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

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The Longbrake Letter*

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I. Summer Optimism — Fading or Gone?

Last month I began the ***July 2010 Longbrake Letter*** with a reference to Paul Krugman's June 27, 2010 column in the New York Times, which brooded about the U.S. being in the early stages of the "Third Depression" — the other two were the Long Depression following the Panic of 1873 and the Great Depression punctuated by the financial and banking crises of 1929-31. Krugman's column capped a two-month surge in pessimism about the sustainability of economic recovery and the possibility of a double-dip recession.

But, as it turns out, Independence Day marked the nadir of the stock market correction. Until the stock market rout on August 11th the S&P 500 index had risen 9.6% since early July. Although the Federal Open Market Committee's publication of its assessment of the economy and stance on monetary policy contained no unexpected surprises, sometimes when the obvious is stated by an official source markets refocus on reality rather than hope. Thus, August 9th may mark the high point of the recent stock market bounce.

And, just as has happened on prior occasions, the contradictory performance of the bond market in recent days relative to the stock market's optimism indicates that bond traders either pay more attention to economic fundamentals, or are less prone to get captured by the emotional sentiment of the moment. In any event Treasury bond yields continued to decline steadily in recent days, which customarily signals a belief that economic activity will slow and inflation will diminish. The 10-year Treasury yield has fallen from 3.00% on July 2 to 2.72% as of August 11th.

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The sharp stock market correction began on April 24th with the emergence of the sovereign debt crisis in Greece and deepened with a slew of data reports that cast doubt on the strength of the economic recovery. As we know from watching the psychology of crowds, the negative momentum built for a while — the bears were in the ascendency — but eventually the pessimistic momentum became overextended and exhausted itself.

Optimists, or bulls as the stock market refers to them, stepped in and momentum switched. While acknowledging that the pace of recovery has slowed and the hoped-for "V" is unlikely, the optimists dismissed the possibility of a double-dip recession. Their belief, or perhaps "hope" might be the more appropriate word, is that policymakers will once again come to the rescue.

Positive momentum was reinforced by the apparent containment of the European sovereign debt problems, punctuated by the broadly-based verdict that the stress-tests of European banks demonstrated their collective soundness. This latter event falls into the category of wanting to believe that all is well, finding numbers that support that view, and failing to examine details of assumptions and results in the context of fiscal austerity policies whose consequences have yet to manifest themselves. In short, the conclusion that all is well is overly simplistic and premature.

The 10-year Treasury note yield peaked at 4.01% on April 5th, fully 18 days before the stock market peaked on April 23rd. Thus, bond traders sniffed out the faltering economic recovery before stock traders did. When optimism re-emerged in the stock market, bond yields continue to fall. Having reached the conclusion that a "V-shaped" recovery will not occur and that a double-dip recession is a possibility, bond traders' logic is soundly based. Either economic growth will stagnate or decline with the consequence that deflation will emerge or the Fed will intervene and attempt to prevent such an outcome through aggressive purchase of Treasury securities. Bond traders will win either way because yields will decline as inflation slows and yields will also decline as the Fed alters the supply/demand dynamics by purchasing Treasury securities for its balance sheet.

The Federal Open Market Committee (FOMC) at its meeting on August 10th took a small step in the direction of reinitiating its quantitative easing program by announcing it would maintain the size of its balance sheet by purchasing Treasury securities with maturities ranging from 2 to 10 years to

reinvest incoming cash flows from principal repayments on its huge mortgage backed securities portfolio. This policy action, while seemingly limited in scope, is very important symbolically as it signals that the Fed is prepared to expand its balance sheet should incoming economic data continue to be disappointing and if the possibility of deflation increases. However, most believe that the threshold for the Fed to engage in net new quantitative easing is high. What this means is that the Fed will not act until the data are compelling, but by that time, should we ever get to that point, negative momentum would already be well entrenched, which would limit the effectiveness of new quantitative easing.

Could it be that the bond traders once again are a little better on timing than stock traders? In the aftermath of the disappointing July employment report and then the FOMC decision two business days later, 10-year Treasury note yields fell more than 20 basis points. Is the brief respite of summer optimism nearing an end? Based on the plunge in stock markets globally on August 11th, the answer would appear to be "yes".

As I have noted before, sentiment swings back and forth between optimism and pessimism as market participants try to discern the future direction of the economy and possible policy interventions and the consequences of those interventions. Generally trends in economic activity unfold slowly, which is to say that swings in sentiment often overstate underlying fundamentals. That is why it is important to examine critically fundamental components of the economy, likely trends in these components and interactions among them, possible potential policy interventions and their impact on economic activity, and the probable longer-term consequences of policy actions already taken. In so doing, trends in economic activity and risks to those trends can be identified. Listening to the daily cable-TV business channel chatter, which oscillates in lock-step with swings in sentiment, only serves to obfuscate and confuse.

Those who have read my previous letters know that I have felt that a second-half slowdown in economic activity was likely as the inventory rebound and fiscal stimulus faded as supports. While these facts were generally acknowledged, the hope was that private economic activity would pick up. However, an examination of the historical record of the aftermath of credit-driven recessions and an appreciation of the negative effect of the very high level of household debt leverage on spending once the artificial support of asset price inflation disappeared indicated that recovery would be weak

and fragile and would depend to a greater extent and for a longer period of time on policy support to maintain spending and economic activity.

While the long-term negative consequences of a high public federal debt to GDP ratio are significant, as I discussed in my ***June 2010 Longbrake Letter***, premature curtailment of federal fiscal stimulus when the economy is still in intensive care can only increase prospects for a less favorable trend in economic activity. But that is where we appear to be. Politically speaking further federal stimulus seems dead. It was only with great difficulty that Congress extended unemployment benefits through November and a further extension after that now appears unlikely. Congress scaled aid to state governments back to a paltry $26 billion and no further assistance seems likely.

The coming Congressional debate will be about what to do with the Bush tax cuts, which expire at the end of 2010. While it had been assumed that many of these cuts would be extended, the evolving politics may lead to a stalemate in which case all of the cuts will expire. Were this to happen it would entail a massive and immediate withdrawal of fiscal support. The consequences would not be pretty. Anyone who cares to get a sense of those consequences need only study what happened in 1937 after the Roosevelt administration and Congress raised taxes and cut spending to drive down the deficit. Economic activity declined 3.4% in 1938, similar in magnitude to the recent Great Recession, but from a starting point of substantial unemployment, thus extending and deepening the Great Depression.

So, we will see in the next few months how the economy performs with diminishing government support, but I assure you that the risks now are tilted to the downside. And, if all of the Bush tax cuts expire, hold onto your hat!

II. Topics Addressed in the August Letter

August's commentary is divided into three parts. ***U.S. cyclical economic developments*** are summarized in the first part. The debate is no longer about whether there will be a slowdown in activity. That is now accepted by most. The debate has shifted to how long the slowdown will last and whether it will morph into a new recession — the so-called double-dip.

In the second part I provide brief updates on past topics of the ***U.S. federal budget deficit***, discussed in the ***June 2010 Longbrake Letter***, and ***European sovereign debt***, discussed in the ***July 2010 Longbrake Letter***.

In the third part of this month's commentary I take a deep dive into the developing debate about whether the U.S. economy is threatened by ***deflation***. While only a few months ago the press was filled with stories about the potential for inflation because of significant federal budget deficits, as the economy has slowed and inflation has moderated more attention is now being paid to the possibility of deflation. In the lifetimes of most, deflation has not been a reality we have experienced, so it is not surprising that we focus on the devil we know and not on the one we do not know. But, a study of history indicates that deflation can have pernicious consequences just as is the case for inflation. And, in that context policy needs to be crafted in a way that avoids deflation just as much as we have long since agreed that policy must curtail a potential inflationary outbreak.

III. Near-Term U.S. Macro Economic Outlook

1. GDP

The advance estimate of second quarter GDP growth was 2.4%. The advance estimate is based on two months of data and estimates for the third month. Data that has come in since the advance estimate was published, including the surprising surge in the June trade deficit, suggest that second quarter GDP growth will be revised down to between 1.5 and 2.0%.

Both B of A and GS reduced their GDP estimates for the next six quarters within the last two months. While GS is more pessimistic in the near term, the two forecasts converge by the second half of 2011.

