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**Future Implications of Debt and Deleveraging in the
United States Economy**

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Future Implications of Debt and Deleveraging in the United States Economy

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Abstract.

This paper will take a broad based approach in analyzing the structure of the U.S. economy with a particular emphasis on the disruptive U.S. recession and financial crisis which began circa 2008. The role of the U.S. government and the implications high levels of fiscal debt have on the projected growth path of the U.S. economy will be the primary focus of the paper. The discussion will show that the U.S. has likely entered a new, much more difficult stage in its history of economic growth. The short to medium term growth potential of the U.S. economy has fallen below the trend level established since WWII. The flexibility of the U.S. economy will help foster the necessary adjustments; however, this new era will force difficult fiscal and monetary policy choices that have different implications for different section of the population. The policy makers must recognize the changing dynamics of the U.S. economy and they must be prudent in drafting policy that establishes a stronger foundation for future growth. Younger generations in particular will need to take notice of the decisions being made and plan accordingly as it relates to their spending, saving and investment habits.

JEL Classification E61, E65, H63

Keywords: Debt, Deleveraging, Deficit, Great Recession, Demographics

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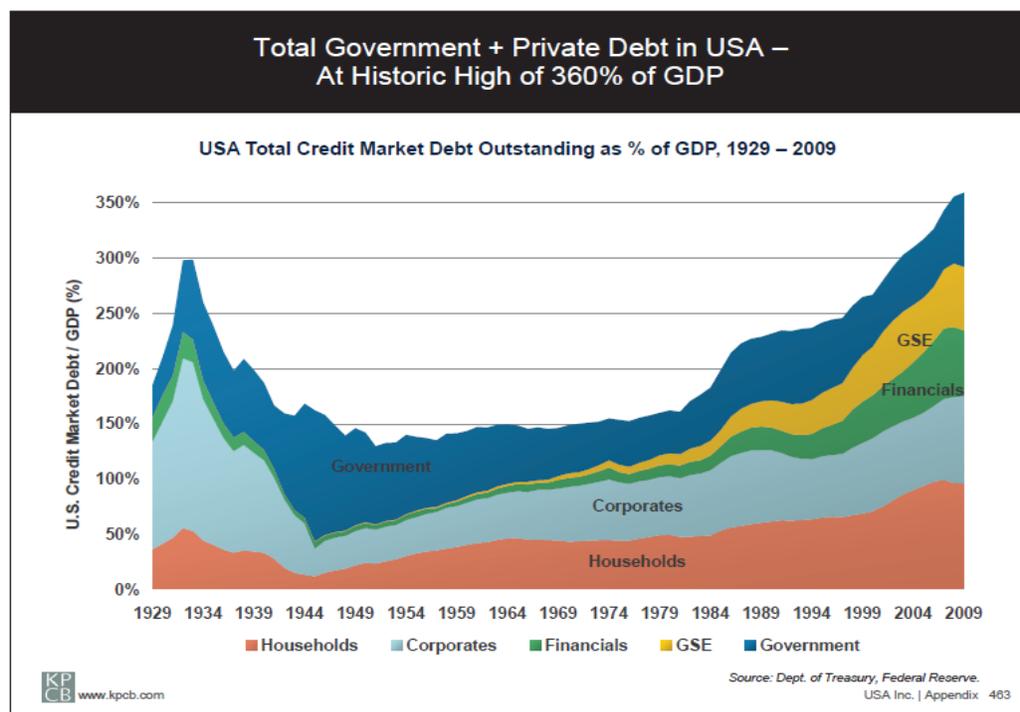
I. Introduction

This paper will take a broad based approach in analyzing the structure of the U.S. economy with a particular emphasis on the disruptive U.S. recession and financial crisis which began circa 2008. The role of the U.S. government and the implications high levels of fiscal debt have on the projected growth path of the U.S. economy will be the primary focus of the paper. The discussion will show that the U.S. has likely entered a new, much more difficult stage in its history of economic growth. The short to medium term growth potential of the U.S. economy has fallen below the trend level established since WWII. The flexibility of the U.S. economy will help foster the necessary adjustments; however, this new era will force difficult fiscal and monetary policy choices that have different implications for different section of the population. The policy makers must recognize the changing dynamics of the U.S. economy and they must be prudent in drafting policy that establishes a stronger foundation for future growth. The discussion will show that younger generations in particular will need to take notice of the decisions being made and plan accordingly as it relates to their spending, saving and investment habits.

The paper will start with a relatively brief but complete overview of the U.S. economy to help provide a framework for guiding future decisions of fiscal and monetary policy makers. The discussions on the economy and the role of government will be important in demonstrating how previous policies have potentially given the wrong types of incentives to consumer's, business' and governments as it relates to promoting the pillars of long run growth in real GDP. Figure 1 shows the basis for the discussions in this paper, and how the U.S. has likely borrowed some of the economy's future growth potential by using debt financing to keep the volatility in the business cycle low and growth in real GDP as close to trend (potential) as possible.

The stock of debt that can be accumulated by any borrower, including the consumer business' and the government are limited by that borrower's ability to produce sufficient income to pay back that debt, or at a minimum instill confidence in the lender to continue to provide funds to the borrower at economically viable rates. The combination of past policies, deleveraging and the stock of debt portrayed in Figure 1 have changed the playing field for effective policy making. The stabilizers that policy makers have had the luxury of providing the U.S. economy in times of economic stress will likely not provide the same type of positive economic impact or will simply not be there over the next decade as the U.S. and

Figure 1: Total USA Debt Levels



Source: Meeker, 463

other developed economies try to navigate in a world of large debt. The policy makers have a difficult balancing act, as the cost of not paying back some of the borrowed debt could have drastic negative long term consequences for growth potential in the U.S.

Section II will focus on the role of the consumer in U.S. economy. It will highlight the changing composition of GDP in the U.S. leading into the financial crisis and demonstrate the amount of consumer deleveraging that needs to take place following the financial crisis and recession of 2007-9. The financial crisis will be discussed briefly in the context of providing a background on the health of the U.S. consumer and imbalances that developed pre- and post-crisis. The economic backdrop will show that the U.S. consumer is not a likely source of additional purchasing power and growth over the coming years, and will not be able to offset the consolidation necessary at the fiscal level. This will provide context for Section III which will focus on the historical role of government in the U.S. This section will include an analysis of the historical sources of revenue and expenditures, as well as the debt burden of the government. The current body of knowledge regarding the implications for high levels of fiscal debt will be reviewed in Section IV. This general overview of the various agents in the U.S economy will

show the difficult road ahead for policy makers in trying to pay back some of the excess' of the U.S. debt binge. Finally the impact these various policy choices will have on the U.S. consumers will be discussed in Section V with a particular emphasis on the implications for the younger generation and how demographics amplify the need for imminent credible fiscal solutions. The paper will end with concluding remarks.

II. Consumption and Investment

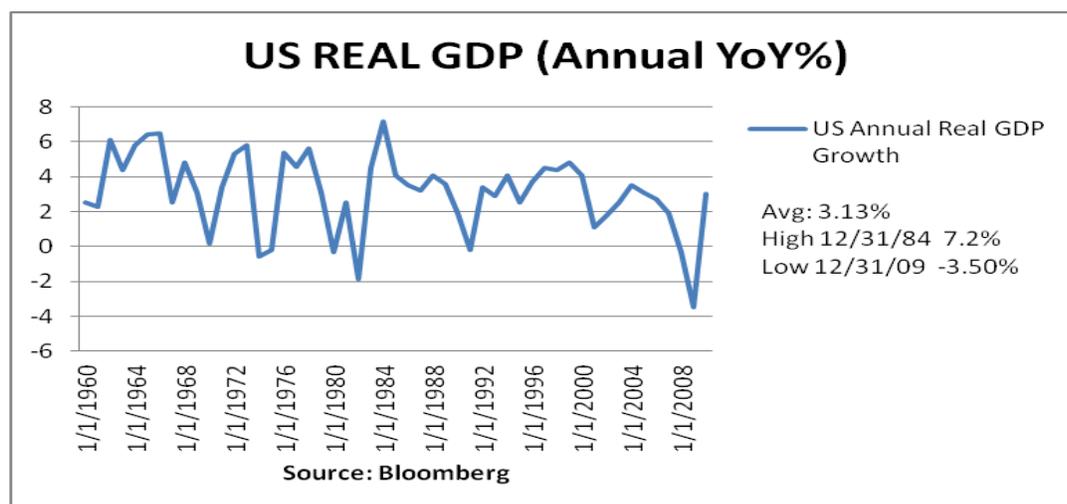
II.1 Real GDP and the Building Blocks of a Consumer Crisis

The basic building blocks of real GDP growth and a higher per capita standard of living for any economy, including the U.S., revolve around structural factors such as, population growth, savings rates, investment, political stability, openness to trade, and currency flexibility.

In 1960 U.S. real GDP measured in 2005 dollars was \$2.83 trillion. In 2008 prior to the U.S financial crisis real GDP measured \$13.162 trillion. Figure 2 shows the year over year growth rate in U.S. real GDP during 1960-2010. The average annual growth rate over this time period was a healthy 3.13%. However, beginning in the summer of 2007 the US and global economy was hit with what would turn into a series of negative financial and economic shocks that caused U.S. and world GDP to dive into a tailspin by the end of 2008.¹ In September 2007 U.S. GDP was growing at a 2.7% annual rate, and by June 2009 GDP was falling at a 3.8% annual

¹ For additional comments on the financial crisis and additional sources of information please see appendix B.

Figure 2

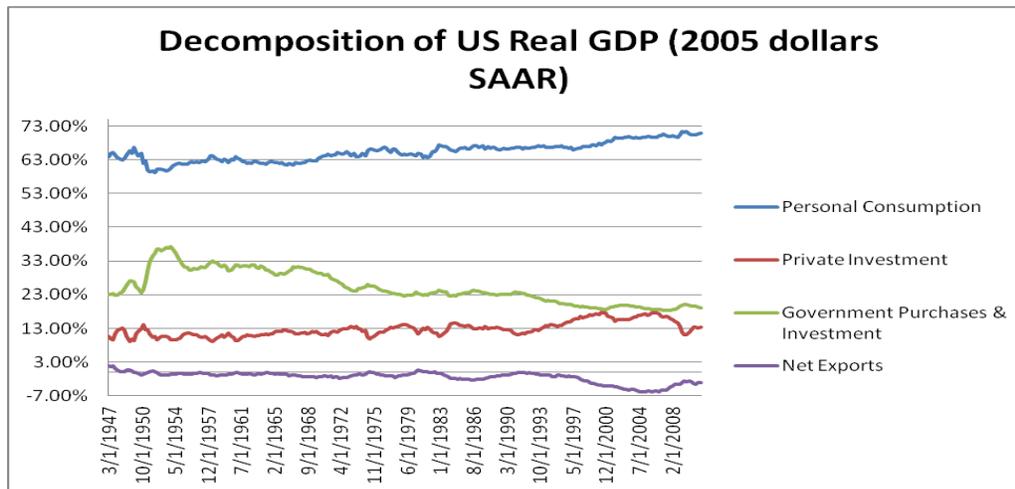


rate representing a 6.5% swing in the growth rate of GDP. According to the IMF's World Gross Domestic Product indices world GDP was growing at a 5.17% annual rate in 2007, however, by December 2009 was declining at a 1.06% annual rate, again over a 6% swing in just a two year time horizon.

In order to appreciate the structural drivers of the growth in U.S. GDP prior to the 2008 recession the composition of this growth needs to be decomposed and analyzed in conjunction with a number of other macro economic variables. This analysis starts with a decomposition of GDP.² Figure 3 shows the decomposition of seasonally adjusted real U.S. GDP. Consumption has continued to become a larger portion of U.S. GDP at the expense of government purchases, investment and net exports. The rise in consumption as a percentage of real GDP accelerated in the late 1990s and coincided with a continual drag on GDP from net exports.

² Note: Percentages do not always add up to exactly 100% due to rounding and estimation errors, although on average the total is within two percentage points of 100. Government purchases and investment do include tuition payments for higher education and charges for medical care but do not include transfer payments and interest paid by on government debt.

Figure 3



Source: Bloomberg, quarterly data

Table 1 shows a snapshot of this phenomenon using select data points from Figure 3. During this referenced period of increased consumption private investment was surprisingly resilient considering this period was associated with a fairly dramatic fall in the rate of savings as a percentage of disposable income (See Figure 4). Savings as a percentage of disposable income averaged 7.14% using quarterly data June 1952 through December 2011. The

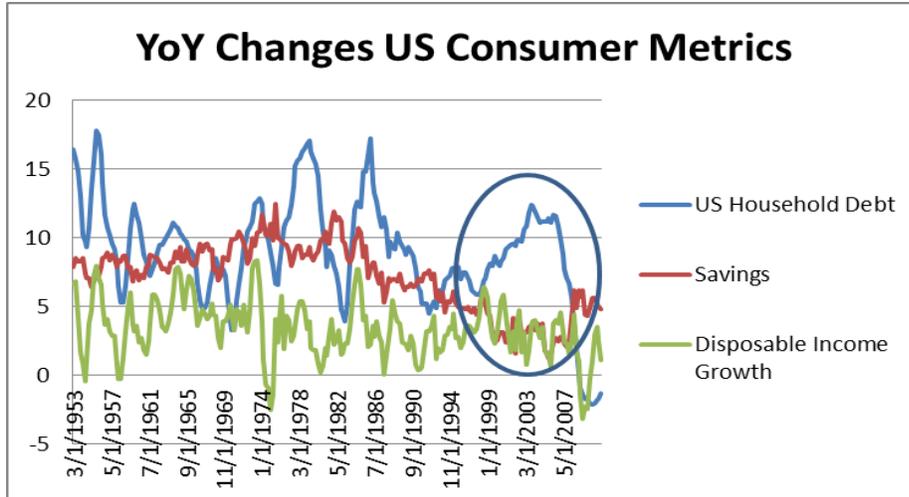
Table 1: Consumption and Net Export contribution to real GDP. Source: Bloomberg, quarterly data

<u>Date</u>	<u>Consumption</u>	<u>Net Exports</u>
Mar-90	66.00%	-0.80%
Mar-99	67%	-3%
Mar-05	69.50%	-5.70%
Mar-10	70.50%	-2.90%

average savings rate fell to 2.17% during 2005-2007.

The rise in consumption during a period of falling savings and steady private investment needs to be supplemented from some increase in income or availability of funds for the U.S. consumer. The obvious source would be an increase in wages or an increase in wealth against which the consumer could borrow funds to finance consumption.

