo Abe to power as prime minister. He campaigned on a platform to end Japan's chronic deflation by pressuring the Bank of Japan to flood the economy with liquidity. As witnessed by the recent 10% depreciation of the yen against major global currencies, markets expect Abe's policies to have impact. The depreciation of the yen will benefit Japan's balance of trade relatively quickly. However, it is too soon to determine whether more aggressive monetary policy will stimulate domestic aggregate demand and result in a little price inflation instead of the persistent deflation of recent years.

There is a potential dark side to Japan's impending more aggressive yen currency policy. When one nation debases its currency, it can boost exports and improve its economic growth. However, when all nations follow suit, growth improvements in individual countries are snuffed out. All that remains is a rise in the global inflation rate. Of course, this is part of Japan's intended policy for itself. But, a currency war propelled by money creation is risky business. The U.S., U.K. and European Union are already pursuing aggressive monetary policies, so the currency war is already under way. Japan is a bit late to the party.

APPENDIX: Outlook — 2013 and Beyond — Summary and Highlights of Key Issues

Observations about the 2013 U.S. and global economic outlook and risks to the outlook were contained in the *December Longbrake Letter* and are included below without any changes. As events unfold during 2013, this will enable the reader to track my analytical prowess. Periodically, I plan to circle back and report on the accuracy of these observations.

1. U.S.

- **Q4 real GDP** growth projections range from 0.5% to 1.8%; tracking estimates based on October and November data are consistent with growth of approximately 1.0%.
- **2013 real GDP** growth projections range from 1.5% to 3.0% but with a preponderance of the forecasts falling in the lower end of the range. The drag from tighter fiscal policy will offset gradual improvement in the household and business sectors. Growth should improve gradually over the course of the year. The balance of risks, particularly U.S. fiscal policy but also global growth, is weighted toward slower GDP growth.
- **Real GDP output gap** will remain very high and close little, if at all, during 2013.
- **Employment** should grow about 125,000 per month, somewhat more slowly than in 2012.
- **Unemployment rate** should edge down to about 7.5%. A lower rate is not very likely unless more discouraged workers exit the labor force.
- **Consumer disposable income and spending growth** will remain weak and could decline from 2012 growth rates if employment growth slows and wage and salary increases remain under pressure. Growth will be a lot weaker if Congress permits the payroll tax cut and extended unemployment benefits to expire.
- **Household personal saving rate** will probably continue to decline gradually; however, it could rise if employment and income prospects worsen materially.

- **Export and import** growth will probably continue to slow gradually due both to slower U.S. growth but also due to deepening recession in Europe.
- **Manufacturing** growth will be subdued reflecting recession in Europe and slower growth in the U.S. The order backlog index was a very low 41.0 in November.
- **Business investment** spending has slowed sharply because of fiscal cliff concerns and could rebound if there is a satisfactory resolution of major fiscal issues. Capital expenditure plans are cautious based both on concerns about growth and political uncertainty.
- **Housing investment** is one of the brighter prospects. However, increased activity is likely to be concentrated in multi-family rather than single family. Housing starts are likely to increase 25% in 2013 to approximately one million. Housing prices should rise between 2% and 3%.
- **Monetary policy** — the Federal Reserve has committed to purchase \$85 billion in securities every month including \$40 billion in mortgage backed securities and \$45 billion in U.S. Treasury securities.
- **Inflation** will remain below the Federal Reserve's 2% objective at least through 2015. Concerns about increases in inflation in the long-term are misplaced.
- **Federal Funds rate** is not likely to increase before mid-2015 and might not increase until late 2016 or early 2017.
- **Fiscal policy** will be contractionary in 2013, but will come less of a factor in ensuing years
- **Potential structural rate of real GDP growth** has declined significantly and could decline further in coming years unless a concerted public initiative is undertaken to invest in education, research and public infrastructure

2. Rest of the World

- **European financial markets** are likely to remain relatively calm thanks to the activist role of the European Central Bank

- **European recession** is spreading to stronger countries and worsening in peripheral countries
- **European banking union** will do little to solve deep-seated European and Eurozone structural problems
- **European political dysfunction, populism and nationalism** will continue to worsen gradually
- **China** appears to have achieved a **soft landing** and economic activity will strengthen modestly
- **China's new leadership** understands the need to design and implement **economic reforms** and avoid repeating a massive infrastructure spending program
- **Global growth** is likely to be fairly steady in 2013 but will depend on developments in the U.S. and Europe

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

- **U.S. fiscal policy** tightens more than expected
- **Europe's recession** deepens more than expected; financial market turmoil reemerges; political instability and social unrest rises more than expected threatening survival of the Eurozone
- **Chinese** leaders have difficulty implementing **economic reforms**; growth slows more than expected
- **Global growth** slows more than expected
- Severe and, of course, unexpected **natural disaster** occurs
- **Disruption of Middle East oil supply**, stemming from hostile actions involving Iran and Israel, occurs

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