Importantly, after netting out the transitory effects of government stimulus spending and changes in inventories, adjusted GDP is positive and rises over time. In other words, both forecasters expect the private sector recovery to proceed; however, the extent of the improvement will be obscured by the top line published GDP number which will include the negative drag from shrinking government stimulus. This pattern essentially reflects the

Table 1: GDP – Effects of Fiscal Stimulus & Inventories

- **Fiscal Stimulus (Federal + State & Local) turns negative in 2010 Q3 and Averages -1.7% of GDP in 2011**

	Bank of America					Goldman Sachs				
Quarter	Fore-cast	Stimu-lus	Net	Inven-tory	Net	Actual/ Fcst	Stimu-lus	Net	Inven-tory	Net
2009Q1	-5.0%	-0.6%	-4.4%	-1.1%	-3.3%	-5.0%	-0.6%	-4.4%	-1.1%	-3.3%
Q2	-0.8%	1.1%	-1.9%	-1.0%	-0.9%	-0.8%	1.1%	-1.9%	-1.0%	-0.9%
Q3	1.6%	1.4%	-0.2%	1.1%	-1.3%	1.6%	1.4%	-0.2%	1.1%	-1.3%
Q4	5.0%	1.2%	3.8%	2.8%	1.0%	5.0%	1.2%	3.8%	2.8%	1.0%
2010 Q1	3.7%	1.6%	2.1%	2.6%	-0.5%	3.7%	1.6%	2.1%	2.6%	-0.5%
Q2	2.4%	0.2%	2.2%	1.1%	1.1%	2.4%	0.2%	2.2%	1.1%	1.1%
Q3	2.9%	-0.9%	3.8%	0.4%	3.4%	1.5%	-0.9%	2.4%	0.4%	2.0%
Q4	2.6%	-1.1%	3.7%	0.3%	3.4%	1.5%	-1.1%	2.6%	-0.0%	2.6%
2011Q1	2.3%	-1.5%	3.8%	0.0%	3.8%	1.5%	-1.5%	3.0%	0.2%	2.8%
Q2	2.4%	-1.8%	4.2%	0.0%	4.2%	2.0%	-1.8%	3.8%	0.1%	3.7%
Q3	2.8%	-1.7%	4.5%	0.2%	4.3%	2.5%	-1.7%	4.2%	0.6%	3.6%
Q4	3.0%	-1.7%	4.7%	0.2%	4.5%	3.0%	-1.7%	4.7%	0.3%	4.4%

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Table 1 shows Bank of American's (B of A) and Goldman Sach's (GS) GDP forecasts quarterly for 2010 and 2011 and nets out the impacts of government fiscal stimulus and inventory accumulation. GS recently revised its estimate of fiscal stimulus to include state and local government spending in addition to federal spending. It also revised the estimate to exclude more generous federal aid to the states and an end to extended unemployment insurance benefits after November. GS's fiscal stimulus adjustments are replicated in the B of A part of the table so that the only differences between the two are in the top line GDP estimate and the net change in inventories estimates.

view of the Fed articulated in the August 10th FOMC statement: "...the Committee anticipates a gradual return to higher levels of resource utilization in the context of price stability, although the pace of economic recovery is likely to be more modest in the near term than had been anticipated." However, it should be noted that the Fed's GDP estimates for 2010 and 2011 exceed those of both B of A and GS. The Fed is definitely optimistic and, if the handoff from government to the private sector falters, and the risks of that occurring is significant, then the risk is that the B of A and even the GS forecasts will also be too optimistic.

To the extent that the Economic Research Cycle Institute (ECRI) index of leading indicators has real predictive power, it is signaling a nontrivial probability that the economy could slide back into recession later this year.

Many economists discount the predictive power of this measure because it is fitted to past data after the fact. If the structure of the economy has changed and if the correlation between measures in the ECRI index and GDP growth has changed, then the ECRI index could very well be giving a false signal. Nonetheless, it would be imprudent to ignore this warning signal as it did an excellent job in foreshadowing the onset of the Great Recession and the initial recovery.

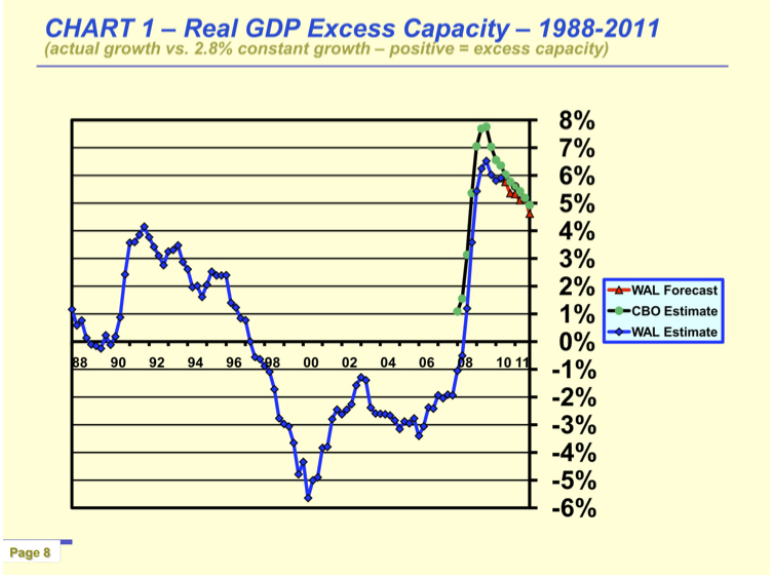
In a report just released by the San Francisco Federal Reserve Bank, Travis Berg and Oscar Jorda found that there is about a 50% chance the economy will enter into recession in late 2011. This conclusion is based on examining the 10 individual measures that make up the index of Leading Economic Indicators, but disaggregating their effects to adjust for timing: "...we find that no single combination of indicators is likely to predict well at every time horizon." Also, they exclude the impact of the shape of the yield curve, noting plausibly that in a zero interest rate policy environment the historical predictive power of the yield curve is unreliable and perhaps meaningless.

In the ***May 2010 Longbrake Letter*** I discussed how population growth and productivity combine to determine the noninflationary rate of growth in real GDP and how the gap between potential and actual GDP can be measured. A positive output gap imparts deflationary pressures while a negative output gap fuels inflation.

I assume that the potential growth rate in real GDP currently is about 2.8% annually. This figure is somewhat, but not much higher, than estimates of most others. It is derived by combining the contributions of labor force growth and labor productivity. The story that **Chart 1** tells is that there is substantial excess capacity in the economy and it is much greater than what occurred after the recession of the early 1990's. I calculate the level of excess capacity in the second quarter of 2010 as 5.9% which compares to the Congressional Budget Office's (CBO) estimate of 6.4% based on the second quarter advance GDP report and CBO's published full-employment GDP estimate.

The real story, however, is that it will take a long time to reduce excess capacity. By the end of 2011 excess capacity falls only to 4.6% using my calculation methodology and to 4.9% using Bank of America's GDP forecast and CBO's estimate of full employment potential GDP. If Goldman's Sach's

Chart 1 shows how the GDP output gap has fluctuated since 1988 and includes a two-year forward forecast. Measurement is difficult so you should not attribute precision to the data in the chart. However, the oscillations in the output gap over time tell an important story.



GDP forecast is substituted for Bank of Americas', excess capacity inches down only from 6.4% to 5.9% by the end of 2011.

The reason that excess capacity is important is that it signals that supply exceeds demand and generally when that is the case downward pressure exists on prices in the form of disinflation, that is, a declining rate of inflation. When the actual level of inflation is low, as it is currently, substantial and sustained excess capacity could lead to an outright decline in the general level of prices — deflation.

2. Employment

The July employment report, released on August 6, 2010, disappointed for the third month in a row. In recent months the top line employment number has been skewed by temporary Census Bureau workers. Because of that economists have focused on change in private employment rather than total

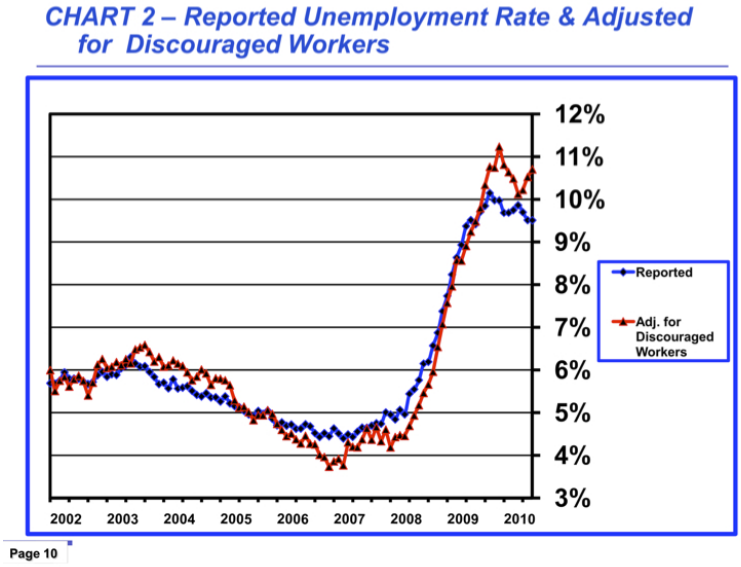
employment, which includes government workers, to gage to what extent the labor market is recovering. From January through April private employment increased an average of 119,000 per month with each month's total being greater than the previous month. This seemed to validate expectations of an incipient turnaround in employment. However, private payroll gains plummeted to 51,000 in May, 31,000 in June and 71,000 in July, well below the level required to absorb workers entering the labor force, let alone make any headway in reducing unemployment.

There was further disappointment buried in details of the report. While unemployment and the unemployment rate were unchanged, the labor force fell 181,000 in July on top of the 652,000 decline in June. Those employed, according to the household survey, fell 302,000 in June and another 149,000 in July. That is a lot of discouraged workers leaving the workforce. Note that the number of unemployed includes only those who are looking for work who can't find it. If they can't find work and become discouraged and drop out of the labor force, they are no longer counted as unemployed.

While the unemployment rate has stabilized at a reported level of 9.5%, which is down from a peak of 10.1% in October 2009, adjusting the unemployment rate to include discouraged workers paints a different picture. This adjustment can be calculated by determining what the labor force participation rate would be in a normal situation. Because of the demographic changes that are occurring in the age distribution of workers as time passes, the labor force participation rate is currently declining very gradually. I calculate that the participation rate has declined from 65.73% at the beginning of the Great Recession in December 2007 to 65.32% in July 2010. However, the actual participation rate in July 2010 was 64.55%. The difference amounts to 1.8 million workers who really should be counted as unemployed. Certainly, when labor markets improve these discouraged workers will attempt to reenter the labor force. Adjusting for discouraged workers, the unemployment rate would have been 10.7%, not the actual reported rate of 9.5% in July.