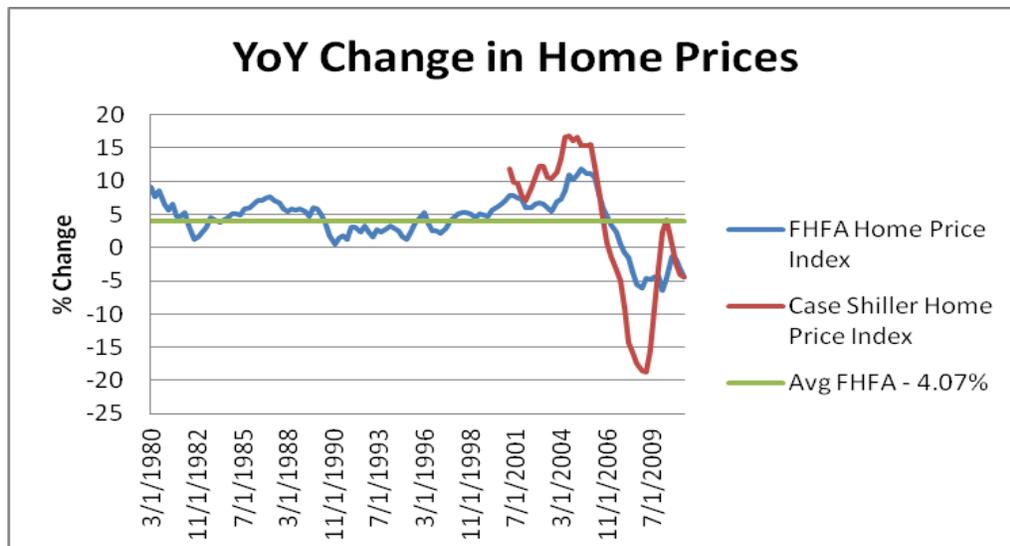
Figure 4 shows that the growth rate of disposable income in the U.S. was actually *falling* along with the savings rate while household debt continued to *increase*.
Figure 4. YoY changes, quarterly data.



Source: Bloomberg

with the savings rate while household debt continued to *increase*. The increase in household purchasing power via debt financing was possible as higher housing prices gave the consumer an appreciating asset to tap for funds to maintain a higher standard of living. (See Figure 5)

Figure 5



Source: Bloomberg

The charts and analysis above shows that debt financed consumption was fueling the growth rate of GDP leading into the financial crisis of 2007-9. However, as the economy grew the consumer needed to find the means to continue to try and finance a higher standard of living. The largest asset on the consumer balance sheet is typically a home, and as previous figures showed the home in the U.S. continued to increase in value after the turn of the century which allowed the consumer to use their increased net worth to extract additional income from the financial system. Table 2 shows the correlation coefficients between year over year percentage change in US Household net worth from the Federal Reserve Flow of Funds report and the year over year percentage change in home prices as measured by the FHFA home price index. As expected, the data shows a positive correlation between housing prices and net worth for the period 1997-2011. However, if we break the correlations into two separate periods it is important to note the correlations were not nearly as strong (even negative) during 1997-2001 which

Table 2

Net Worth & HPA Correlation Coefficients	
Date Range	Coefficient
3/1997-9/2011	0.52
3/1997-12/2001	-0.61
1/2002-9/2011	0.62

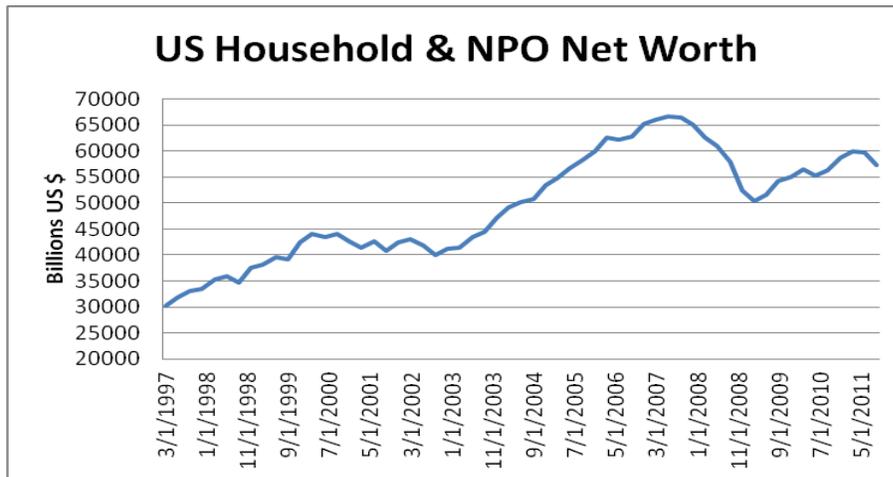
Source Bloomberg, FHFA, Federal Reserve

implies that net worth was increasing from other sources; specifically equity portfolios coinciding with the surge in stock prices from the dot.com bubble at the end of the 20th century. In fact, if you look at US nominal household and NPO net worth³ in Figure 6 there is a steady rise in net worth associated with the strong equity market 1997-2000.⁴ After the dot.com bubble net worth

³ Note NPO definition from Federal Reserve website: "Sector includes farm households, domestic hedge funds, private equity funds, and personal trusts."

⁴ On March 3, 1997 the S&P 500 closed at 795 and on 6/30/2000 it closed at 1454 representing an increase of ~83% over a ~3.25 year period, ~25% per annum.

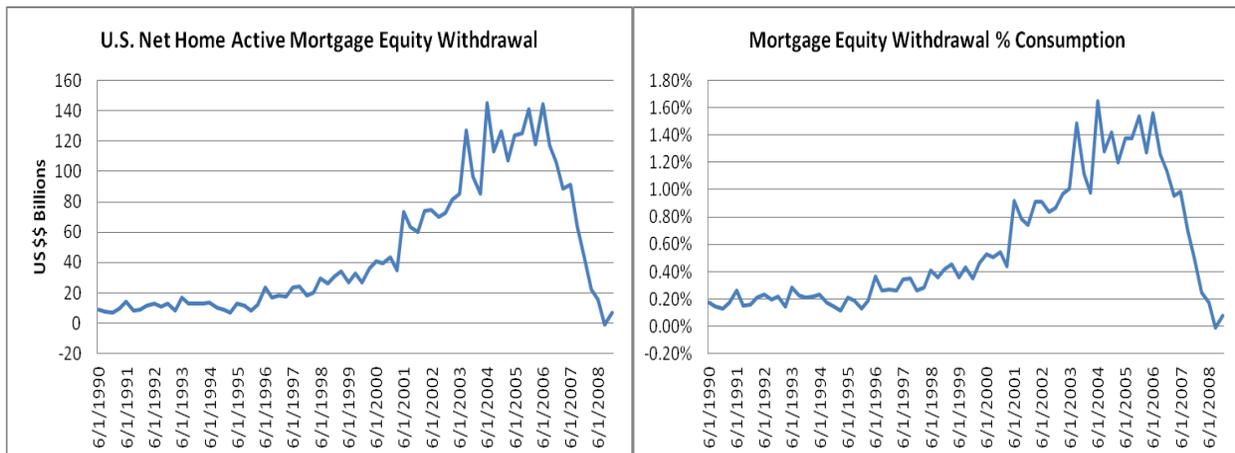
stabilized and started to fall following the September 2001 terrorist attacks. As home prices really started their exponential move higher starting around late 2002, US household and NPO net worth rebounded sharply erasing any loss in paper net worth from the weak equity market at the start of the 21st Century. Figure 7 outlines the extent of the consumption power garnered by Figure 6



Source: Federal Reserve, Bloomberg

the U.S. consumer via their increasing housing net worth. The charts show the aggregate amount of mortgage equity withdrawals as well as the amount those equity withdrawals represented as a percentage of real U.S. consumption. These charts continue to demonstrate

Figure 7



Source: Federal Reserve and Bloomberg

that the health of the largest sector of the U.S. economy (consumer) became increasingly tied to the U.S. consumer's net worth and more specifically U.S. housing prices.

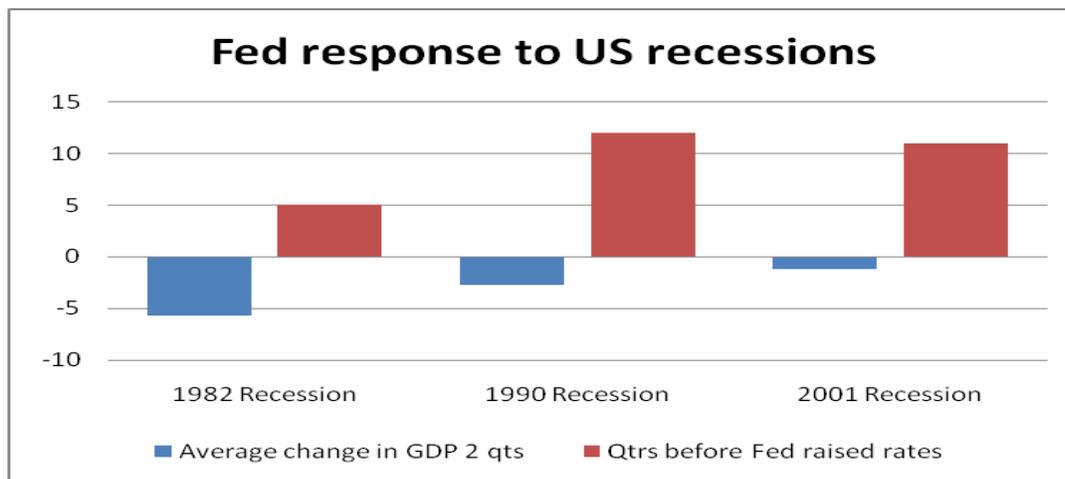
Prior to discussing what the consumption analysis above means for the U.S. economy post-recession, it is important to ask what structural factors in the U.S. and global economy made it possible for the U.S. consumer to continue to attract debt financing at attractive interest rates. Without an increase in paper wealth via higher housing values the average U.S. consumer did not have the personal savings or income growth to service their increasing debt burdens. A casual market observer would expect this type of unstable backdrop to lead to a higher cost of funds for consumer loans given the higher probability of default. Why didn't that happen? A combination of easy monetary policy by the Federal Reserve Bank (Fed) and perhaps more importantly a global savings glut helped keep the cost of financing low for the U.S. consumer despite the higher levels of risk.

The Fed uses short term interest rates as their main policy tool in order to achieve their dual mandate of price stability and maximum employment. The U.S. financial system acts as the transition mechanism for Fed policy "passing" through the cost of funds set by the Fed into the economy via the cost of credit including interest rates on corporate debt, government bonds, and consumer loans. The capital markets, which include retail and institutional investors, also help regulate the cost of funds in the economy by determining the appropriate risk premium⁵ that should be used on various instruments in the bond market, usually expressed as a spread over the risk free rate.

The interaction of the Fed, the capital markets and the flow of funds across the global economy can help explain how the U.S. consumer was continually able to finance consumption

⁵ Risk premium could include a spread over the risk free rate for default risk, interest rate risk, and future inflation expectations, among other factors.

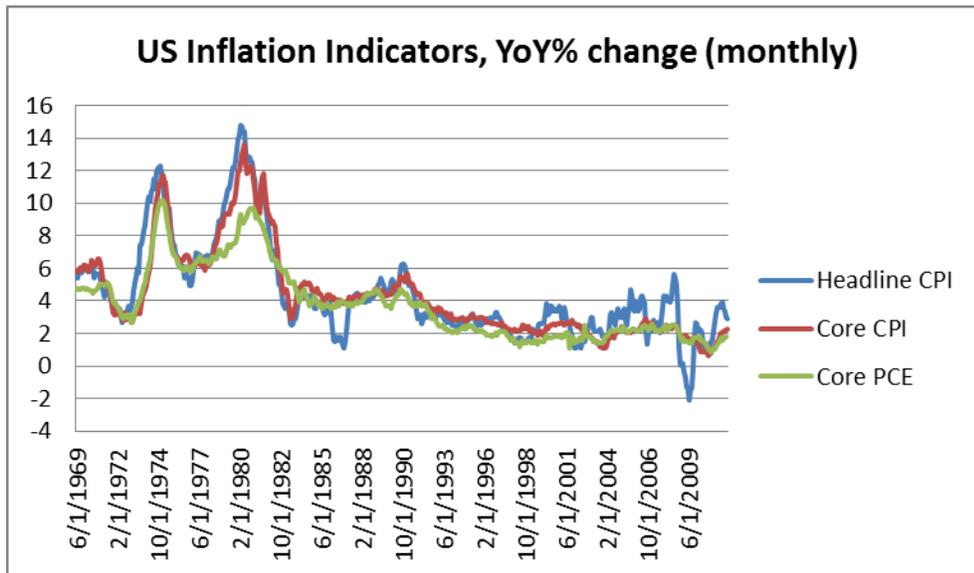
Figure 8



at a very low cost of funds, especially when taking into account the increased amount of leverage used throughout the U.S economy. Figure 8 shows a recent history of how the Fed has used the change in the Federal Funds rate to help ease the U.S. economy through recessions. In 1982 the Fed was raising interest rates just five quarters after the onset of the recession. The Fed seemed to change their behavior during the 1990 and 2001 recession as they waited over 10 quarters after the onset of the recession prior to raising the Fed funds rate. The extremely tame inflation rate in the U.S. following the Volker years in the early 1980s (see Figure 9) helped give the Fed the flexibility to keep the Fed Funds rate low for a longer period of time following recessions - in other words they were given the luxury of giving more weight to their employment mandate and sacrificing some of their focus on the inflation mandate.

The easy monetary policy of the Fed translated into lower short term interest rates for a longer period of time. However, the Fed's policy tool, the Fed Funds rate, does not directly influence long term interest rates. In fact, as the Fed followed easy monetary policy for a longer period of

Figure 9



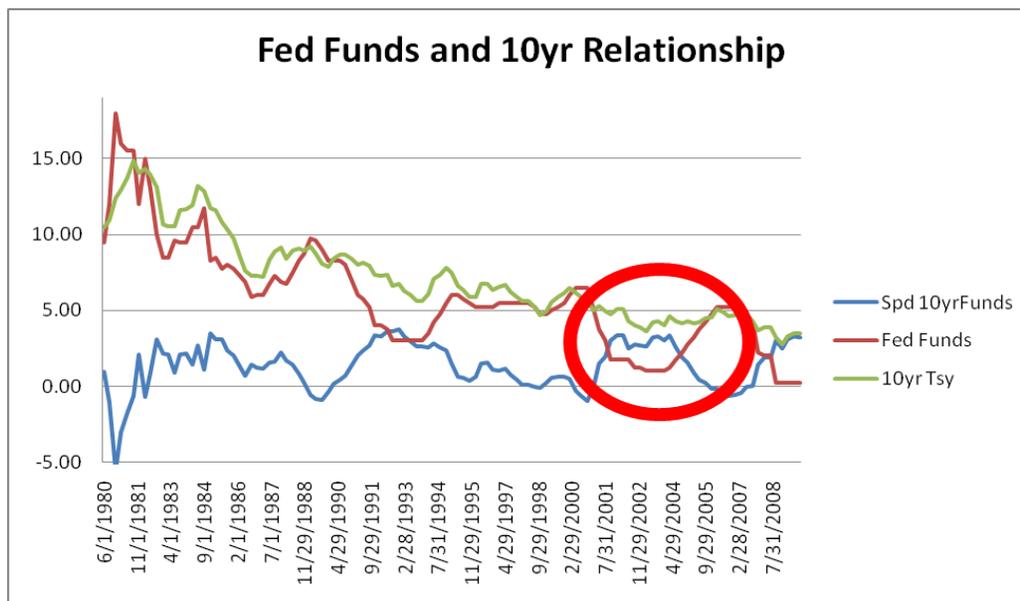
Source: Bloomberg

time some market observers would argue that longer term interest rates should actually rise to account for the increased risk of higher inflation in the future.⁶