As can be seen in **Chart 2**, the adjusted unemployment rate that includes discouraged workers peaked at 11.2% in December 2009. It then improved to 10.1% in April 2010, which was coincident with the surge in optimism that labor markets were turning around. However, since April the adjusted unemployment rate has deteriorated to 10.7%, while the official unemployment rate has improved from 9.9% to 9.5%. You can also see a

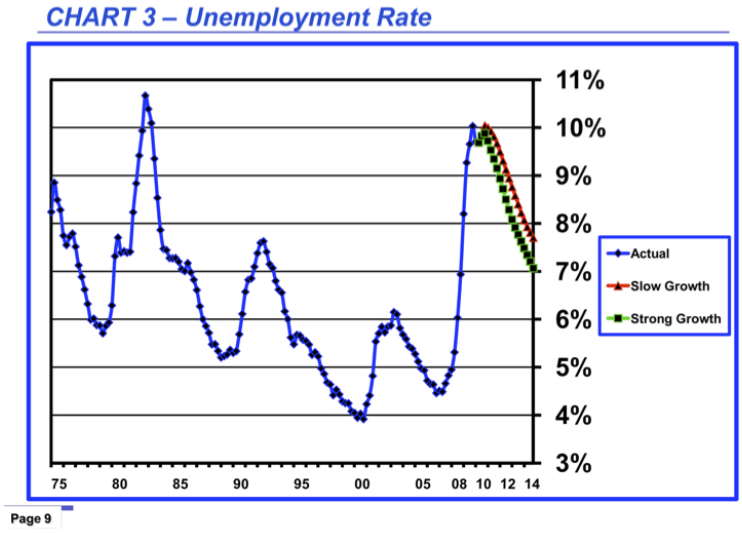
pattern in **Chart 2** where the adjusted unemployment rate is higher than the reported rates during and just following a recession. The relationship reverses when reported unemployment is low, which implies that during times when jobs are easier to get, some individuals who would not normally seek employment enter the labor force.



The July employment report affirms that the severe deterioration in the labor market has ended. That is the good news. The bad news is that rapid recovery is unlikely and unemployment will remain at an extremely high level for a long time to come. And, because discouraged workers will gradually reenter the labor force as the economy recovers, it is likely that the unemployment rate will fall very gradually as shown in **Chart 3**.

3. Consumers

Consumer spending accounts for approximately 70% of GDP, so it bears close scrutiny. Consumer spending depends on earned income, investment income, government transfer payments, pensions and an ability to monetize wealth. At an economy wide level, aggregate consumer spending also depends upon the number of employed workers, average hours worked and the average hourly wage rate.



In normal times growth in real consumer spending growth is fairly stable, averaging about 3.04% annually over the last 25 years. This is derived from a 0.9% annual rate of increase in the labor force and a 2.0% gain in real incomes due to productivity growth. The difference is due a steady decline, until recently, in the saving rate.

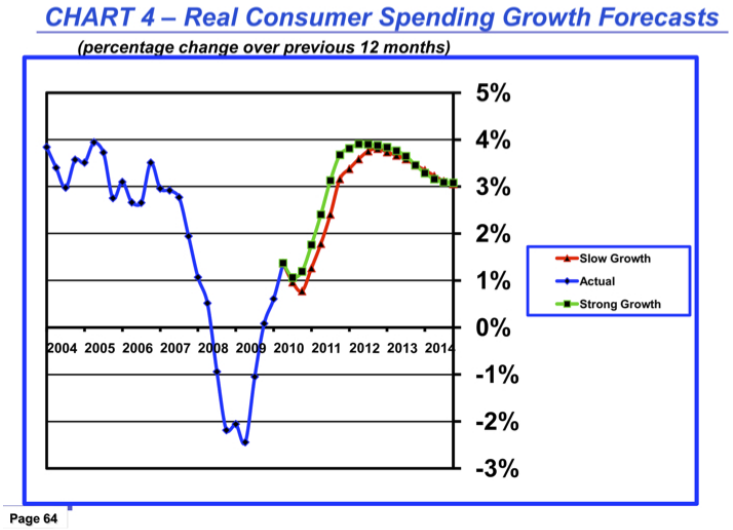
Real disposable income growth has averaged 2.85% annually over the last 25 years. Spending growth has exceeded income growth because consumers through much of the last 25 years were able to tap wealth through access to credit. A steady decline in the consumer saving rate during most of the last 25 years was a direct result of a spending growth rate that exceeded the disposable income growth rate.

Since the onset of the Great Recession in December 2007, this has all changed. Real disposable income, in spite of a significant increase in government transfer payments, has grown only 1.1% annually. Real consumer spending has actually declined at a -0.5% annual rate over the same period as consumers have retrenched and paid down debt and increased savings. The saving rate over that period has increased from 2.4% to 6.4%.

Last month I expressed concern that consumer spending growth once again was growing faster than income. This conundrum was resolved by

substantial revisions to the data. Consumer spending had systematically been overstated and saving understated. Now over the last six months real disposable income growth has accelerated to a 2.78% annual rate while real spending growth has been 1.47%. Thus, real disposable income growth is approaching the long-term norm, but spending growth, although greatly improved, remains quite low. The higher saving rate and continued reductions in consumer debt all point to an on-going process of household balance sheet repair. In the long-run this household de-leveraging process is healthy, but the cost in the short-run will be spending growth that is consistently less than income growth and the collateral consequence will be slower improvement in GDP and employment.

Chart 4 shows that consumer spending growth is not likely to converge to the long-term norm of real income growth of about 2.9% until late 2011. Over the next year spending growth could decelerate for a while as fiscal stimulus diminishes disposable income growth and improvement in wage and salary income is insufficient to offset this decline. The rise to a 4% growth rate in 2012 is predicated on the assumption of strong employment and income growth as the economy improves. By 2014 the spending growth rate slows to a long-term norm consistent with a stable saving rate in the range of 6% to 7%.

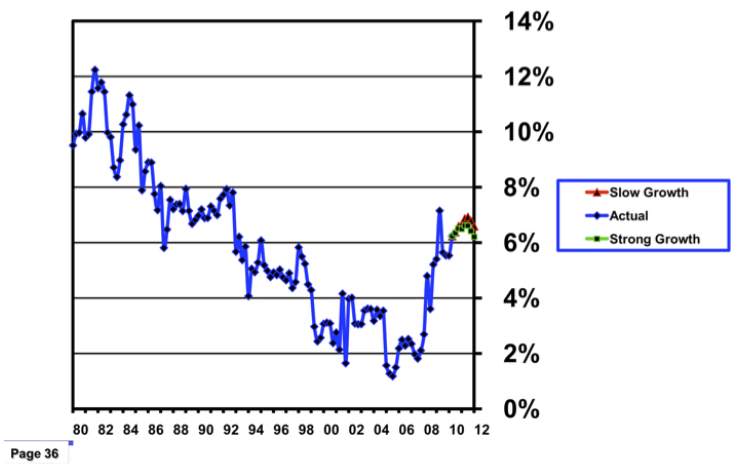


Over the longer run aggregate consumer spending will depend on the level of unemployment and that will depend in turn on the overall health of the economy. Since employment growth is likely to occur slowly and wage

growth will remain under pressure the odds strongly imply that spending growth will be relatively weak as consumers continue to reduce reliance on debt, which is another way of saying that they will focus on increasing savings (see **Chart 5**).

Some believe the saving rate will move to a higher level of 7% to 9% that prevailed during the 1980's. Were that to occur, it would delay the recovery in consumer spending growth and extend the length of time required for the economy to return to full employment.

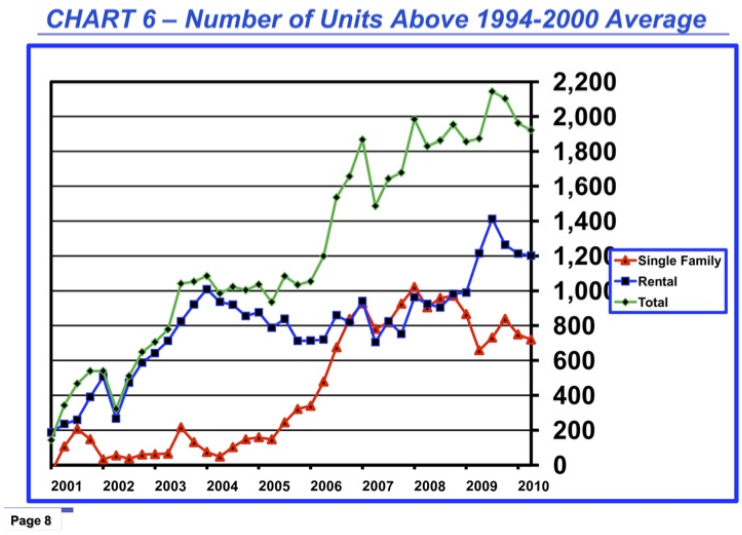
CHART 5 – Consumer Saving Rate (quarterly average)



4. Housing Investment

In a typical business cycle, housing construction is a driver of economic recovery. That is not the case this time. Overbuilding during the bubble years lead to far greater than normal inventories of vacant homes and apartment units. **Chart 6** shows that inventories are nearly 2 million units above normal levels and have moved down only slightly over the last three quarters.

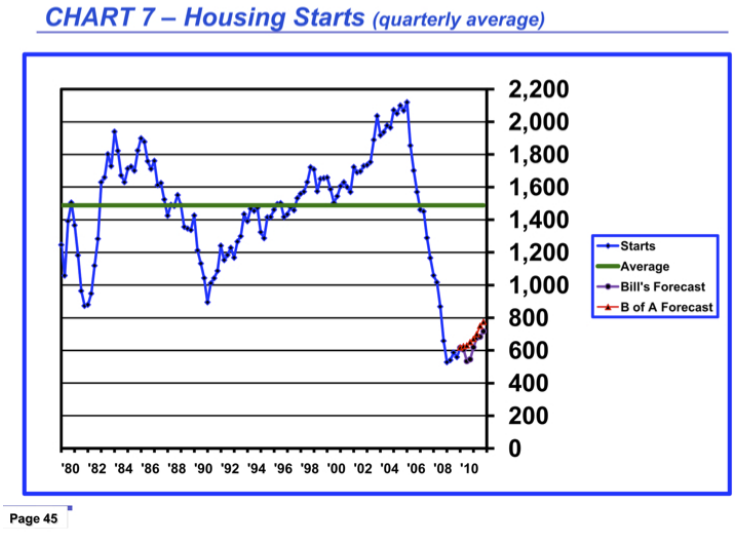
New residential homes sold in June amounted to an annual rate of 330,000, the second lowest amount ever reported by the Census Bureau since it began keeping records in 1963. The lowest level was 267,000 (originally re-



ported as 300,000) in May 2010. New residential building starts were 549,000 in June — 454,000 single family homes and 95,000 multi-family rental units. See **Chart 7**.

The difference between single family starts and sales is huge and in the wrong direction. It is evident that the tax credit program boosted sales temporarily but it also appears to have boosted construction. If the policy objective was to reduce inventory, this surely was not achieved as excess inventory of single family homes has been stuck in the 600,000 to 800,000 range for the last five quarters. With the end of the tax credit program, and there is absolutely no prospect for any kind of renewal, it is widely expected that housing construction and sales will remain weak for an extended period of time. The data in **Charts 6 and 7** certainly support that conclusion.

With softness in the housing market continuing and the artificial prop of the tax credit program gone, a resumption in home price declines, which had stabilized or even increased a little, seems probable. Should this occur it likely would reinforce already weak consumer confidence and cautious spending plans.



5. Manufacturing

The Institute of Supply Management (ISM) manufacturing index has been one of the few rays of sunshine from the private sector. Strength in manufacturing over the last year has had two drivers. I have already mentioned the first which is inventory restocking, which was the inevitable result of cutbacks in production that greatly exceeded declines in demand during the free-fall days in late 2008 and early 2009. It was inevitable that as demand recovered depleted inventories would have to be restored. But that process is nearly over as the fall in the July ISM index to 55.5 from 59.7 in May signals. New orders fell sharply to 53.5, still indicating growth but decelerating nonetheless.

The second driver of manufacturing strength has been exports. China's aggressive infrastructure investment has been an important contributor as has a significant revival in international trade, which is analogous to the domestic inventory cycle. But, China's rate of growth is slowing a bit and the recent increase in the value of the dollar is beginning to take a bite out of exports.

But two recent data releases — one on U.S. June trade flows and the

other on Chinese trade flows — were disturbing. The U.S. trade deficit leaped 19% in June from May to $50 billion, composed of a $2 billion decline in exports and $6 billion increase in imports. China reported that exports in July were 38% (U.S. exports grew 18%) above the year earlier level while imports were 23% (U.S. imports grew 29%) higher. Both sets of data are moving in the wrong direction and are rebuilding unsustainable trade imbalances of the kind that contributed to the vicious global trade collapse that occurred during the Great Recession. This is a festering issue that is worsening and will eventually have potentially grave political consequences. China deflected criticism at the late-June G-20 meeting in Ottawa with its promise to move to a more flexible yuan exchange rate policy. Perhaps that will do some good in time but the early returns are hardly encouraging.

Looking ahead a few months, there is good reason to believe that the ISM manufacturing index will fall to about 50. A value of 50 means that manufacturing is moving sideways — it is neither contributing to, nor subtracting from, growth. In the past an ISM index of 50 generally has been consistent with real GDP growth of about 1.5%, which is the level that Goldman Sachs is forecasting for the second half of 2010.

IV. U.S. Federal Budget Deficit and European Sovereign Debt Updates

1. U.S. Federal Budget Deficit Update (See *June 2010 Longbrake Letter* for an in depth discussion)

As shown in **Table 1**, when the effects of government stimulus and inventory restocking are removed, private sector GDP has had great difficulty recording a positive quarter. The 1.1% gain in the second quarter of 2010 was the best quarter since the start of the Great Recession. But the private sector will need to do a lot better than that going forward as government stimulus goes into reverse and becomes a significant drag on growth. Prospects have worsened significantly in the last month because of the Senate's failure to pass the tax extenders bill. Eventually a greatly slimmed down unemployment benefits extension and a second bill containing limited state financial assistance were passed by the Senate, each with the bare 60 votes necessary. This turn of events moved forward in time and increased the amount of fiscal

drag the economy must now contend with.

Without doubt additional government spending and tax relief will increase the size of the budget deficit. According to a recent Pew poll 51% of Americans believe deficit reduction should be a higher priority while 40% believe spending and/or cutting taxes to stimulate the economy should be a higher priority. Another poll found that only 6% believe that the massive federal budget stimulus has created jobs. Economists know that is not true and that the stimulus prevented a much worse outcome. But it's hard for people to visualize that in the absence of stimulus many more jobs would have been lost. Their sense is simply that few jobs have been created which is what in their minds needs to happen and so far as they can see the stimulus has been ineffective in accomplishing this.

So, we are faced with the belief that a growing federal budget deficit will have dire consequences, which eventually would be true if nothing is done, and the belief that stimulus has had little to no beneficial impact. Mix this with election-year politics and we have a recipe for brewing a significant policy mistake.

Here is the rub. While reducing government spending is a necessary antidote to avoiding a future fiscal crisis, the timing of implementing such a policy matters a great deal. Premature withdrawal of government support when the private economy is fragile and households are still desperately working to repair strained balance sheets raises the real risk of renewed recession — the much feared double-dip. A contracting economy will not help solve the budget deficit problem. To the contrary it will worsen it by reducing government tax revenues. And, in the extreme, there is a risk that a debt-deflation reinforcing circle will be unleashed. Greece may already be headed in that direction, but we won't know for sure for several months because it takes time for policy actions to take hold and it takes additional time for responses to those policy actions to manifest themselves.

Ideally, retrenchment of fiscal stimulus, or fiscal consolidation as economists like to refer to it, should be delayed until the economy is on stronger footing and has greater resilience to absorb stimulus withdrawal. We are not there yet. As American Enterprise Institute scholar John H. Makin has put it, "We Do Not Have Liftoff". Thus, the evolving political climate that on balance opposes further stimulus and may also result in stalemate over the extension of the expiring Bush tax cuts has set the stage for an experiment

in fiscal austerity that could have disastrous consequences.

Unfortunately the political agenda is dominated by dogma, electioneering, and simple public perceptions, which are on the mark about what needs to be done in the long run but do not understand the importance that timing policy in a nuanced way has for achieving an optimal outcome that minimizes collectively both short run and long run consequences. (See Section III of the ***July 2010 Longbrake Letter*** for explanation of the policy optimization process.)

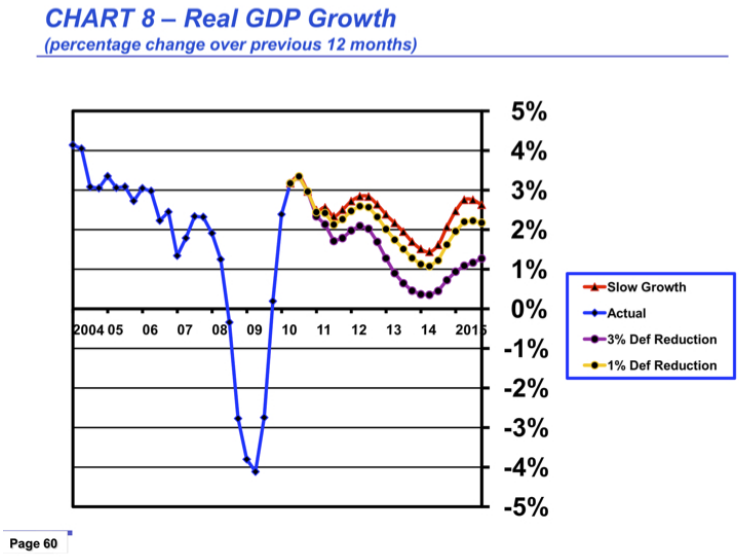
At the risk of oversimplification, Democrats tend to focus on tax fairness. On the spending side of the equation this involves providing income and benefits support to lower-income and middle-class Americans. On the taxation side, it involves higher tax rates for the wealthy and lower tax rates or tax credits (earned income tax credit and Making Work Pay tax credit) for lower-income and middle class Americans.

For Republicans the dogma is small government is good and that is best accomplished through tax cuts. The belief is that revenue that is left in the hands of the private sector will be deployed more productively than if it is spent by government with the result that economic growth is stronger and tax revenues grow accordingly. Also, starving the government of revenues forces curtailment of spending, which achieves the smaller government objective.

Recently, some Republicans appear to have ignored the fact that tax revenues and expenditures need to shrink in close proximity, preferring instead to assert that cutting taxes will generate the necessary tax revenues so that spending does not need to be curtailed. For example, Senator Jon Kyl of Arizona recently said that *"you do need to offset the cost of increased spending, and that's what Republicans object to. But you should never have to offset cost of a deliberate decision to reduce tax rates on Americans."* Senate Minority Leader Mitch McConnell suggested that tax cuts don't need to be offset because they pay for themselves. There is ample empirical research and interestingly from conservative or neutral think tanks that unequivocally finds that only a fraction of revenue foregone because of tax cuts finds its way back into the government coffer through higher tax revenues. Greg Mankiw estimates the recapture rate ranges from 15% to 33%; the Heritage Foundation estimated 30%; and the Congressional Budget Office found that the range could be as high as 28% to slightly negative!