Many Fed critics suggested that despite the favorable inflation backdrop, if the Fed would have tightened policy earlier after the 2001 recession some of the excess' in the US housing market could have been avoided. This implies that Fed policy must have had some effect on mortgage rates, which are tied to the longer end of the US Treasury curve, more specifically the 10 year Treasury rate. Figure 10 shows the quarterly average of the 10 year Treasury rate, the Federal Funds rate and the spread between the two rates for 1980.3-2009.4. The red circle on the chart outlines the period leading up to the financial crisis, and what

⁶ Higher inflation would result from the Fed's inability to reign in an easy monetary policy in a timely fashion in response to a strong increase in demand as the economy recovered from recession

Figure 10



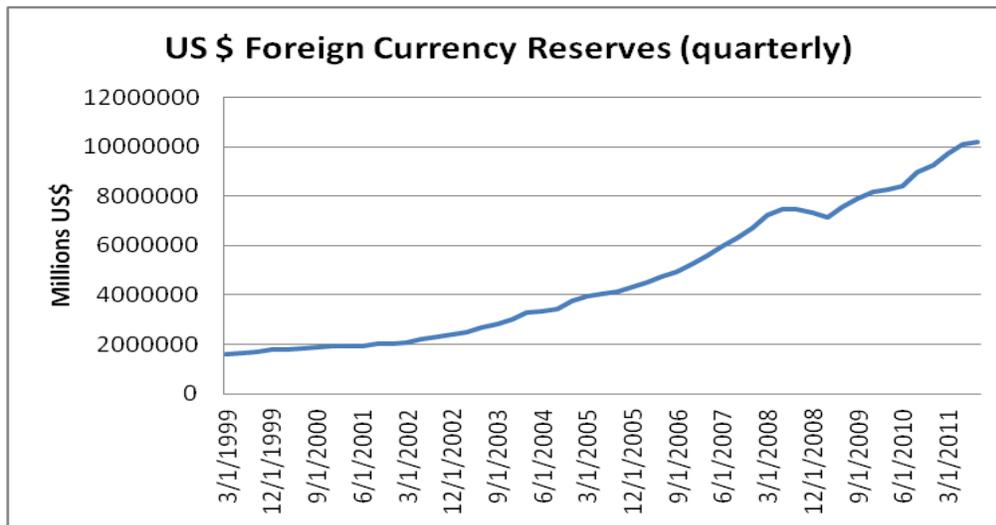
Source: Bloomberg, Fed Flow Funds

Alan Greenspan was famous for calling the interest rate ‘conundrum’. As the Fed raised interest rates between 2004-2006 in response to the rise in oil prices and the threat of inflation the 10 year treasury did not move as expected. Fundamentally, if the Fed was fearful of inflation and raising rates in anticipation of higher inflation, investors should have been demanding higher term premium for each unit of duration in the Treasury bond market and the 10 year Treasury rate should have risen. Between June 2003 and July 2007 the Federal Funds Target went from a low of 1% to 5.25%, while the 10year treasury rate went from a 3.62% to a 4.26% respectively. As the Fed Funds rate increased by 425 basis points⁷ the 10 year Treasury only increased by 64 basis points. This analysis shows that the tighter policy of the Fed prior to the onset of the crisis did not translate into higher long term interest rates. Other factors outside of the Fed’s focus on short term interest rates were influencing the cost of funds on the longer end of the yield curve.

An alternative way of thinking about Greenspan’s “conundrum” is what outside factors were driving the demand for long term US Treasury securities? Figure 11 shows the amount of US \$

⁷ 1 basis point is 1/100 of 1 percentage point. (.0001)

Figure 11

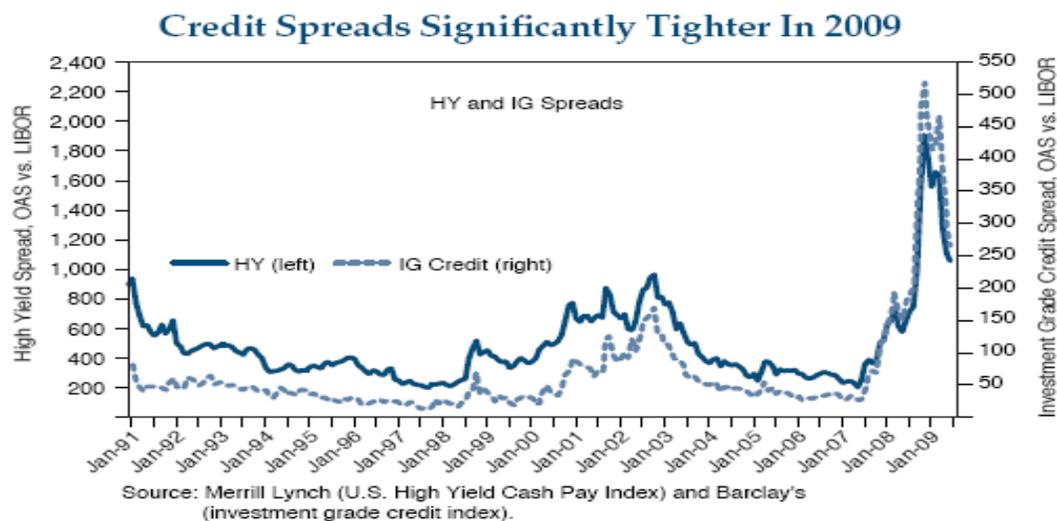


Source IMF and Bloomberg

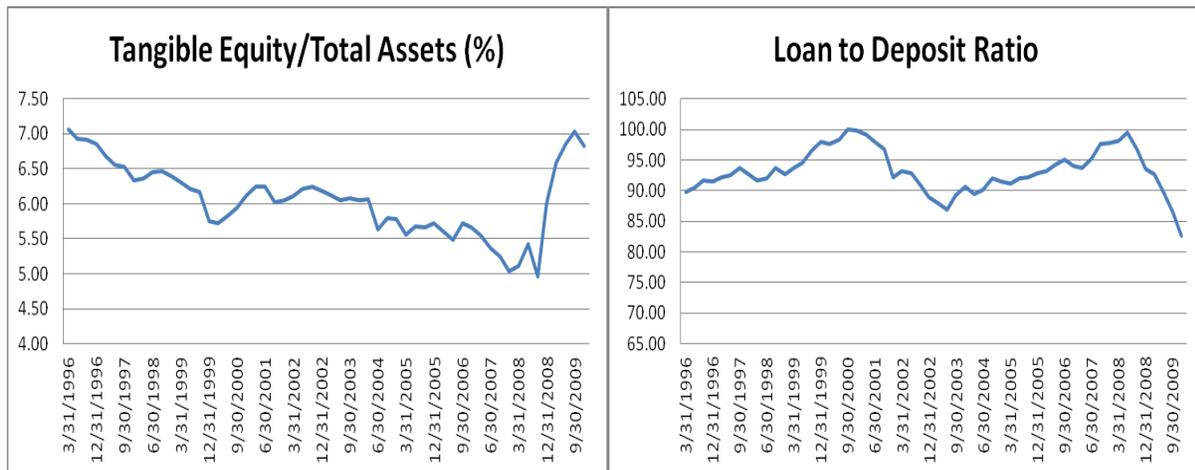
foreign currency reserves as per the IMF. The amount of US \$ foreign currency reserves started to rise dramatically in 2003, with a 68% cumulative growth rate during June 2004-March 2008. This increase in US \$ reserves had to be invested somewhere around the world, and the deep and liquid US Treasury market turned out to be one of the beneficiary of this increase in US \$ reserves abroad. A large proportion of these reserves were held by China as a result of the US trade imbalance with China, as well as by oil exporters following the rise in oil prices between 2003 and 2008.

In addition to Treasuries, a large number of other sectors were beneficiaries of this increased demand for dollar assets including U.S. dollar denominated fixed income securities which include corporate bonds and mortgaged backed securities. Figure 12 shows option adjusted credit spreads for both U.S. investment grade and high yield debt securities 1991-2009. Credit spreads became significantly tighter starting in 2002, reaching the lowest risk premium just prior to the onset of the financial crisis and U.S. recession in 2007.⁸

⁸ A lower spread (lower risk premium) implies the investor in the bond perceived a lower risk of default

Figure 12: Historical credit spreads**Chart 1**

The combination of easier Fed monetary policy and an excess supply of US dollar funds looking for return in US dollar denominated assets resulted in a contraction in risk premium. Meanwhile, the fundamentals of the U.S. economy were deteriorating as the largest contributor to aggregate income, the U.S. consumer, was forced to supplement falling wages and falling savings with debt financing. The cost of that debt financing did not properly account for the increasing level of default risk as excess supply of dollars abroad were recycled back into U.S. capital markets in search of higher return. Large U.S. financial institutions were the intermediary between the demand for funds from U.S. consumers and the supply of cheap funding through the Fed and abroad. This dynamics resulted in a U.S. financial system that was over-leveraged and significantly tied to the performance of the U.S. housing market. Figure 13 demonstrates the deterioration in the health of the U.S. financial system throughout this leveraging process in the U.S. economy. Tangible equity as a percentage of total assets was falling and the loan to deposit ratio was increasing, hitting one at the onset of the financial crisis. A loan to deposit ratio of one implies for every dollar of deposits the bank had a dollar of loans. A high loan to deposit ratio implies banks were forced to seek additional funding for the loans via the wholesale market, issuing financial debt at tight spreads to yield hungry US dollar investors.

Figure 13: US Bank Financial Health Ratios

Source: SNL Financial⁹

The charts above suggest that the financial industry was not properly regulated and that lack of regulation was one reason the financial crisis was so severe when housing prices did, in fact, start to fall.

II.2 Suggested Policy Actions

In order to prevent similar crisis in the future, the regulators of the Fed, the OCC, and the FDIC should be given the power to implement strict leverage restrictions on the banks in the U.S. financial system. Basel III¹⁰ has already begun to address this issue by requiring banks to focus on the percentage of their tangible common equity versus risk weighted assets which discourages banks from taking on a disproportionate amount of assets on the balance sheet without the corresponding equity cushion. The analysis also suggests there is a danger in using risk weighted assets, and perhaps a maximum total assets/total tangible equity ratio (leverage ratio) should be enforced to keep the size of bank balance sheets in check during lending booms. However, these regulations must also be careful not to impede liquidity within a well

⁹ Note: The Aggregates are size weighted, calculated by consolidating all companies into a single entity.

¹⁰ Basel III is a global regulatory standard on bank capital adequacy and market liquidity risk aimed at increasing requirements on bank liquidity and bank leverage

functioning U.S. capital markets system and allow banks to continue to be profitable so that credit flows properly throughout the system. This is quite a balancing act. The Dodd-Frank Wall Street Reform and Consumer Protection Act¹¹ has tried to address this issue. The discussions above indicate that policy makers should focus on the size of equity cushions relative to assets when drafting these policies and put automatic restrictions on banks in terms of returning equity capital to shareholders when they are in violation of these policies. This type of policy would help enforce increasing countercyclical capital buffers at U.S. financial institutions.

. There are a few conclusions that are important to keep in mind as the paper moves from focusing on the U.S. consumer to the role of U.S. government. Starting in 1980 consumption continued to become an ever increasing part of aggregate U.S. income. As the economy entered the 21st century, the consumption sector became increasingly dependent on cheap debt financing, and that debt burden was not supported by an increase in disposable income, wages or savings at the consumer level. The debt taken on by the consumer was arguably financed at artificially low interest rates as a result of easy Fed policy, and perhaps more importantly an ever increasing supply of U.S. dollar foreign currency reserves in search of higher yield. This shaky fundamental backdrop left the U.S. economy and financial system susceptible to a shock should asset values, in particular housing values, begin to decline. As housing values fell and the financial system froze, U.S. GDP declined as the consumer retreated.

The major take away from this analysis is that it will be very hard for the consumer to lead an economic recovery given the amount of debt reduction that needs to take place following the collapse in net worth tied to housing prices. The speed of this deleveraging process will be tied to a recovery in U.S. household savings, which in turn will be linked to the U.S. employment backdrop and prospect for increase in disposable income at the aggregate level of the economy. The speed of recovery in the U.S. housing sector will also be an important factor in determining the success of the recovery at the consumer level. The next section of the

¹¹ “ The Act implements financial regulatory reform sponsored by the Democratically controlled 111th United States Congress and the Obama administration. Passed as a response to the late-2000s recession, the Act brought the most significant changes to financial regulation in the United States since the regulatory reform that followed the Great Depression,[2][3][4] representing a significant change in the American financial regulatory environment affecting all Federal financial regulatory agencies and almost every aspect of the nation's financial services industry.”

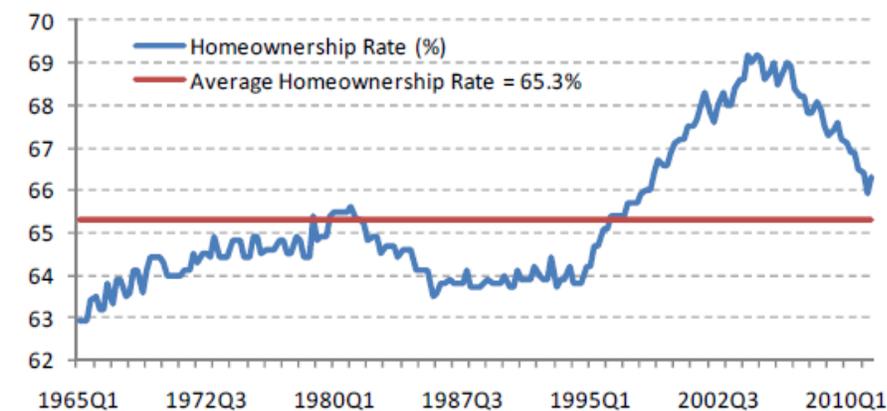
paper will show that this consumer deleveraging process is likely to take time especially given a potentially falling level of fiscal resources to help offset these headwinds.

II.3 The Current Status Quo: Challenges in Housing & Employment

So where does this leave the potential growth path of the U.S. economy? Can the U.S. economy return to a trend growth rate in real GDP of 3%? The answer to this important question is complex but the data can help provide us with a roadmap to the various possibilities. The chance of the U.S. consumer driving a new cyclical upturn in GDP seems remote, at least for the next five to ten years. The deleveraging process will be painful as the U.S. consumer works to repair their balance sheets and recover from the sudden, drastic drop in housing prices. The negative feedback loop created from the sharp drop in home prices is likely to keep housing construction well below cyclical norms and the excess supply of homes resulting from distressed sales will likely keep home prices from staging a comeback over the next five years.