In any event, the Bush tax cuts expire at the end of 2010. Extension or modification requires affirmative Congressional action and this probably means that there will need to be a super majority of 60 votes in the Senate for anything to pass at all. The Democrats have been willing to extend most of the Bush tax cuts except those on wealthier taxpayers and there is some talk about raising the tax rate on dividends and capital gains. The Republicans at the moment seem to have entrenched themselves in an election-year all or nothing posture. At the moment this is a recipe for stalemate and stalemate means nothing will happen or rather a reversion to higher tax rates will occur. Such an outcome would impose an immediate negative fiscal shock on the economy, perhaps similar in magnitude to what is already underway in the United Kingdom. We will see in a few months what draconian fiscal austerity does to the U.K. economy and we may share in that experience in the U.S.

To remind readers how deficit reduction — whether it comes through spending cuts or tax increases — could affect the economy, I compare in **Chart 8** growth in GDP for my slow growth scenario with two alternatives — an immediate 1% reduction in the federal budget deficit equal to about $145 billion and an immediate 3% reduction. Both shock scenarios permit continuation of automatic income stabilizers, such as unemployment benefits, so the overall impact on the economy is considerably less than an



immediate deficit reduction implies. My modeling indicates that about 70% of the immediate deficit reduction is offset over time so that the longer-term deficit, rather than decreasing by 1% actually decreases by about 0.3%. While I do not attempt to show the impact of curtailing automatic stabilizers, were that to occur, the outcome for GDP in **Chart 8** simply would be worse.

To put the 1% deficit reduction into perspective, if none of the Bush tax cuts is extended, tax revenues would increase $145 billion in 2011 and $244 billion in 2012, which ranges between 1% and 2% of GDP.

Other consequences on a 1% instantaneous reduction in the annual federal budget deficit include:

- Loss of 1.3 million jobs
- Lower inflation and a greater probability of slipping into a deflationary trap
- Lower interest rates for a longer period of time
- Less than a 1% improvement in the public debt to GDP ratio over time as the benefits of a lower deficit are largely offset by slower GDP growth

Thus, it appears that the negative consequences outweigh the benefits. That should not be interpreted as meaning that deficits don't matter. They do. And, if not addressed, a fiscal crisis of enormous proportions will eventually engulf the U.S. economy. Thus, deficits must be addressed, but the strategy needs to focus first on rebuilding strength in the private economy and then with that well underway deficits can and should be attacked tenaciously.

Without rehashing details that are well known, the bulk of the potential future fiscal crisis lies in entitlement benefits, particularly Medicare, but also social security. These programs need to be restructured now in ways that enable them to be funded through tax revenues in the future without the need to rely on debt financing. Unfortunately, this will require reducing aggregate benefits to a workable percentage of GDP. One can hope that the President's Fiscal Commission has the fortitude to find the 14 super-majority consensus to make definitive substantive recommendations and that Congress can put

aside political dogma and electioneering and take action that is in the best long-term interest of the American people.

2. European Sovereign Debt (See *July 2010 Longbrake Letter* for an in depth discussion)

Europe's move towards austerity will eventually slow its growth and perhaps even result in a double-dip recession there. However, markets seem oblivious to this risk as recent European data reports have been on the strong side. Such strength is to be expected as a natural result of a manufacturing and export surge as global trade recovered from the Great Recession. The decline in the value of the euro, courtesy of the Greek sovereign debt crisis has had a temporary favorable impact on trade and economic growth. But, let there be no doubt — austerity is not a growth inducing policy. The consequences of reduced government spending, unless the meat cleaver approach is applied as it has been in Greece, take months to be implemented and work their way through the economy. So, a couple of months of strong data should not be taken to mean that all is well and the crisis is over. It is merely quiescent for now.

Three factors are at work that will bring the crisis back to prominence in due course. First, most all European countries are pursuing fiscal consolidation policies in varying orders of magnitude. Inevitably this will reduce growth rates. The impact will be greatest for the countries with excessive debt to GDP ratios like Greece and those countries which are not cost competitive like Spain. To a limited extent the decline in the value of the euro will provide a benefit by exporting the deflationary consequences of fiscal consolidation to other countries. But in the aggregate this is a zero sum game. Not all countries can follow fiscal austerity programs simultaneously and expect other countries to bear part of the burden. This is analogous to the paradox of thrift — the more individuals attempt to save the less they are able to save collectively because substitution of saving for spending reduces economic activity and income.

Second, growth is slowing globally as the impacts of government intervention fade and the embedded disinflationary/deflationary impacts of excess aggregate global supply evolve. Thus, even a European export-oriented strategy based on depreciation in the value of the euro will likely run into strong headwinds of reduced global demand in coming months. The finan-

cial markets began to sense this prospect on August 11th with the release of data reports indicating slowing growth in several countries. China was particularly notable. While the slowing of growth there was modest, it was the directional change and the prospect for further slowing that is troublesome to a European economy that has little wherewithal to generate internal growth of any magnitude.

Third, while not much commented upon, governments in several major European countries are under the gun and could be out of office within a year. At the top of the list is Germany, but France is not far behind. Governments in Spain, Italy and the United Kingdom are also in jeopardy. Regardless of how matters sort themselves out in coming months, weak governments and economic instability are not a combination that bodes well for thoughtful and decisive policymaking. Indeed, the risk of significant policy errors is high.

While the outcome for Europe remains uncertain and it would be wrong to assert that it inevitably will be a bad outcome, nonetheless there will be further testing of the resiliency of the European monetary union. And I do feel confident in stating that the risks are considerable and are collectively tilted to the downside.

A word about the European banking stress tests is in order. This exercise reminded me a bit about the fable of the emperor with no clothes. Many readers will remember regulatory assertions that Fannie Mae and Freddie Mac met regulatory capital standards. The superficial implication of this assurance was that these entities could withstand whatever blows the market might choose to wield. Two years into conservatorship and $148 billion in direct government aid to cover losses and counting we know that Fannie and Freddie were emperors with no clothes.

The fallacy behind the stress tests is that it is difficult, if not impossible, for reasons of political acceptability and also because of the collective human tendency to want to believe in benign outcomes, to anticipate the kinds of outcomes that can cause real stress. Of course the European stress tests did incorporate a time frame and did encompass some truly stressful assumptions about growth and credit losses. But there were at least two significant flaws. The first was that the timeframe was limited to the next 18 months. This presumed that economic growth will return to a more normal pathway within that timeframe. In my opinion this was a hopeful

rather than a stressful assumption. Second, sovereign debt was not haircut unless it was in the trading portfolio, but most sovereign debt held by European banks is not in their trading portfolios. Thus, one of the highest risk negative outcomes was virtually ignored.

Another flaw in believing that stress tests provide definitive evidence of the ability of a financial institution to withstand extreme stress is that they do not attempt to consider the collective and interactive negative consequences of a financial panic. One only needs to study the events of the fall of 2008 in the U.K. and the U.S. to appreciate the prospect that seemingly well-capitalized financial institutions can collapse in short order.

So, the emperor has no clothes in my opinion. Time will tell all of us whether my instincts and analysis are firmly grounded or whether I have misunderstood and misdiagnosed the facts, which in turn has led me to a misguided and unduly negative outlook.

V. Will Disinflation Turn into Deflation?

1. Economic Theory — Markets for Goods and Services

Economic theory states that prices are determined by the intersection of demand and supply for goods and services. If the quantity demanded exceeds the quantity supplied, prices will rise until enough demand is squeezed out at the margin to clear the market.

Theory goes on to state that if the price rises enough so that profits earned by providers exceeds the marginal cost of production, new providers will be attracted into the market place and, in due course, supply will rise, thus driving prices back down to a point that no excess profit is earned. Because it takes time to build new capacity, the adjustment process is bumpy and results at times in excess supply and at other times in excess demand. When excess supply exists, we refer to this as a ***"buyers market"*** and when excess demand exists we refer to that situation as a ***"sellers market"***. In a sellers market, providers have pricing power and inflation rises, while in a buyers market purchasers have pricing power and inflation decreases.

2. Economic Theory — Macro-Economic Policy Considerations

Macro-economic policies of countries can also result in inflationary, disinflationary or deflationary impacts. Policies can create sustained imbalances between aggregate demand and aggregate supply in an economy and it is these sustained imbalances that affect the direction of price level changes.

Fiscal Policy. Fiscal policy ceases to be inflation-neutral in the following situations

- **Inflationary Bias** — The primary deficit is positive and the economy is at full employment. This situation occurs when the total deficit as a percentage of GDP exceeds interest payments on the accumulated public debt. (When the total deficit equals interest payments on the public debt the primary deficit is zero.) In this case the government is competing with the private sector for resources with the result that aggregate demand exceeds aggregate supply. In financial markets this kind of situation results in "crowding out". Interest rates rise because the private and public sectors are competing with each other for a limited supply of funds. It is important to understand that inflation in the general level of prices and increases in interest rates are linked phenomena.
- **Disinflationary or Deflationary Bias** — The primary deficit is negative and the economy is at less than full employment. In this case aggregate supply already exceeds aggregate demand and the government exacerbates this imbalance by taxing too much or spending too little. The ratio of public debt to GDP falls and the government adds to disinflationary or deflationary momentum.