The mortgage credit team at Citi expects home prices to fall close to another 10% from the beginning of 2012 to the eventual trough. (Hayre 2011)¹² They estimate that the excess distressed inventory will take approximately five years to clear the market assuming an extrapolation of the fall in the home ownership rate in the U.S. (See Figure 14)

Figure 14: US Home Ownership Rate



Source: US Census Bureau, Citi

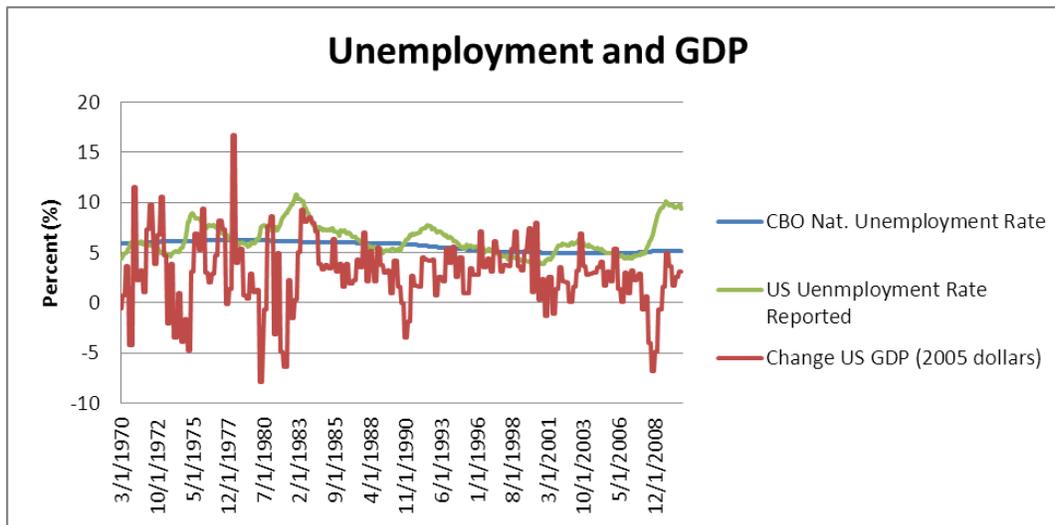
¹² The report notes “cumulative drop in the Case-Shiller National home price index as of Q3-2011 is 30.8%.

The speed at which the U.S. consumers will be able to recover will depend on their ability to increase their net worth away from housing, rebuild their personal balance sheets and increase consumption. The consumer will be forced to revert to traditional forms of wealth creation including increasing employment, wages, savings and increasing productivity. The following section will study the unemployment situation in the U.S. following the 2008 recession and show how it will act as a headwind to a consumer driven recovery.

In an economy driven by consumption, the unemployment rate is probably one of the most tracked and discussed economic indicator. The Federal Reserve uses the unemployment gap, which measures the difference between the unemployment rate and the natural unemployment rate¹³, as a key indicator in helping to determine the appropriate monetary policy in the U.S. Structural forces in the economy can move the natural unemployment rate and therefore change the proper course of monetary policy for a given level of unemployment. The Taylor Rule and Phillips curve are two popular macroeconomic models that try to explain the tradeoff between inflation and employment. The theory tells us that monetary policy can achieve a lower rate of unemployment by accepting a higher level of inflation and vice versa. The Beveridge curve also tries to explain employment by trying to relate a given number of job vacancies to unemployment, whereby a higher number of vacancies leads to a lower unemployment rate and vice versa. These models are useful as long as the relationship between vacancies, employment and inflation stay consistent over a relatively long period of time. However, major shocks to the economy, such as the U.S. financial crisis and recession in 2007-2009 can reveal structural changes in these economic relationships. Following the Great Recession, it appears that at least some of the increase in the unemployment rate is a result of skill mismatches and excess's in certain sectors of the economy which translates into a higher natural rate of unemployment in the U.S.

Figure 15 shows the historical relationship between the change in real GDP, the reported U.S. unemployment rate and the Congressional Budget Office's (CBO) estimated natural rate of unemployment. The chart shows periods associated with U.S. recessions, such as the early 1980s and 1991, where the US unemployment rate jumped above the reported natural rate of

¹³ The natural rate of unemployment is also commonly referred to as the Non-Accelerating Inflation Rate of Unemployment (NAIRU). The natural rate of unemployment measures the rate of unemployment in the economy when the economy is operating at full potential.

Figure 15¹⁴

Source: Bloomberg

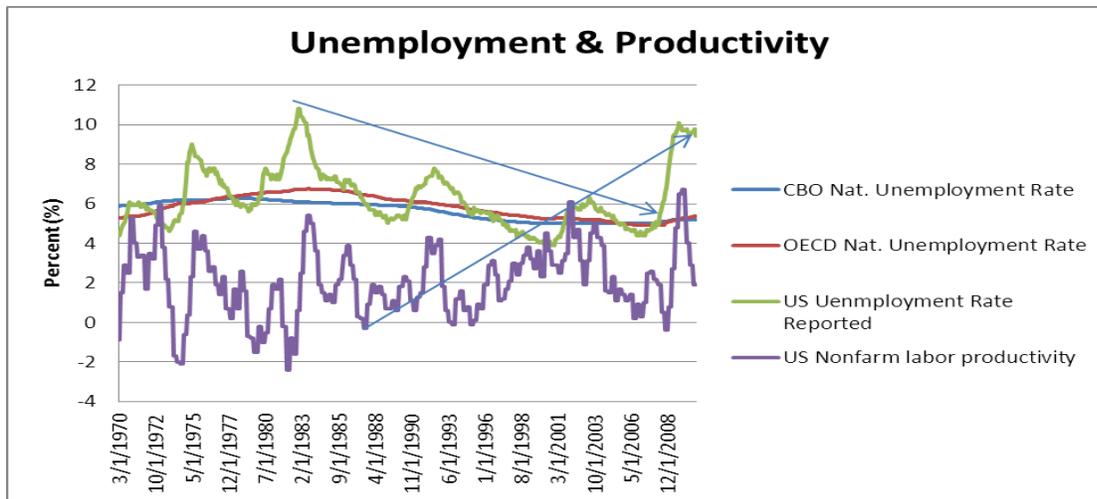
unemployment. In each instance the recovery in U.S. real GDP helped bring the unemployment rate back in line, or even below, the estimated natural rate. The most recent jump in the unemployment rate is similar to the spike in the early 1980s. However, in the early 1980s the U.S. economy did not have some of the excess' to work off such as the large increase in debt and drop in housing prices discussed above. The chart and table above suggests that the natural rate of unemployment may have recently trended higher in the U.S. Weidner and Williams of the San Francisco Fed (2011) suggest that the natural rate of unemployment likely falls between 6.5% and 8.3%.¹⁵ An analysis of the recent unemployment data in the U.S. below suggest that the road to the new natural rate of unemployment will likely be difficult when compared to previous post WWII recoveries.

¹⁴ Both the CBO natural rate of unemployment and the change in US GDP are reported on a quarterly basis. The data was converted to monthly data using Eviews to match the monthly reporting period of the US unemployment rate.

¹⁵ This range is well above the end of 2010 estimates from the Congressional Budget Office and Organization for Economic Co-operation and Development which were 5.2% and 5.38% respectively.

The Bureau of Labor Statistics (BLS) provides a number of detailed data points on the U.S. labor market which can help paint a picture of the severity of the unemployment situation in the U.S. Figure 16 shows the large increase in productivity in the 1990s that coincided with a

Figure 16



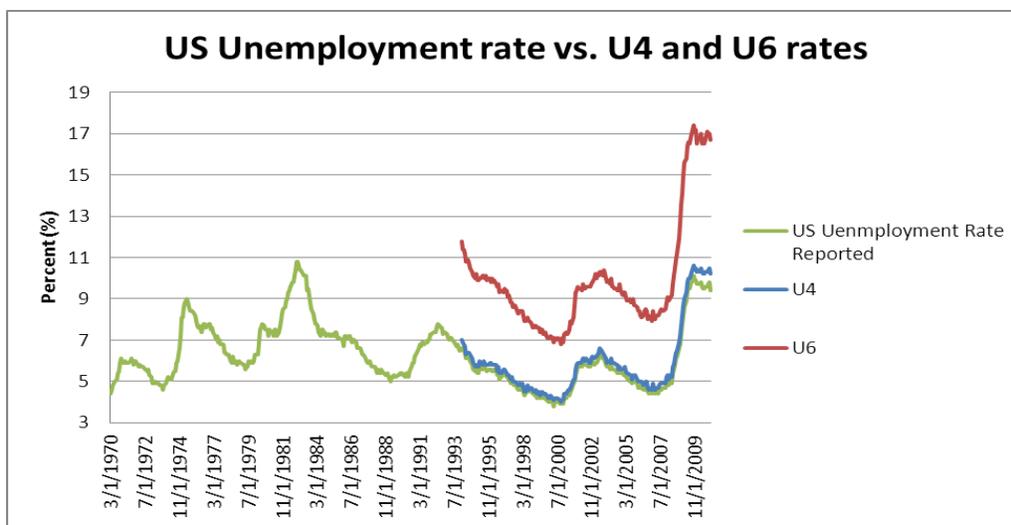
Source: Bloomberg & BLS

steady drop in the reported and estimated natural rates of unemployment in the U.S. However the most recent spike in the U.S. unemployment rate did not subside as productivity rose following the 2008 recession. This dichotomy suggests that post-recession corporations may have maximized their profit in the new economic environment by shedding employees and maximizing the output per hour worked of the smaller workforce. The implications that this has for the future can be interpreted in two ways: a) if the economy does recover back to trend growth it may be hard for corporations to increase profits further without adding more labor – this is one of the few bright spots found in the current data, or b) if the economy does not fully recover, it will be tough for corporations to squeeze additional profits via labor force reductions which could mean lower profits leading to a new negative feedback loop and potentially higher unemployment.

The labor market equilibrium is determined by the supply of labor represented by individuals entering the work force and demand for labor represented by firms' demand for units of labor for production. The unemployment rate is driven by the flow variable in this equilibrium which represents how efficient the economy is at matching unemployed workers with vacant

positions at firms across the economy. The matching function becomes more efficient with inventions in matching productivity such as recruiters and job websites (e.g., monster.com). However, despite these increases in matching productivity, the matching function and job separation rate can still be disrupted by skill mismatch (firms have vacancies but demand workers of different skillsets versus those workers that are unemployed) or the inability of skilled workers to move to those areas of the country with opportunity (The link between the employment problem and the housing problem). Beginning in 1994 the BLS began to release the U4 and U6 unemployment rates. Figure 17 shows the reported U.S. unemployment rate as well as the U4 and U6 measures from the BLS. The U4 rate adds discouraged workers to the unemployment rate. The U6 rate includes all discouraged and marginally attached workers as well as all workers working part time for economic reasons.

Figure 17:

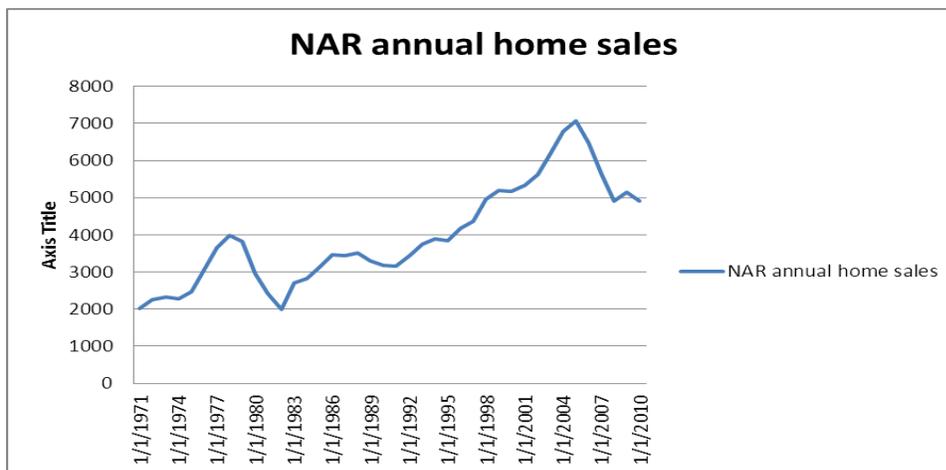


Source: Bloomberg

The spike in the difference between the U6 rate and reported unemployment rate suggests there are plenty of willing workers in the US economy that remains involuntarily unemployed. This suggests the matching function is broken due simply to the lack of availability of jobs in the market. A study of which segment of the population is unemployed and the average length of time of unemployment can help give clues as to how long the workers included in the U6 rate may be searching for a job. Prior to analyzing that data, there is another probable explanation for the inability of available workers to find vacancies in the job market.

Figure 18 shows annual existing home sales from the National Association of Realtors. The chart shows a very strong upward trend in the annual rate of homes sales in the U.S. since the 1980s followed by a significant drop in recent years. As home ownership increased in the U.S. and prices continued to rise it was fairly easy for unemployed workers to relocate to find work opportunities as they usually had equity in their homes and the time it took to sell a property was rather short. In this type of “liquid” housing market the cost benefit analysis for the employee is rather simple as the employee

Figure 18



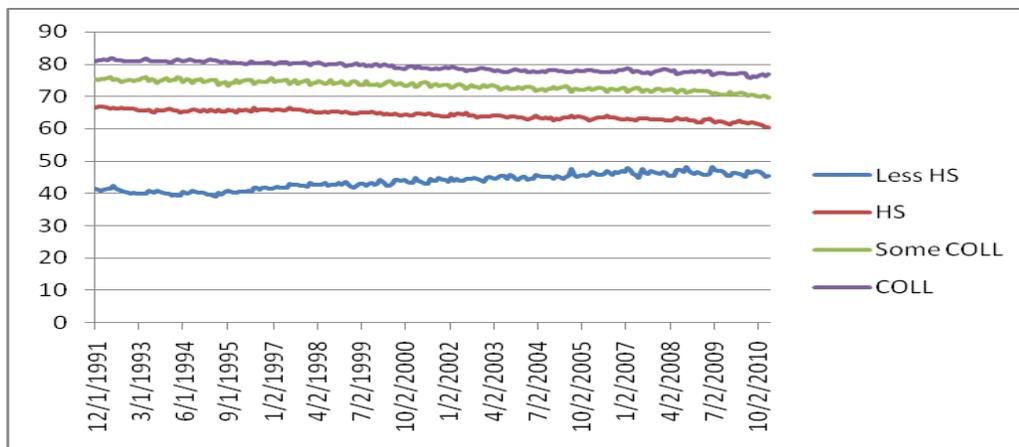
Source: Bloomberg

analyzes if the cost of moving, encompassing mostly time and inconvenience, is outweighed by the benefit of moving to an area with a higher number of vacancies or a vacancy that represents increased wages and opportunity in the workplace. However, the current housing dynamic introduces an entirely different cost variable as many unemployed workers are now underwater on their mortgages suggesting an even higher cost to moving as the unrealized loss on the home has to be factored into the cost of relocating. There is little doubt this phenomenon hinders efficient matching such that an unemployed worker could have a difficult time relocating to a region of the U.S. with better employment opportunities. Therefore, a recovery in housing could do nothing but help reduce the unemployment rate and suggests those unemployed due

to lack of mobility should be able to find work as the housing market recovers. Unfortunately, the housing recovery will not be swift and therefore will not likely provide a boost to the employment picture in the U.S anytime soon.