Optimal Long-Run Fiscal Policy — Ideally, the government should manage fiscal policy in a countercyclical fashion so that it stimulates aggregate demand during periods of recession by running a positive primary deficit and diminishes aggregate demand when the economy is at full employment by running a negative primary deficit. Over the entire economic cycle a successful countercyclical fiscal policy would result in a constant ratio of public debt to nominal GDP.

Contingent Obligations — If long-run fiscal policy is geared only to reported public debt, this would leave a gigantic loophole for engaging

in accounting legerdemain. All are well aware that the primary threat to long-term federal government fiscal solvency lies in social security, Medicare, Medicare and other benefit programs. For the most part the present value of future obligations under these programs is not accounted for as part of the federal debt. The Congressional Budget Office recently released a report that graphically demonstrated that if current benefits provisions of these programs are not modified and reduced, the federal deficit to GDP ratio will explode in coming years. Thus, it is imperative that fiscal policy be crafted in a way that balances both short-term and long-term expenditure commitments with revenues without imparting a systematic long-term upward drift in the federal debt to GDP ratio.

Fiscal Rule — Because it is hard to craft a counter-cyclical, inflation-neutral fiscal policy in a dynamic economic and political environment some economists have suggested that the U.S. should adopt a fiscal rule. Congress already has in place a "Pay-Go" rule that requires additional spending initiatives to be offset by additional revenues. However, this rule is incomplete and does not accommodate potentially legitimate deviations from the rule to stimulate the economy in times of distress. In addition, certain expenditures are exempt from the rule. The notion of a fiscal rule would be to establish a long-term objective and attempt to de-politicize shorter-run decision making.

Goldman Sachs has suggested that a fiscal rule should have the following attributes:

- **Establish a target ratio of federal debt to nominal GDP.** The precise measure of the federal debt would need to be defined as much of federal debt is not held by the public and extensive amounts of contingent obligations exist which are not reported in a standardized format.
- **Establish expenditure constraints.** This would need to go beyond "Pay-Go" rules and extend to contingent obligations.
- **Allow for a transition period.** Ideally, transition to a fiscal rule should occur during a time when the economy is near full employment and the primary deficit is close to zero. Implementation of such a rule at a time when the output gap is enormous, as it is now, could have disastrous consequences, depending upon the level of the target federal debt to nominal GDP ratio established relative to the current ratio.

Current Situation — When the output gap is large, countercyclical fiscal policy mandates running a positive primary deficit. If the deficit is not large enough to counterbalance the short-fall in private aggregate demand, then a disinflationary/deflationary bias is imposed on the economy. Generally, although the deficit has been enormous, many economists argue that the deficit should have been even larger to reignite private sector economic activity. In fairness there is debate over this but the current drift politically toward less fiscal stimulus and fiscal consolidation will add to disinflationary/deflationary pressures. And, if those who believe that fiscal policy is already inadequate are correct, then further retrenchment in fiscal policy will unquestionably exacerbate disinflationary/deflationary pressures.

Monetary Policy. While fiscal policy directly impacts aggregate demand through spending and changes in taxpayers' disposable incomes, monetary policy impacts aggregate demand indirectly by changing the supply and cost of money. Monetary policy ceases to be inflation-neutral in the following situations:

- **Inflationary Bias** — When the economy is at full employment a monetary policy that keeps interests too low and permits the supply of money to expand beyond the amount required to facilitate full-employment economic activity will stimulate additional aggregate demand relative to aggregate supply because of easy access to cheap funding. This increase in aggregate demand in turn imparts upward pressure on the general level of prices.
- **Disinflationary/Deflationary Bias** — This type of bias occurs whenever the Federal Reserve pushes interest rates high enough that the cost of money discourages spending and investment in ways that decrease aggregate demand relative to aggregate supply. Historically, monetary policy operated through management of the quantity of money rather than the price of money. In our modern complex financial system with a plethora of financial instruments, quantity of money management is difficult at best and probably impossible. Thus, the Fed has resorted to managing the price of money.

Limitations of Monetary Policy — The difficulty with managing the price of money is that it impacts economic activity indirectly and often many months pass before a policy change impacts aggregate demand. Economic sectors that are interest-rate sensitive and depend on borrowed funds, such

as housing, cars and durable equipment, are impacted more quickly by policy changes than other sectors.

However, monetary policy can be ineffective for a while in interest-rate sensitive sectors if asset price inflation makes small changes in the cost of borrowing basically irrelevant. This is exactly what transpired during the recent ill-fated housing bubble. Monetary policy is not well-suited to contend with speculative activity, but arguably supervisory and regulatory policy could fill the gap and complement the administration of monetary policy to produce the desired monetary policy objective on a more timely basis.

Zero Interest-Rate Policy and Quantitative Easing — A monetary policy that relies only on managing the price of money becomes ineffective when interest rates approach the zero level. In recent times, the principal monetary tool has been managing the Federal Funds rate, which is the overnight interbank lending rate. By controlling this rate and by communicating its intentions about what it is considering doing to this rate in the future, the Fed attempts to influence the interest rates for various maturities across the entirety of yield curve. This indirect mechanism, however, breaks down when the Federal Funds rate is zero, as it is currently. The Fed, however, is not totally impotent in such a situation. It still has two tools at its disposal:

- The Fed can reduce longer-term rates indirectly by committing not to raise short-term rates for a period of time. This should have the effect of reducing longer-term rates because such rates are simply a function of expected future short-term rates. The longer short-term rates are held at zero, the lower long-term rates should be. Currently, the Fed's stated policy is that economic conditions: "... are likely to warrant exceptionally low levels of the federal funds rate for an extended period." The problem with this language is just how long is an "extended period"? Some have suggested that the Fed needs to be more precise about the length of the extended period or alter the language in a way that makes it clearer that an extended period is a matter of more than a few months. In any event, recent research done by Goldman Sachs indicates that the "extended period" language has reduced long-term interest rates by 44 basis points.
- Alternatively, the Fed can engage in quantitative easing through the purchase of longer-maturity securities directly for its portfolio. In so

doing, it alters the supply-demand balance in the market place and reduces the price (yield) on the securities it purchases. Such an intervention can also have a quantity effect, as well as a price effect, if the Fed finances the purchases by printing money or borrowing funds. This is called monetization of debt. While the Fed has already purchased $1.25 trillion in mortgage backed securities and a lesser amount of Treasury securities, it has neutralized the quantity effect by financing the purchases through increases in bank reserves. To the extent that banks leave reserves on deposit with the Fed to earn the current 0.25% rate of interest, these funds are not available to finance loans and thus have no impact on stimulating aggregate demand directly. As before the effect on aggregate demand is indirect via lowering the long-term cost of borrowing. The same Goldman Sachs study found that quantitative easing to date has lowered long-term Treasury rates by an additional 44 basis points for a total of 88 basis points overall.

Current Situation — In spite of a zero interest-rate policy and a $2 trillion balance sheet, many economists believe monetary policy is not sufficiently easy to stimulate aggregate demand. Thus, by extension of this argument current monetary policy is disinflationary. The Fed's Federal Open Market Committee took a very small step in recognizing this concern on August 10th by announcing it intends to purchase Treasury securities with maturities ranging between 2 and 10 years to replace repayment of principal on mortgage back securities. In effect, this moved Fed monetary policy from a de facto tightening bias to a neutral bias. However, if the economy is as weak as it appears to be, this action will be grossly insufficient to stanch building disinflationary/deflationary pressures from inadequate aggregate demand relative to aggregate supply.

Several additional monetary policy initiatives have been suggested and Fed Chairman Ben Bernanke recognized these options during the question and answer period following his recent testimony to Congress on the conduct of monetary policy:

- Strengthen the extended period language. This would change expectations and help lower longer-term rates.
- Announce a new quantitative easing program involving purchase of Treasury securities financed through an expansion of the Fed's balance sheet. Were this to occur, the Fed would need to determine whether

to finance the purchases in a neutral way by increasing the amount of reserves banks maintained with the Fed or whether to monetize the expansion.

- Reduce the rate of interest paid on bank reserves below 0.25%. The argument for doing this is that since banks would no longer earn much, if anything on reserves, they would be more likely to convert these reserves into interest-earning loans. Such an outcome is doubtful under current circumstances. Loan demand simply isn't there. This is a chicken and egg problem — which came first. In this case aggregate demand needs to rise to induce businesses to demand more bank credit. But aggregate demand won't rise until businesses decide to invest in additional production, plant and equipment and such decisions are very dependent upon favorable expectations for future economic growth. By making money available at cheap prices, banks cannot materially change business expectations.

While any of these options, if implemented, would likely help moderate disinflationary/deflationary pressures, there is doubt whether there would be enough punch in a more aggressive monetary policy to alter materially the accumulating disinflationary/deflationary pressures.

Global Trade and Currency Exchange Rates. In an open global economic system trade flows among countries can create imbalances that lead to inflationary or disinflationary/deflationary pressures. For example, I have observed that the entry of many formerly closed and relatively undeveloped economies, such as China, into world markets over the last 20 years has flooded global markets with increases in aggregate supply that have outstripped growth in aggregate demand. This development is fundamentally deflationary. Moreover, this restructuring of the global economy has a ways to run yet before the gap between developed and less developed countries closes materially. Thus, developing countries with cheap labor can grow quickly through a strategy of producing cheap goods that they export to developed countries. This results also in exporting deflation in prices from producing to consuming countries.

Matters can be exacerbated if developing countries seek to increase their competitive advantage in global markets by maintaining an artificially cheap currency. China has been the principal culprit in this game by pegging the value of the yuan to the dollar. Under considerable pressure, China has

moved to a managed exchange rate regime, but its currency is still cheap relative to what the exchange rate would likely be if allowed to float freely in the marketplace.