The employed and unemployed population can be broken into various demographic subsets which can provide indications on where resources should be devoted to help improve long run employment prospects. Figure 19 below shows the difference in labor force participation rates based on education. The chart shows more education results in higher rates of participation. Since 2000, the graph shows slowly decreasing participation rates at the three higher levels of education and slowly increasing participation rates in the group

Figure 19: Labor Force Participation Rates & Education

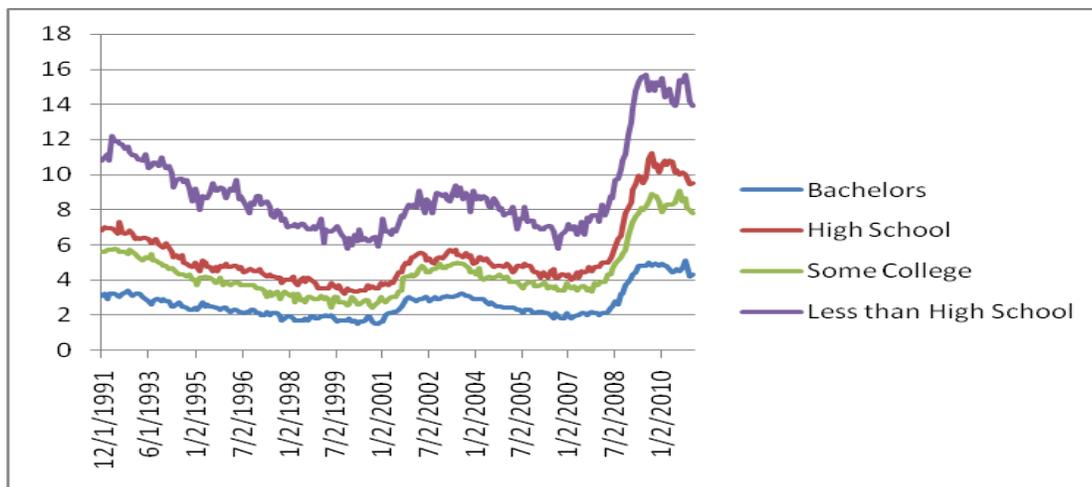


Source: Bloomberg

with the lowest level of education. As the U.S. economy has shifted to more service and less manufacturing the demand for workers with more education has increased. Furthermore, it is likely these highly skilled workers possess skillsets that are transferable between various service focused industries. The danger of this developed economy service driven labor market is that those workers with less education are likely in industries which have much higher rates of unemployment, and these workers likely have specific skills that are not as easily transferable between industries and more easily replicated by advances in technology. This education mismatch problem is exacerbated by a higher labor force participation rate among the less educated workers.

The unemployment rate of workers with lower rates of education has risen dramatically since 2009, and leveled off at very high rates (Figure 20). Working segments with higher education levels have lower unemployment rates. The unemployment rate of people with bachelor's degrees is close to the natural rate of unemployment, while people without a high school diploma have an unemployment rate of almost 16%. The three categories of workers with less than a bachelor's degree experienced faster and steeper rises in unemployment as a result of the 2008 U.S. recession. The data confirms that the demand for labor has shifted to

Figure 20: Unemployment Rates & Education



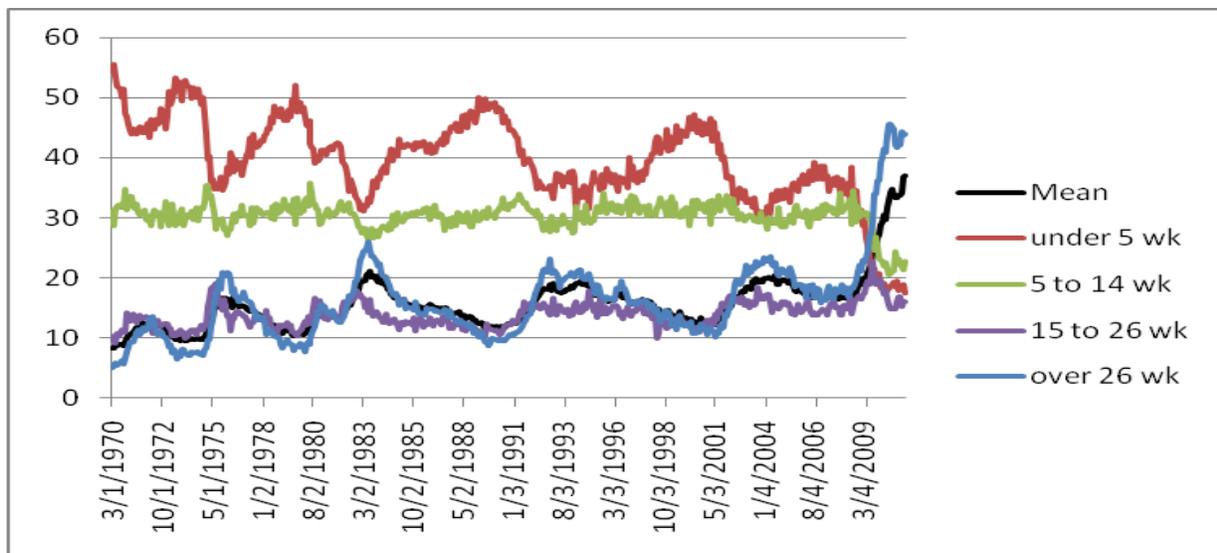
Source: Bloomberg

more skilled labor that cannot be supplied by people with less education. This highlights the importance of education in a developed, technologically advanced economy like the U.S. The importance of education and the lack of success in this field will be discussed in more detail later in the paper.

Another piece of labor market data that helps demonstrate the extent of the mismatch problem in the U.S. labor market is Figure 21¹⁶, which shows the average duration of an unemployed worker in the U.S. over time as a percentage of the unemployed population. The sharp rise in the percentage of unemployed workers out of work for over 26 weeks is extremely

¹⁶ The link between demographics, net worth and the unemployment backdrop is discussed briefly in appendix C.

Figure 21



Source: Bloomberg

discouraging. Using data since 1970 the chart shows that during past recessions the largest percentage of unemployed workers had not spent more than fourteen weeks out of work. The recent U.S. recession changed this favorable trend as the percentage of long term unemployed rose dramatically. This trend does not bode well for the natural rate of unemployment, as the longer term unemployed often risk becoming permanently disconnected with the labor market as their skills deteriorate or become out of date. This can increase the natural rate of unemployment in the U.S. and also requires that these workers are given the resources they need to be retrained to increase their chances of entering the workforce. This large number of long term unemployed also increases the amount of government revenues that must be “transferred” to these unemployed workers in the form of unemployment benefits. As the

discussion later in this paper will demonstrate, this increase in transfer payments could not come at a worse time as the U.S. fiscal sector struggles to find ways to reduce a very large deficit.

The data analysis above does not paint a particularly rosy picture of the U.S. economy. The U.S. consumer has been hit particularly hard by the U.S. financial crisis. Despite rapid productivity gains during the 1990s, the wages of the average U.S. worker have stopped growing as there is excess supply of labor and the housing market can no longer supplement stagnant wage growth via mortgage equity withdrawals. The consumer and the U.S. financial system have started the deleveraging process which naturally brings down the velocity of money and causes growth to slow. The deceleration in growth is further supported by a bifurcated labor market where those without an education are finding it increasingly difficult to find work. This causes a perceived separation in the population between the “haves” and “have-nots” which can lead to both social and political divides and threaten the general civil peace that is necessary to foster innovation and economic progress.

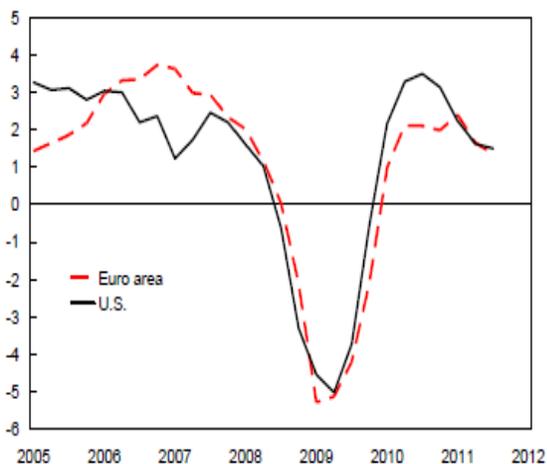
II.4 The Flexibility of the US Economy Helps Start the Rebalancing Process

. Despite some of the concerns raised in the previous pages, it is important to recognize there are some bright spots in the U.S. economy that could cause growth in the private sector to surprise to the upside. One important point is that the U.S. is a very flexible economy. The wage system is flexible, as is the U.S. dollar, which allows the economy to naturally adjust to shocks such as the financial crisis. As long as faster growing, emerging market global trade partners continue to foster economic growth in their own economies the global imbalances that helped cause some of the excess' over the past decade should reverse. For example, as countries such as China, Brazil and India continue to grow at much faster rates than the developed economies their share of world GDP should rise and the wages and wealth of their citizens should rise as well. While this process will take time, eventually the increased wages in these economies should start to foster a higher level of consumption. This will slowly allow the real GDP per capita in these emerging economies to converge with the developed economies and eventually provide a viable export market for the developed economies which should help stabilize growth rates. This global rebalancing is a long term process. Citi economists estimates world trade will raise 6.1% per year between 2012-2030 and average 4.4% growth per year until 2050. They estimate by 2015 China will be both the top exporter and importer and by 2050

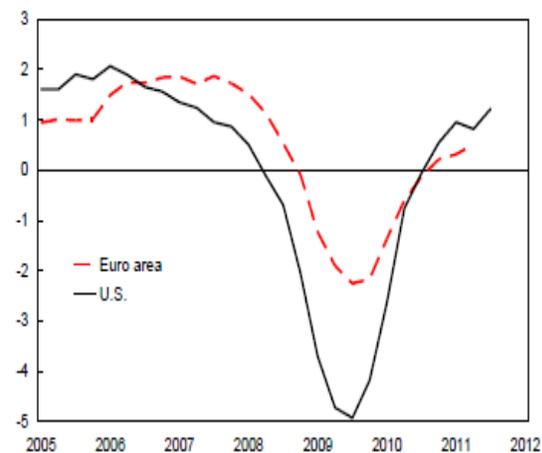
China and India will be the two in world trade. They conclude that by 2050 60% of advanced economy exports will be to the emerging markets of today. (Buiter, October 2011)

In December 2011 Steven Weiting, an economist at Citi, published a report highlighting the potential revival in the goods sector in the U.S., which further establishes hope as it relates to certain U.S. job gains and a rebalancing of the trade balance. Weiting points out a list of items that improves the outlook for the U.S. goods producing sectors that include: “1.) [US] exchange rate depreciation in 8 of the last 10 years¹⁷ 2.) Very modest private sector compensation gains including benefit costs 3.) Strong productivity gains¹⁸ 4.) Very stable non-labor costs including swiftly developing energy supplies and 5.) Rapid compensation gains and higher utilization rates in emerging markets. Figure 22 shows two conclusions from the report that highlight how far the U.S. labor market has adjusted when compared to the Eurozone, another struggling developed economy that does not enjoy near the structural flexibility and competitiveness that the U.S. enjoys as a result of their much more flexible labor market.

Figure 22: Left: Real GDP Y/Y% Change US vs. Euro area. Right: Total Employment (US Non Farm) Y/Y% US vs. Euro Area



Sources: BEA, Statistical Office of the European Communities note: data through 3Q



Sources: BLS, Statistical Office of the European Communities Note: U.S. data through 4Q-to-date, Euro area 2Q 2011

¹⁷ This could become a more difficult method of adjustment if aggressive monetary policies by other large developed countries start to affect those currencies versus the dollar (competitive devaluation). This is discussed briefly later in the paper.

¹⁸ Also referenced earlier in this report

The report by Weiting highlights how exports have increased much quicker as a percentage of GDP since the onset of the 2008 recession while imports have remained flat. This improvement in the trade deficit “is more than just a change in domestic savings behavior...the broad net national savings rate has fallen not risen since the pre-crisis period.” (Weiting 6)

Figure 23: Left: Monthly US Trade Deficit (Billions US\$) Right: US Energy Production and Consumption (Quadrillions of BTUs)

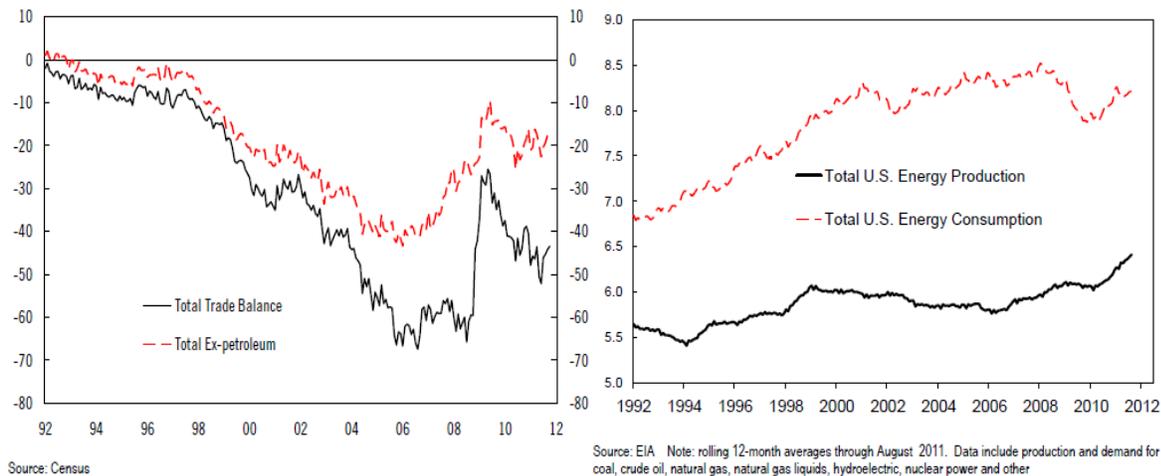


Figure 23 highlights a few more of the important figures from the report, some of which show the increase in energy consumption and the wide gap between the U.S. trade balance including and excluding petroleum. Weiting notes that domestic energy production could continue to produce energy imports if “sufficient capital investment is put in place to switch potential applications from more expensive petroleum (63% of which was imported before refining in 2010) toward cheaper natural gas, which is largely domestic production.” The report also discussed how the sectors of the economy that were artificially influential as a result of the housing bubble (i.e. construction and housing) have likely bottomed, and perhaps more importantly now represent a much smaller share of the economy and will likely not cause a dramatic shift lower in annual real GDP rates if weakness persists (given the low base). The flexibility of the U.S. economy is also demonstrated by the rapid shift towards cheaper energy production as a source of input substitution away from expensive petroleum imports. These growing sectors can help replace some of the lost jobs from the financial crisis and policy makers should continue to encourage investment in these sectors to help foster growth.

It is also important to recognize how an increase in the U.S. savings rate as the consumer de-levers is not solely a negative influence on the growth potential in the U.S. economy. Yes, a higher savings rate corresponds to lower discretionary spending today.

However, over time, a higher savings rate also increases the supply of loanable funds in the market. This increased supply of domestic funds should keep the cost of investment low, and encourage investment in the economy. While investment currently represents a relatively small portion of the U.S. economy, especially when compared to consumption, investment has potential positive implications for the long run growth potential of the U.S. economy. If U.S. companies start to increase investment in software, equipment and manufacturing at attractive financing rates it should result in a more productive economy and labor force over time. These investments will increase productivity and should, over time, increase the demand for labor to supplement the new investment. As discussed above, investment in energy infrastructure can also help foster the growth of lower cost domestic energy production which not only could lower input costs in the U.S. but also reduce U.S. reliance on foreign oil improving the U.S. trade balance. Finally, these excess savings can help replace some of the external demand for U.S. government debt. However, the U.S. government should not take comfort in this source of demand alone, as it will take time to develop and a lack of sufficient fiscal consolidation will likely lead to an increase in the cost of government debt which would potentially crowd out the positive investment potential of a higher savings rate in the U.S. discussed above.

III. The Role of Government in the U.S. Economy

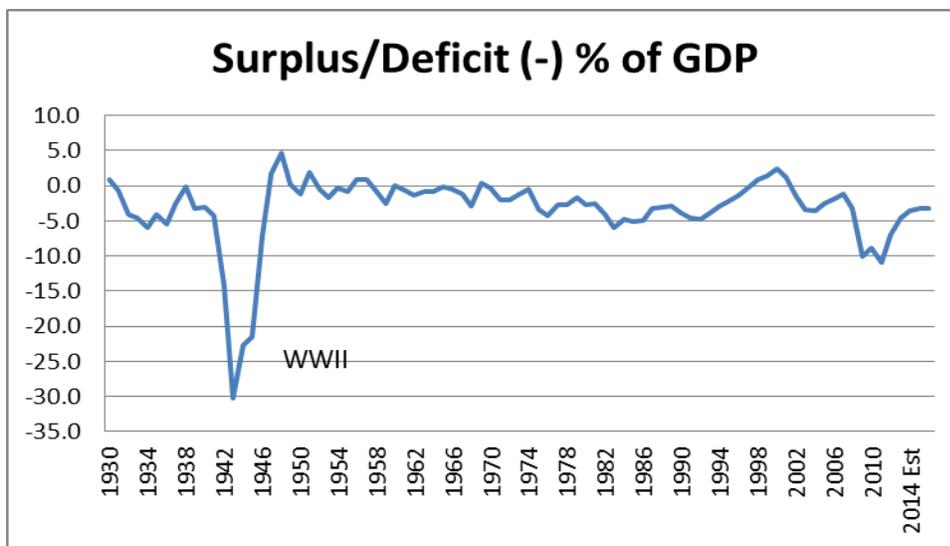
The focus of this paper now shifts to the role of the government in the U.S. economy. If the U.S. is to continue growing and the U.S. consumer, as evidenced by the data above, needs to save and reduce debt prior to contributing meaningfully to the growth in U.S. real GDP, it is important to analyze how the role of the government could impact the living standards of U.S. consumers going forward. We will show the historical path the U.S. government has taken as it relates to revenues, expenditures, debt stock versus GDP and future obligations. The discussion below will combine data compiled from the White House OMB website¹⁹ and charts from a report compiled and written by Mark Meeker in February 2011 entitled “*USA Inc. A Basic Summary of America’s Financial Statements.*” In the report Meeker organizes a large amount of data from the White House Office of Management and Budget (OMB) to help readers

¹⁹ <http://www.whitehouse.gov/omb/budget/Historicals>

understand the current state of the U.S. government's debt problems from both a debt stock (amount of U.S. government debt) and debt flow (perpetual deficits and increasing entitlement obligations) perspective.

Prior to discussing the historical revenue and expenditure picture of the U.S. government, it is important to start with a perspective of the U.S. government surplus/deficit position as a percentage of GDP. (Figure 24) The U.S. government ran a record deficit in order to fund WWII in the early 1940s but quickly returned to a surplus position

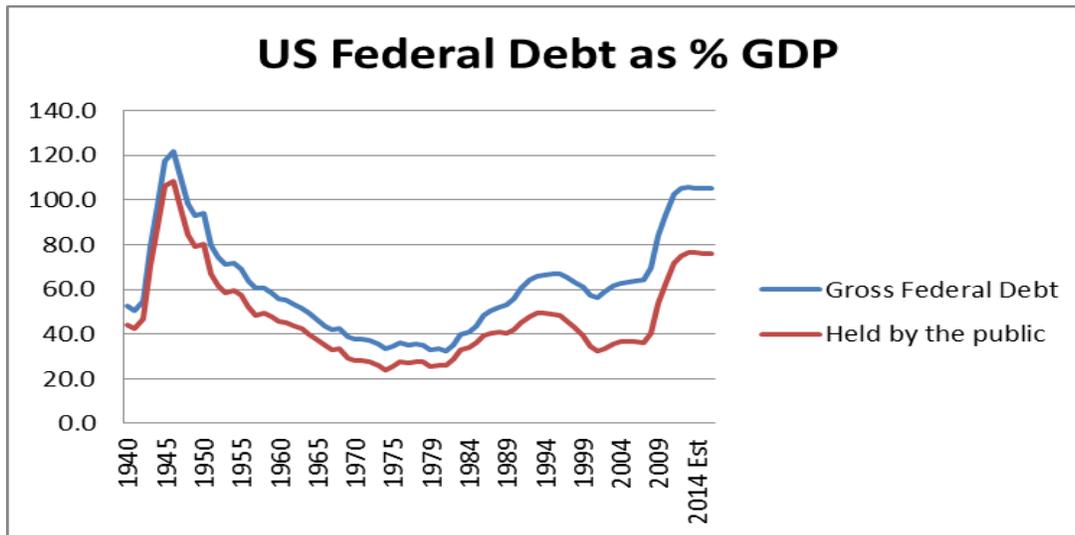
Figure 24



Source: OMB. Numbers after 2010 are estimates from the OMB

following the war. The deficit was rather steady in the 1950s and 1960s and slowly started to drift back towards -5% of GDP by the time of the double dip recession in the early 1980s. The technology and productivity boom of the 1990s helped push the budget deficit back into a surplus in 2000 but this lasted only briefly followed by a sharp increase in the deficit following the 2007-9 recession. The deficit is a flow variable which adds to the stock of US government debt. Figure

Figure 25



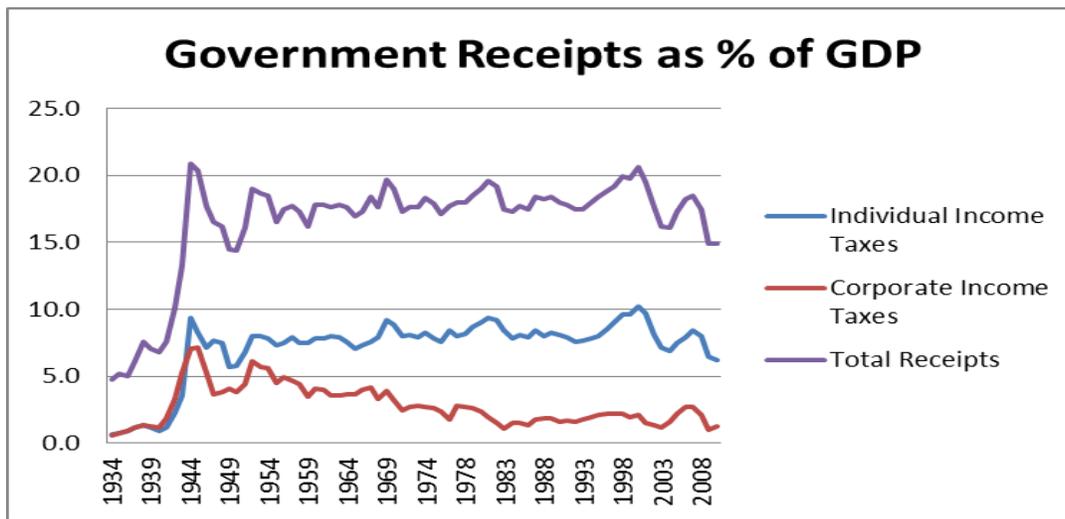
Source: OMB

25 shows the historical change in the stock of debt as a percentage of GDP using data from the OMB. The stabilization in the deficit post WWII helped decrease the post war debt levels in the U.S. rather quickly.²⁰ The government splits the aggregate debt levels into debt held by the public and gross federal debt. The difference is debt held between intragovernment agencies including the Federal Reserve and other government accounts. The recent increase in the amount of government debt via large annual deficits is troubling and warrants a more detailed study of the sources and uses of U.S. government funds in an attempt to try and outline the largest contributors to the deficit and potential solutions.

The government derives a good portion of revenue each year by taxing the income of corporations and individuals. Figure 26 outlines the historical path of government revenue as a percentage of GDP. Government receipts as a percentage of GDP have averaged 16.5% since 1934 and were at 14.9% at the end of 2010, falling from the 20% level in 2000. The level of

²⁰ The rapid drop in the debt/GDP ratio was also a result of a cap on interest rates and “financial repression” a concept that will be discussed in more detail in the literature review section that follows

Figure 26: Government Receipts as % GDP

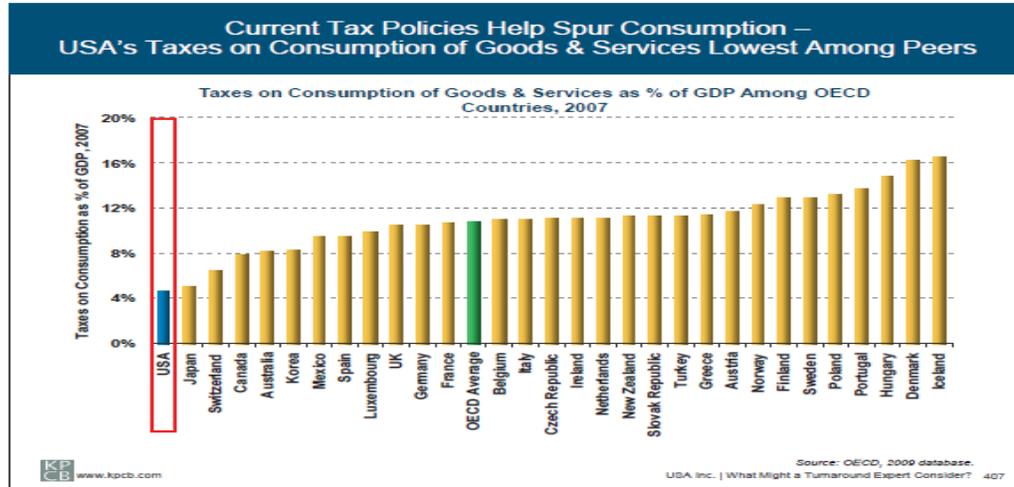


Source: OMB

receipts spiked in the early 1940s to fund WWII but remained fairly steady between 15% and 20% of GDP up until 2000. The level of receipts fell following the bursting of the dot.com bubble, the recession in 2001, the Bush tax cuts, and the great recession in 2007. The gap between individual income taxes and corporate income taxes has widened since WWII suggesting that there may be more room to increase corporate tax receipts via tax code restructuring in order to help the government find an increased revenue stream they desperately need following the recession in 2008. While there is little doubt there is room for tax revenue increases by changing the composition of the tax code and potentially income tax rates on both individuals and corporations, the chart also shows that a good portion of the downturn in tax receipts looks to be directly related to the weak economic performance. While the tax code certainly has room for improvement, increasing personal income tax rates on the higher tax payers by itself to solve the deficit problem in the U.S. is not a realistic solution. Ms. Meeker's report includes a quick mathematical exercise which shows that if the U.S. wanted to simply increase the top two tax brackets to bring the deficit to GDP ratio back to 3% by 2019 the top two brackets would need to pay 72% and 77% in income taxes respectively. (Page 397)

Ms. Meeker's report provides perspective on how the tax code in the U.S. is built to favor

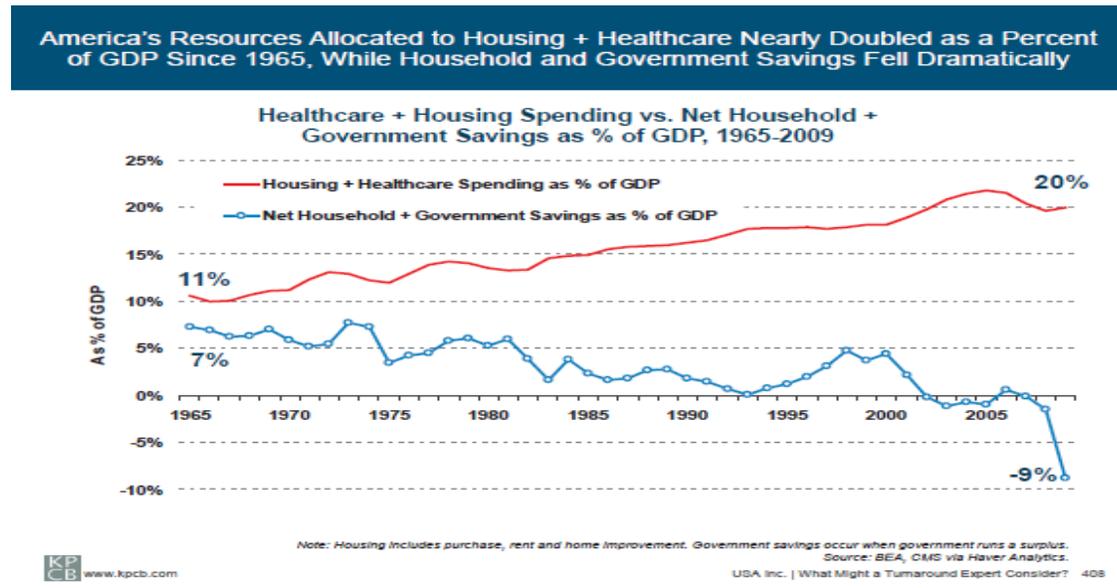
Figure 27: Taxes on consumption



Source: *Meeker, Page 407*

consumer debt and low amount of consumer savings discussed previously in this paper. Figure 27 shows the results from the OECD database which outlines a cross section of countries' consumption tax policies measuring taxes on consumption as a percentage of GDP in 2007. The study shows the U.S. as having the lowest taxes on consumption when compared to 31 other countries. The U.S. would need to almost double the tax rate on consumption just to fall in line with the OECD average. The consumption friendly tax policy in the US provides one explanation for the large increase in consumption and housing debt prior to the financial crisis. Figure 28 summarizes one potential economic consequence of a tax code that promotes consumption over savings. Spending on healthcare and housing in the U.S. has increased from 11% of GDP in 1965 to 20% of GDP in 2009 while U.S. national savings has dropped from 7% of GDP to -9%. These data points suggest that the tax code needs to be altered to help encourage more savings and less consumption. A number of tax code solutions have been proposed including one by the National Commission on Fiscal Responsibility and Reform in December 2010. The proposals suggest simplifying the tax code and reducing the number of consumption based tax breaks in order to help rebalance the economy and encourage saving.