By maintaining a favorable exchange rate China can grow faster than it could otherwise. The consequence, however, is that production shifts from the rest of the world, and in particular from the United States, to China thus exacerbating economic slack in those countries. This further contributes to disinflationary/deflationary pressures.

3. Factors Influencing Inflation

Demand-Pull. This is the most common type of inflation. It occurs when demand exceeds available supply. In practice, inflation begins to emerge in the macro economy well before aggregate demand exceeds aggregate supply. This occurs because markets for some individual products and services reach their supply constraints well before other markets do. At any one time prices for some goods and services are rising and prices for others are falling. The sum of pricing pressures in all markets determines whether the general price level rises (inflation), rises at an accelerating rate (inflation), rises at a decelerating rate (disinflation), or falls (deflation).

Cost-Push. This kind of inflation stems from increases in the costs of key factors of production, such as commodities, labor, land, and so forth, which are not necessarily driven by demand-supply imbalances. For example, a labor contract might require an increase in wages when a decrease might be merited by supply-demand dynamics. When this occurs, companies will attempt to pass on the higher labor costs by raising the prices they set for goods and services. Cost-push inflation was a significant problem during the hyper inflation of the 1970's and early 1980's. It becomes entrenched and is hard to purge when cost of living escalation clauses are embedded in long-term contracts. In recent years most of these embedded cost of living clauses have been discontinued with the result that cost-push inflation has become relatively insignificant.

Market Dynamics — Sentiment and Speculation. Because of frictions in the market place, such as time required to increase supply-side capacity, time required to ship goods, imperfect information and the like, prices can trend above or below the "equilibrium" market clearing prices for

a given set of demand and supply conditions.

Sentiment, or beliefs of market participants about what will happen, can cause prices to exceed or fall short of the equilibrium level for a period of time. However, these excesses generally are not sustained, and reversion to the equilibrium price level eventually occurs.

Speculation can also cause prices to over or undershoot the equilibrium level. This frequently occurs in the futures markets for commodities and financial instruments. Speculation can be reinforced by general trends in sentiment. A belief that prices will rise can be self fulfilling for a while because speculators will increase their monetary investment in a commodity or financial instrument.

Expectations — Inflation Is in the Mind

There is a body of thought and empirical research that supports the belief that inflation expectations drive behaviors that become self-fulfilling. Fed Chairman Ben Bernanke commented in remarks when he served as a governor: "... an essential prerequisite for controlling inflation is controlling inflation expectations."

There are two threads to the role expectations play in price changes. First, if one expects the price of a good or service to rise in the future, he/she may be motivated to purchase that good or service before the price rises. This behavior has the effect of accelerating the timing of demand relative to supply and by creating an unfavorable demand-supply imbalance can guarantee that the expected price increase will actually occur. Once this sequence is firmly established it becomes self perpetuating. Second, if one expects prices to increase he/she doesn't actually have to accelerate the timing of purchase. The expectation simply is ratified by he/she accepting uncritically the price rise. This lack of resistance induces sellers to accelerate price increases in the hope that profits will be enhanced relative to costs. It was this kind of pricing power fortified by easy profits that drove overproduction of new homes during the housing bubble.

In the worst case expectations become institutionalized, as described in the discussion of cost-push inflation, when cost of living clauses become standard components of contracts.

While little discussed, the exact same psychological response can hap-

pen in reverse when deflationary expectations take root. If that were to occur, consumers would delay purchases today with the expectation that the purchases can be completed later at a cheaper price. This reduces current aggregate demand relative to aggregate supply and places downward pressure on prices, thus ratifying the deflationary expectation. Deflationary expectations can also become entrenched and self-perpetuating. This is clearly what has happened in Japan, which has routinely experienced 1% to 2% deflation in the general level of prices annually on average over the last 15 years.

Deflationary expectations are already at work in certain sectors, such as the housing market. However, consumer surveys indicate that inflationary expectations remain remarkably stable at levels of around 2.5% that have prevailed for several years. This means that at the moment neither inflationary nor deflationary expectations have any real sway on economic decision making and thus have limited to no impact on prices. History indicates that while price expectations can adjust quickly in specific markets, such as housing or gold, expectations for a directional change in the overall price level adjust only very gradually. Based on this fact, ***policymakers need not worry just yet about the potential onset of a deflationary mindset.***

4. Inflation Measures

Consumer Price Index (CPI). The consumer price index is the most popular inflation measure but it is not the most comprehensive one. It's fundamental shortcoming is that it is based on a market basket of goods and services that have the same weighting from month to month. Economists refer to the CPI as a "fixed weights" index. Fixed weights indices do not capture changes in the composition of expenditures or behavioral changes in shopping patterns. For example, the CPI would not incorporate a shift in consumer buying from full-service department stores to discount stores. Because of this and other methodological limitations, analysts estimate that the CPI may overstate inflation by at least 0.5% and as much as 0.9%.

Nonetheless, the CPI is the inflation measure that market participants and the media focus on and so changes in the CPI do move markets at the time of announcement. And, it is the first inflation measure to be announced each month. In my interest-rate modeling work I find that interest rates

track changes in the CPI better than other measures of inflation.

Certain components of inflation indices tend to be highly volatile from month to month and skew interpretation of the underlying trend in inflation. Because of this, economists and analysts have developed an adjusted measure of inflation, which is referred to as the "core" rate of inflation. This measure omits volatile food and energy prices.

Personal Consumption Expenditures (PCE) Deflator. Unlike the CPI, the PCE is chain weighted, which means that weights of the market basket of goods and services are updated continually to reflect shifting buying patterns. Another limitation of the CPI is that it covers only spending by urban workers. The CPE is a broader measure, covering rural families, non-profit organizations and governmental agencies that provide consumer services, such as medical care. In the area of medical expenses, the CPI includes only out of pocket expenses and omits medical insurance costs paid by employers. The PCE deflator includes all kinds of medical expenses. Note that historically out-of-pocket medical expenses have tended to rise faster than overall medical expenses because of efforts by employers to shift some of the medical expense burden to employees. Because the PCE deflator is a much broader measure of inflation it is the measure that the Federal Reserve puts greatest emphasis on as it formulates monetary policy.

The relationship between CPI and PCE, as shown in **Table 2**, is an interesting one and one that has been relatively stable over a very long period of time. CPI consistently measures total inflation to be about 42 basis points higher than PCE. Core CPI inflation is also consistently higher than core PCE inflation, although the difference appears to have narrowed slightly over time.

Table 2 — Comparison of CPI and PCE for Various Time Periods

(CPI annual rate of change — PCE annual rate of change in basis points)

Time Period	Total Inflation	Core Inflation
1959-2010	42	44
1959-1983	47	47
1983-2010	37	42
1993-2010	42	36

However, the difference in the two inflation measures is not a matter of a constant difference across all levels of inflation. A 1% change in CPI is correlated with only a 0.83% change in PCE. What this means is that the CPI measure of inflation is more volatile. When inflation is high the CPI measure will be considerably above the PCE measure and when inflation is low, the CPI measure could actually be less than the PCE measure. For example, a simple linear regression indicates the following:

	CPI	**PCE**
	5.0%	4.4%
	3.0%	2.7%
	1.0%	1.1%
June 2010 Actual	1.1%	1.4%

The June 2010 actual total CPI inflation rate was 1.1% which was below the 1.4% total PCE inflation rate, which is consistent with the results of the linear regression based on 50 years of history.

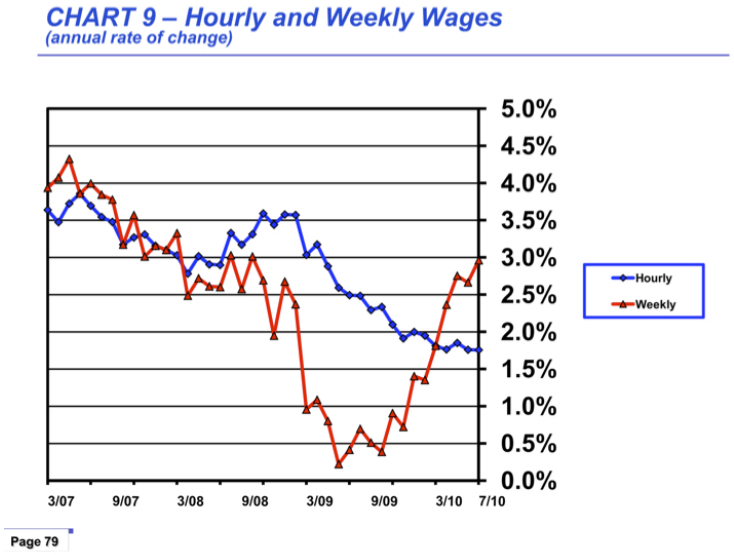
Commodity Prices. As a consequence of resource hungry developing countries, commodity prices have been rising much faster than other prices since 2001. However, labor costs are such a large component of total production costs that substantial inflation in commodity prices has had no practical impact on broader measures of inflation.

Import Prices. A decline in the value of the dollar should increase the price of imports. While in theory this could have an unfavorable impact on broader measures of inflation, in actuality changes in import prices tend to be relatively inconsequential for two reasons. First, imports account for only a small percentage of aggregate economic activity in the U.S., which means that even very large changes in import prices will have a limited impact on broader measures of prices. Second, in the short-run exporters frequently try to maintain the dollar price and absorb the change in the exchange rate in their profit margins with the result that changes in the value of the dollar do not show up in changes in import prices.