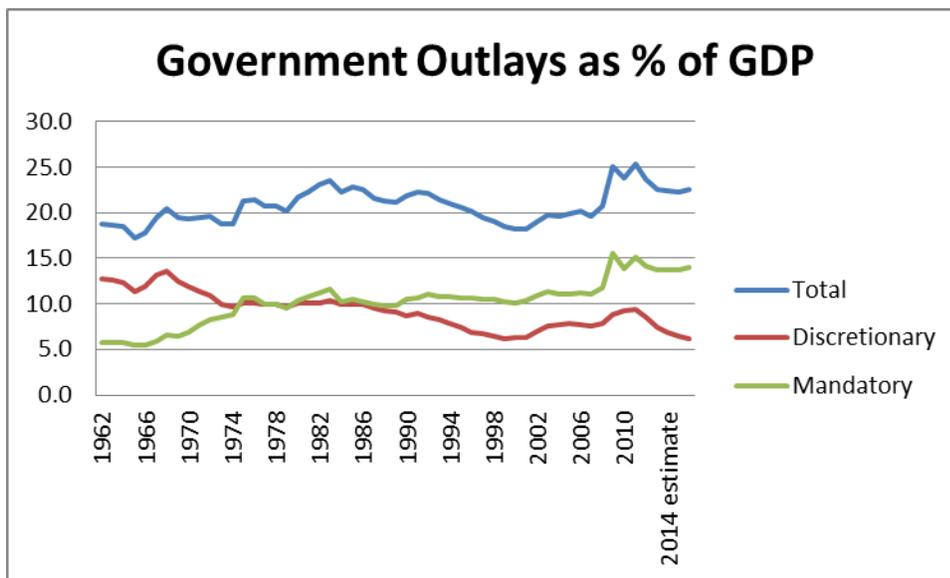
Figure 28: Source Meeker Page 208



(Meeker 410) If encouraging saving is the goal of tax reform the proposed reforms should be careful not to tax savings. An increase in savings by the U.S. consumer would lead to an increase in the investment of stocks, bonds, and other income and interest earning investments by the general public. If the goal of tax policy is to increase savings at the expense of consumption, taxes on the income earned from these types of savings vehicles should not be increased at the same time tax penalties on consumption are increased. Tax policy makers should take these consequences of tax policy into account when drafting proposals for an improved tax system in the U.S. Policy makers could potentially propose a higher tax on consumption including a VAT tax. However, they must be careful not to make this type of tax regressive as lower income households usually spend more of their income on necessities suggesting a VAT may need to be implemented with consumption tax breaks for lower income households. Furthermore, the U.S. could implement tax credits on various type of investment projects by corporations and also give favorable tax treatment to those savers willing to loan funds for these type of investments. This would work similar to municipal bonds but could be extended to other structures in a similar fashion, such as, real estate investment trusts (REITs) and master limited partnerships (MLPs) which encourage investment in the real estate, pipeline and energy sectors of the economy.

The other side of the government ledger, expenditures, are outlined at a high level in Figure 29 which shows government expenditures as a percentage of GDP. Currently these expenditures are running at close to the highs using data since 1962.²¹ These expenditures

Figure 29: Government Expenditures as % GDP. Source: OMB



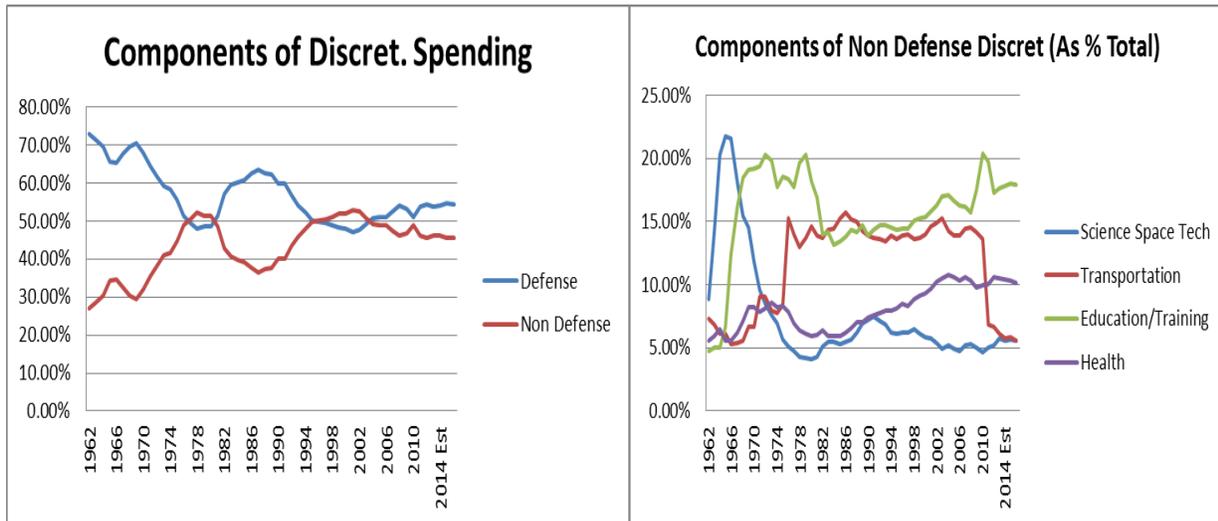
are split into discretionary and mandatory categories. The discretionary categories include defense and non-defense spending. Non-defense discretionary spending includes government expenditures on science, space, and technology, transportation, education and training and healthcare. Mandatory expenditures include spending on categories mandated by law and outside of the discretionary annual budget. These expenditures include social security spending, Medicare and Medicaid, and programs for the poor and disabled including food stamps, unemployment compensation, child nutrition and tax credit, supplemental security for the disabled and student loans.²² The increase in government spending has been driven by these mandatory programs at the expense of the discretionary budget which includes those areas of government that have the highest return (multiplier effect).

²¹ Data after 2010 is estimated from the Office of Management and Budget (OMB).

²² Source: OMB definitions and historical tables <http://www.whitehouse.gov/omb/budget/Historicals/>

While the amount of discretionary spending as a percentage of government outlays has fallen it is still important to study which sectors have benefited from the discretionary spending

Figure 30: Components of Discretionary Spending and Components of Non-Defense Discretionary (Source: OMB)



outlays. The left side chart in Figure 30 breaks government discretionary spending into defense and non-defense sub categories. Defense spending as a percentage of discretionary government expenditures have fallen since 1960 and now accounts for ~55% of discretionary spending while non defense spending accounts for the remaining 45%.

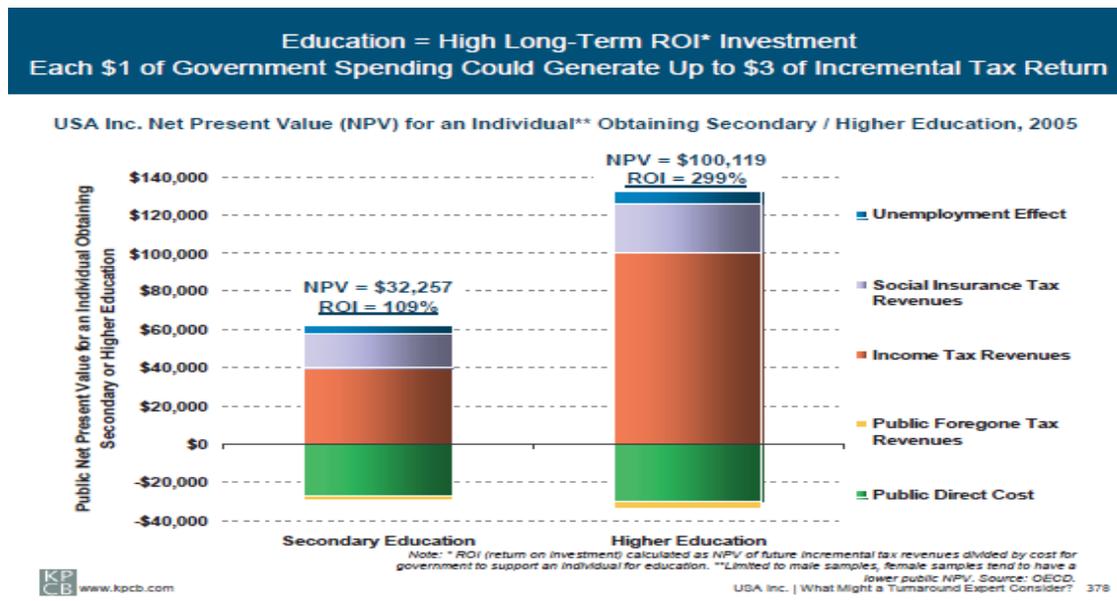
According to OMB data, defense spending has averaged 7% of GDP during 1948-2000. At the end of 2010 defense spending accounted for 5% of GDP below the average.²³ The success of each government sub sector is not based solely on how much money that sector receives in funds, but rather how efficiently that money is allocated to give the best return on investment to the public. Meeker's report states "on an inflation-adjusted basis, U.S. defense spending is at its highest level since World War II. With overhead ~40% of all spending, the Defense Business Board found DoD consistently pays "more for less" and fails to attach overhead as the private sector would. "(Meeker 63)

While education spending has increased as a percentage of discretionary government spending, the growth rate of education spending has been dwarfed by mandatory spending

²³ It is important to note the average using data 1948-2010 is skewed higher by defense spending representing over 15% of GDP in the late 1940s.

programs, especially healthcare spending. Prior to discussing the exponential increase in mandatory entitlement spending it is important to review why education spending is so important to the future long run growth in a developed economy like the U.S.²⁴ Figure 31 outlines a study by the OECD estimating the long term return on investment from education for males. The study concludes that every \$1 of government spending in education could generate

Figure 31: Education Long Term ROI (Source: Meeker 378)



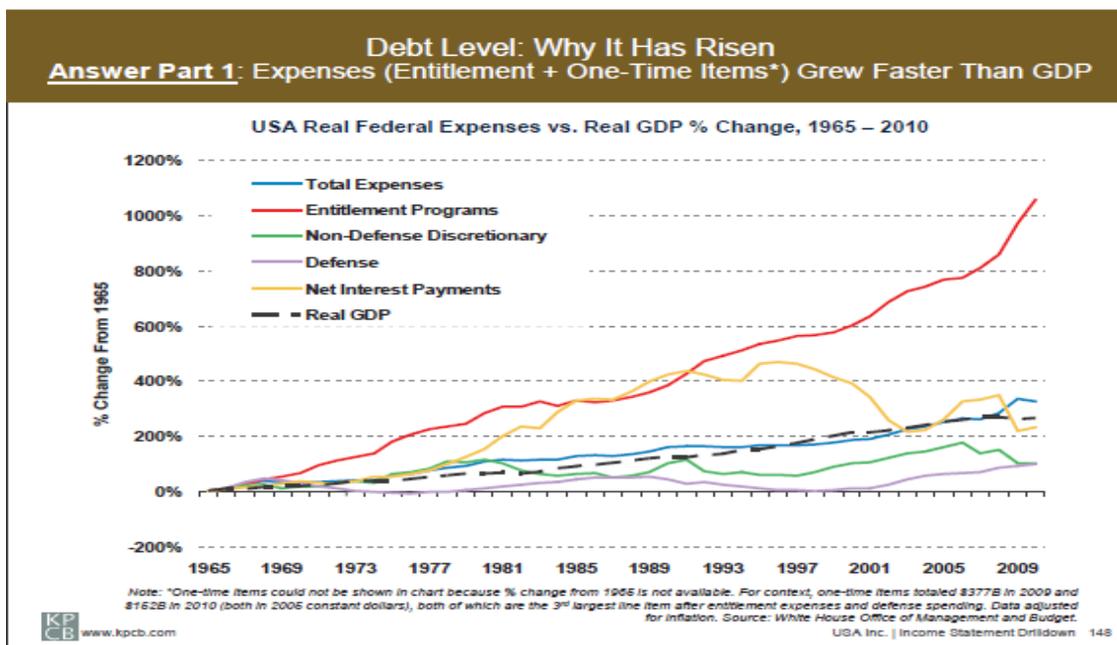
up to \$3 more in future tax revenue. This data should give the government a strong incentive to invest and continually reform the education system in the U.S. to make sure it is competitive. Unfortunately, according to the OECD Program for International Student Assessment (PISA) of 15 year olds among 30-34 countries, between 2000-2009 the U.S. has moved from 18th to 25th in math, 14th to 17th in science, 16th to 14th in reading and from 2nd to 1st in self confidence. In 2007 the U.S. also ranked behind a host of other developed countries in the percentage of 25-34 year olds with an associate's degree or higher = among OECD countries. (Meeker 378-382) These decreased levels of U.S. labor competitiveness as a result of education underperformance versus OECD peers is not surprising when analyzing total government spending data over 1960-2008 by category in the U.S. The data shows that total federal state and local government spending on education has gone from 3.7% of GDP to 6% of GDP while

²⁴ The important of education as it relates to employment was discussed in a previous section of the paper. See figure 20

healthcare spending increased from less than 2% of GDP to almost 8% of GDP. However, it should also be noted that a 62% increase in education spending as a percentage of GDP over this time period is not insignificant. The rankings discussed above suggest those increased dollars on education are likely not being used in an efficient manner and suggest room for improvement in making our education system more accountable and effective at giving the younger generation the tools they need to succeed in an advanced economy.

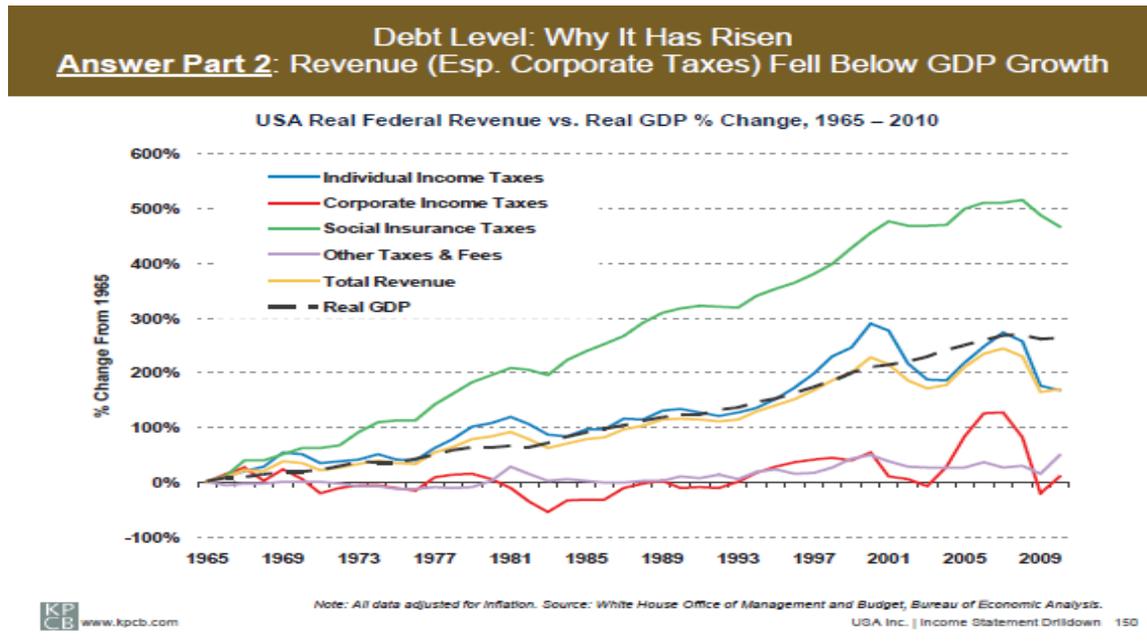
The increase in mandatory spending by the U.S. government at the expense of discretionary spending is a result of an increasing share of entitlement spending. Entitlements such as social security, medicare, and medicaid, in theory, are not a problem as long as there is enough funding in the economy, specifically at the government level, to fund the mandatory expenditures. However, as the studies above show, the government must be very careful to not let mandatory spending replace discretionary spending in areas like infrastructure (investment) and education which tend to have a lot higher long term payoff for the taxpayer. Figure 32 shows the growth rate in various real government expenditures versus real GDP during 1965-2010. Total government expenditures have increased over 3.3 times over the observed period while real GDP has increased 2.7 times and entitlement spending has increased 10.6 times. The increase in entitlement