Wages and Employment Cost Index. Measures of labor costs and trends in these measures are important guides to trends in the broader price level. As nominal wages increase, consumer buying power increases, thus imparting an inflationary bias to prices. With respect to businesses unit labor costs reflect two-thirds of the cost of production. If these costs are rising, businesses will attempt to maintain profit margins by raising prices,

which also imparts an inflationary bias to prices. Of course, it is quite possible for nominal wages to rise and unit labor costs to fall. Generally the difference has to do with productivity. If productivity is high, unit labor costs can fall while nominal wages rise. This reduces the extent of the inflationary bias. A deflationary bias is only likely to take hold when positive changes in nominal wages are very small and unit labor costs are negative.

Chart 9 shows annual rates of change in hourly and weekly wages over the last three years for all employees as reported by the Bureau of Labor Statistics. Note that the rate of growth in hourly wages began to slow about one year after the start of the Great Recession. Over the last 18 months the hourly wage growth rate has fallen from 3.5% to 1.8%, still well above a level that would trigger significant risk of deflation. Also, notice that the growth rate in weekly wages has risen sharply since late 2009 and is nearly back to the level that prevailed prior to the onset of the Great Recession. This is the direct result of an increasing number of hours worked each week. Clearly, labor markets are very weak and employees have limited bargaining power. Also, it appears that employers at the moment are extending hours rather than hiring additional employees. All of this is indicative of a stabilizing, yet still weak labor market.



Over the last year total compensation per hour worked rose 1.1% compared to 2.1% in 2007, the year preceding the Great Recession. Also, reflecting both the slowing in the rate of compensation growth and increasing

productivity, unit employment costs fell 2.8% over the last year. Again, this is consistent with moderating inflation but is not yet signaling that deflation is an imminent threat.

Measures of Inflation Expectations. There are two types of expectations measures — surveys of consumers and professional forecasters and traded securities with inflation protection.

Reuters/University of Michigan surveys 500-700 consumers each month and asks them what they expect inflation to be over the next 12 months and also over the next 5 to 10 years. As might be expected, the 12-month measure is highly volatile and reflects highly visible recent events, such as a surge in oil and gasoline prices. However, the long-term measure has been extraordinarily stable over the last several years and has fluctuated very little from month to month. This measure has fluctuated in a narrow band around 2.5%. The Philadelphia Federal Reserve Bank conducts a quarterly survey of 30-40 professional forecasters and asks them what they expect the consumer price index (CPI) to be ten years ahead. This measure has also been remarkably stable over a long period of time and has averaged 2.5%. So the professionals and consumers pretty much agree.

When measures of long-term inflation expectations are added to measures of excess economic capacity they collectively help improve the forecast of core inflation over the next 12 months to a considerable degree. This suggests that many components of core inflation are relatively stable over time while others fluctuate more in line with oscillations in excess capacity. This in turn implies that core inflation is somewhat sticky, rising less and falling less in the aggregate than might be expected based on the size of the gap between aggregate demand and supply.

The U.S. Treasury issues Treasury Inflation Protected Securities (TIPS) in denominations of 5, 10, 20 and 30 years. The yield on these securities is indexed to the CPI inflation rate. At maturity the holder receives the higher of the original principal or the original principal indexed for inflation. TIPS provide a great deflation hedge because the holder never receives less than the original principal amount. Market inflation expectations can be ascertained by comparing the yields on TIPS to yields on equivalent maturity Treasury securities that do not have inflation protection. The spread on the 10-year maturities has fluctuated around 2.5% for the last several years. However, in recent months the spread has declined, which means the markets

is expecting lower inflation over the next several years.

5. Consequences of Deflation Would Not Be Pretty

Deflation raises the burden of debt for both consumers and businesses and squeezes business profit margins. Profit margins of businesses shrink as revenues fall because of price cutting but fixed expenses remain locked in. Debt is denominated in nominal dollars. When deflation takes hold wages and sales revenues decline but the cost of servicing debt does not. This means that a larger portion of income must be devoted to debt service. Inevitably some consumers and businesses cannot handle this forced restructuring of expenditures and defaults ensue. This in turn increases credit losses for financial institutions and collectively undermines the capital adequacy of financial institutions and weakens the financial system.

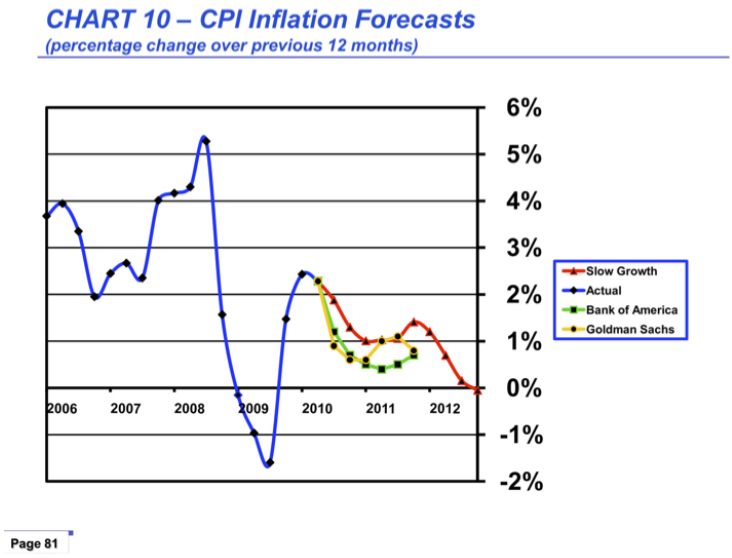
This process initiates a pernicious debt/deflation spiral. Debt defaults depress economic activity which leads to further income erosion and collateral values decline. This in turn leads to new debt defaults. And, so the spiral continues. It is possible, however, that deflation can be sufficiently limited in scope such that it does not trigger a pernicious debt/deflation spiral. Japan finds itself in this situation. By flooding the economy with enormous deficit spending, Japan has been able so far to contain, but not eliminate, deflation and in so doing has avoided a debt/deflation spiral.

6. Inflation Forecasts

Chart 10 shows forecasts for total CPI inflation including my slow growth scenario through 2012 and forecasts from Bank of America and Goldman Sachs through 2011. **Chart 11** shows forecasts for core PCE inflation from the same sources.

As of June 2010 CPI inflation had increased 1.1% over the prior 12 months. Given the large output gap and expected continued slow economic recovery, CPI inflation declines in all three forecasts. However, deflation does not occur, although my forecast approaches zero by the end of 2012.

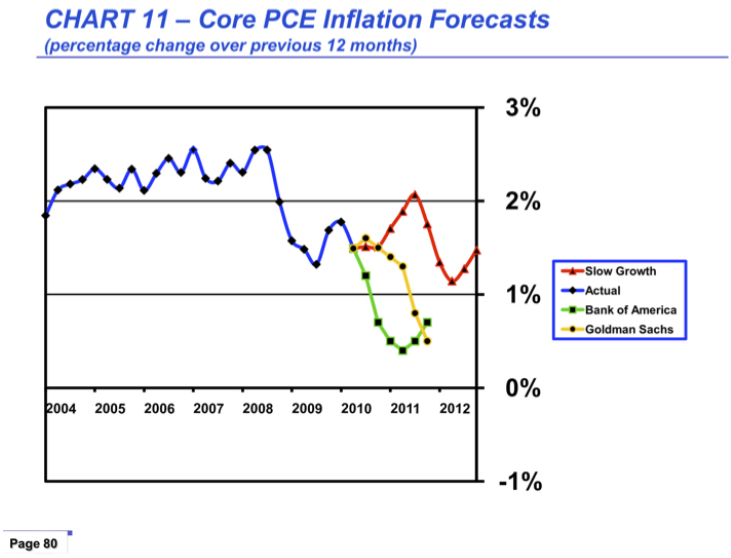
As of June 2010 core PCE inflation had increased 1.4% over the previous 12 months. The Bank of America and Goldman Sachs forecasts indicate



that core PCE inflation should decline to less than 1% during 2011, but importantly deflation does not occur. My forecast indicates that core PCE inflation should remain in a range between 1% and 2% through 2012. My forecast is derived from a statistical model and is subject to modeling errors. My overall sense is that both the Bank of America and Goldman Sachs forecasts entail reasonable pathways for inflation over the next 18 months that are more probable than the forecast derived from my statistical model.

My sense is that forecasts of moderating but still positive inflation are reasonable as long as the economy continues in a slow growth mode and avoids a double-dip recession. Also, my sense is that expectations will remain tilted in the direction of a return to somewhat higher inflation rates. Finally, another factor that is likely to limit a deflationary outbreak is a general reluctance to reduce prices or to wait as long as possible before doing so.

All of this could change if recession returns and nominal wages fall. This is not my expectation.



7. Conclusion

The onset of entrenched deflation is not currently a high probability event. Inflation measures will continue to trend downward in coming months and there could well be a period of time during which some the measures turn negative on a year over year basis. Such a development would not be troublesome if it were temporary because it will take time for deflationary psychology to take root.

However, having said that, downside risks to economic growth are considerable and policy errors could lead to a double-dip recession. While I do not think such an outcome is the most likely one at this juncture, it is a serious enough threat that close monitoring of developments is warranted.

If the economy does reenter recession and unemployment increases the likelihood of nominal wage decreases will rise substantially and such a development would hasten and perhaps ensure the emergence and entrenchment of deflationary expectations. If this were to occur it would change the "ballgame" in a lot of ways. So, let us hope that we continue to muddle through and that a weak recovery eventually gathers stronger momentum and that the brief flirtation with deflation is just that. Over the longer run, if the

problem of the ballooning federal debt is not addressed and contained, inflation will eventually reemerge as a significant threat, if not an actual problem.

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