Figure 32: Growth Rate in Real Government Expenditures vs. Real GDP (Meeker 148)



spending has been accompanied by an increase in social insurance taxes as a percentage of U.S. government revenue. (Figure 33) The growth in corporate tax receipts has been

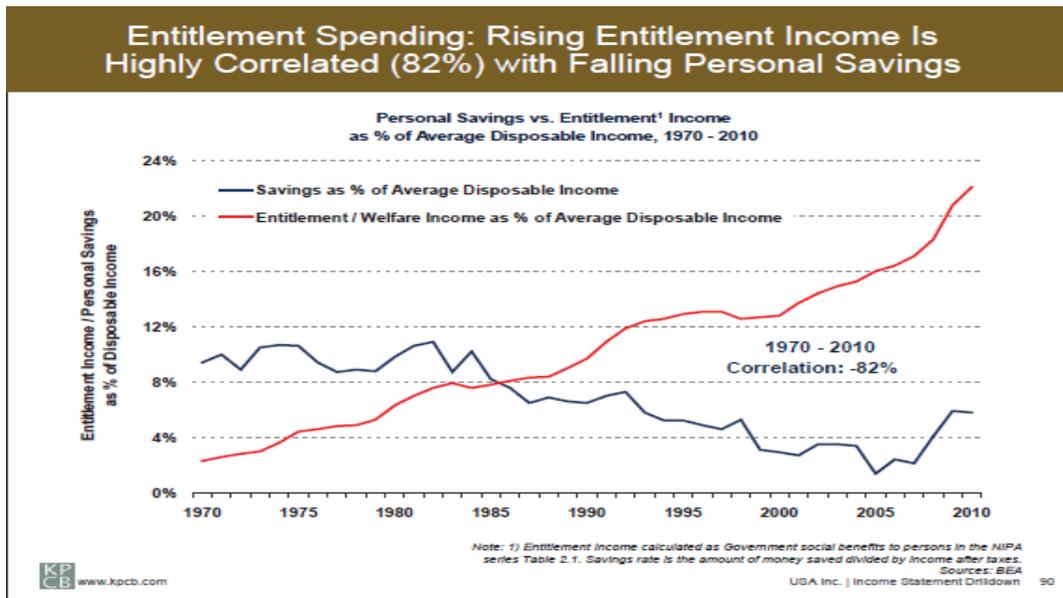
Figure 33: Growth rate in Real Federal Revenue vs. Real GDP (Source: Meeker 149)



particularly low when compared to the growth rate in other government revenue, individual tax rates, real GDP and the large increases in social insurance program related taxes. This implies corporate profitability has likely increased at the expense of lower disposable income for U.S. workers. If wages would have also increased that would imply tax savings going to U.S. corporations would have been passed through in the form of higher labor compensation. However, as Figures 4 and 16 showed earlier in the paper, productivity has increased but the growth in disposable personal income in the 21st century has been moderate at best.

In a testimony before the House Budget Committee, Ben Bernanke Chairman of the Federal Reserve said, “the entitlement programs are not self funded...they are unfunded liabilities. They are the single biggest component of spending going forward” (June 2010). In 1965 the estimate of the cost of Medicare in the U.S. was \$500 million per year and actual costs have

Figure 34: Source Meeker 90.

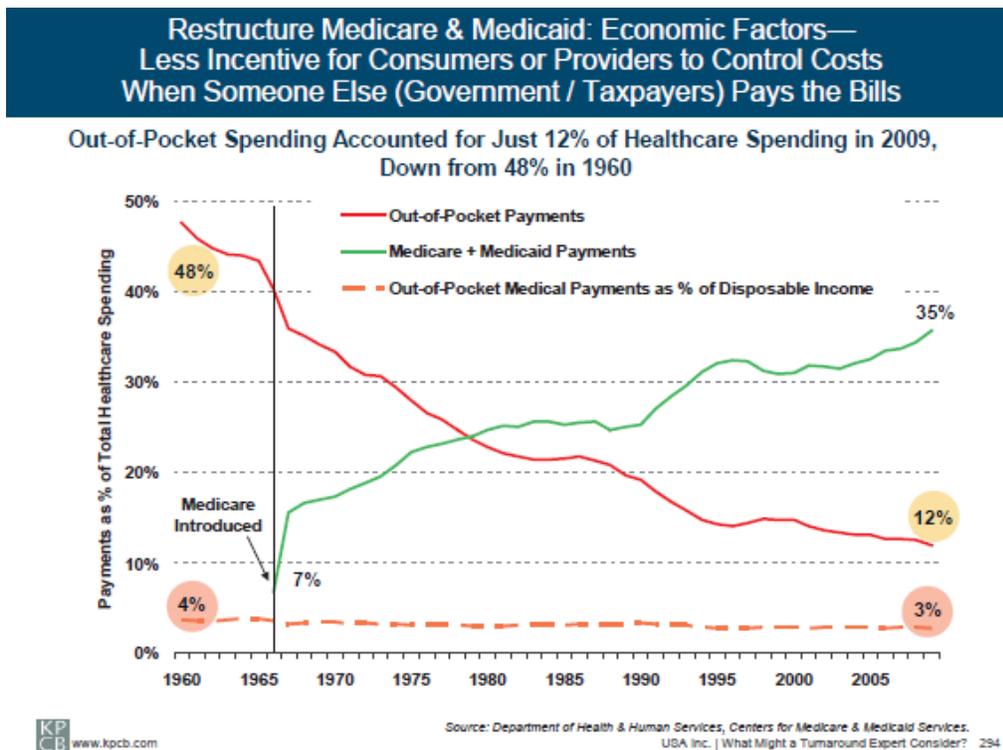


turned out to be over 10x the budgeted amount. (Meeker 46-47) The major entitlement programs include welfare, Medicare, Medicaid and Social Security. In a similar fashion to the tax code giving consumers incentive to consume versus save, these entitlement programs can give U.S. consumers a false sense of security and discourage them to save. Figure 34 shows that the large increase in entitlement income has been associated with a drop in savings. This helps continue to add evidence to the argument that the structural factors surrounding the U.S. economy, such as, low interest rates, easy lending standards, a consumption friendly tax code and entitlement programs all have led to a low personal savings rate among consumers in the U.S. economy.

There are a number of structural and incentive based flaws with the major entitlement programs in the U.S. The structural flaws center around the fact that the U.S. has not altered the structure of the programs after discovering that they were not performing as designed. For example, social security revenues exceeded expenses in every year 1984-2008 leaving a cumulative \$1.4 trillion surplus in the social security fund. However, under the government rules these surpluses were able to be used to fund other government programs. Without the use of the surplus the government would have been forced to issue this shortfall as additional debt and the market may have forced the U.S. to wake up sooner to the shortfalls of these programs.

(Meeker 152) Other structural flaws relate to the fact that there are a far larger number of entitlement beneficiaries today versus when these programs were created. For example, in 1965 when Medicaid was created 1 in 50 Americans received Medicaid payments, today it is 1 in 6. Another example is the social security program which started with a full retirement age of 65 in 1935. In 2009 the retirement age to receive full benefits had only increased by 3% to 67 years old despite the fact that life expectancy at birth has gone from age 62 in 1935 to 78 in 2009, a 26% increase. The lack of restructuring in the social security entitlement program means the program will have permanent negative cash flow starting in 2015 according to the Social Security Administration (Meeker 140). Another problem with entitlement programs is it can change the incentive behavior of those receiving the entitlements. Higher entitlement income provides one explanation for lower savings rates in the U.S. Figure 35 shows how the structure of

Figure 35: Structure of US Healthcare Programs (Meeker 294)

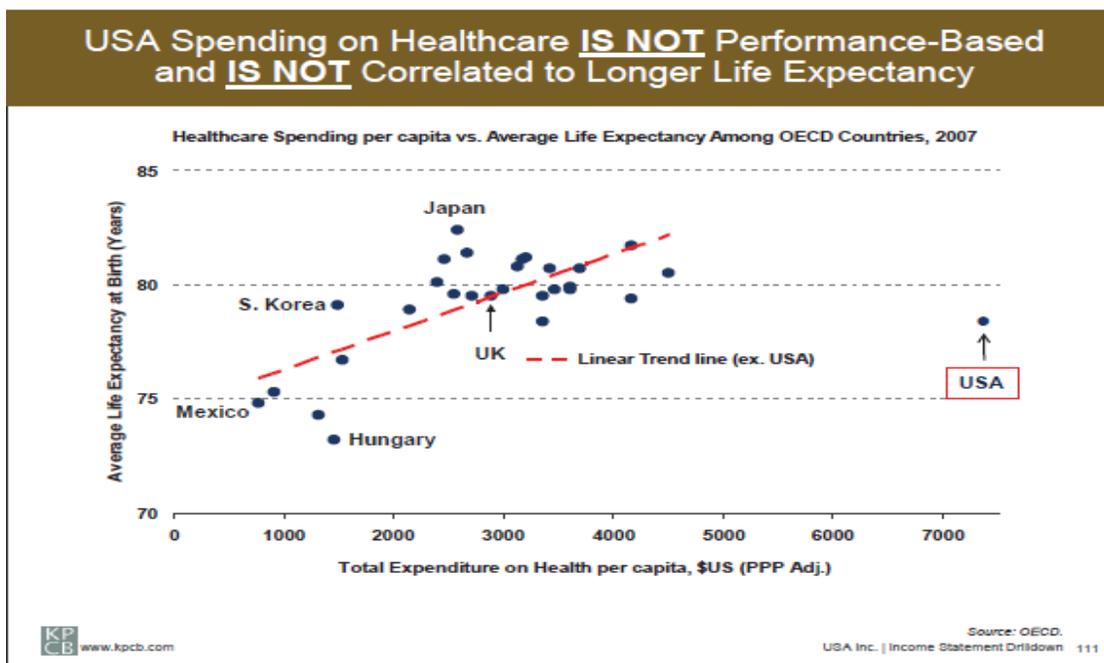


the U.S. healthcare programs provides an explanation for very high health care cost inflation. In 1960 consumers paid for 48% of their healthcare spending. By 2009 the out of pocket portion

had fallen to 12%. When consumers do not have to pay for a product directly the consumer's incentive to control costs falls resulting in a higher market cost for the "perceived" low cost service. In a 2007 OECD study it was found the USA spends three times the OECD average on per capita annual healthcare expenditures, and two times the OECD average of healthcare spending as a percentage of GDP.

One would expect this high level of healthcare spending to result in much better health metrics for U.S. consumers when compared to the OECD peers. However, in 2007 when ranked against 30 other OECD peers²⁵ the U.S. population ranked last in obesity, 27 in infant mortality, 25 in total hospital beds per capita, 22 in practicing physicians per capita, 19 in doctors' consultations per year but number 1 in MRI machines. Figure 36 shows a simple trend line with the USA as an outlier given the much higher expenditures per capita on healthcare with no corresponding increase in life expectancy. (Meeker) These results suggest there is likely significant waste in the U.S. healthcare system as a result of a lack of

Figure 36: Life Expectancy versus Health Care Expenditures per Capital (Source Meeker 111)



²⁵ 30 being the worst, 1 being the best

proper incentives to control costs. The U.S. healthcare system faces a growing and aging population, healthcare service providers that have the incentive to increase the levels of services resulting in an increase in profits coupled with a consumer that is not cost conscious as it relates to the services they need. (Meeker 281) This system must be restructured to ensure the costs of healthcare in the U.S. are kept under control and grow more in line with overall wages in the U.S. The new policies should also reconsider which consumers truly have a need for access to low cost government healthcare programs and those that do not. Those consumers that have the ability to pay for more of their healthcare cost on their own should be given the proper incentives to find the highest quality, lowest cost solution as they do with the majority of other products they consume. The U.S. clearly cannot afford to continue to fund entitlement spending at this pace. Meeker's study estimates that as of 2010 the present value of unfunded Social Security, Medicare and Medicaid liabilities was \$7.9, \$22.8 and \$35.3 trillion dollars respectively. (Page 247) Douglas Elmendorf, Director of the U.S. Congressional Budget Office summarized this entitlement issue in 2009 by stating, "The country faces a fundamental disconnect between the services the people expect the government to provide, particularly in the form of benefits for older Americans, and the tax revenues that people are willing to send to the government to fund those services."

The discussion above on the historical revenue and expenditures of the U.S. government is not meant to be a political argument in any form. The data speaks for itself in much the same way the data on the financial crisis speaks to the state of the U.S. consumer pre and post 2007-9 recession. It is important for policy makers to understand that there is room for improvement in efficiency and structural change as it relates to **both** government revenues and expenditures. Unfortunately, the U.S. is running out of time and must act while the U.S. economy is still in a recovery (albeit fragile recovery). The fragile state of the U.S. economy will make it more difficult for the government to control the negative growth implications of fiscal consolidation and restructuring.

IV. Fiscal Consolidation

IV.1 The Current U.S. Fiscal Situation –No Easy Way Out

There are a number of difficulties that arise when trying to estimate the future funding needs of a sovereign. The first is trying to determine which part of the deficit is cyclical and which part is structural. The other problems arise from the fact that future deficits or surplus' are dependent on the amount of tax revenue that is collected by the sovereign, and that tax base is based on assumptions regarding both future tax rates and the growth trajectory of GDP. In a July 2011 report Willem Buiter, Chief Global Economist of Citi, discussed his methodology and estimates on the potential size of U.S. fiscal consolidation that was needed in order to stabilize the levels of U.S. debt. Buiter said the best case scenario for the U.S. would be to create a credible back loaded agreement that raised revenues and addressed the long term entitlement spending problems of the U.S. The probability of this type of solution was estimated to be low given the political gridlock among the two major parties in the U.S. political system. He warned that the long term effects of a downgrade of the U.S. sovereign below "AAA" would cause investors to diversify away from holding U.S. treasuries and the US dollar. Buiter cited the IMF estimates which stated that in order for the U.S. to bring government debt to GDP levels back to 60% by 2030 they would need to increase the cyclically adjusted primary balance (CAPB) by 11.3% between 2010-2020 and maintain that balance 2020-2030. So the U.S. would need to tighten fiscal spending by \$850 billion in 2011 and tighten by 4.5% of nominal GDP over the following ten years for an estimated cumulative tightening of \$10.4 trillion. Buiter used his own methodology and came up with \$11.4 trillion of necessary U.S. fiscal tightening needed in order to bring U.S. fiscal debt levels back to sustainable levels. These estimates were much larger than the "grand plan" estimates for \$3-4 trillion over ten years that centered around the debt ceiling debate in 2011. Buiter was also cautious in regards to assumptions on how much of the deficit was structural and how much was cyclical in nature. The IMF assumes that the CAPB in the U.S. will fall from -8.9% of GDP to -6.2% of GDP as the economy recovers suggesting 2.7% of the current deficit is cyclical, not structural. Buiter believes that there are signs in the U.S. economy of skill mismatch in the labor market and limited mobility from the housing crisis that suggest more of the current deficit could be structural in nature.²⁶A higher structural deficit would imply the estimates from the IMF for future necessary fiscal tightening would be too

²⁶ These factors were discussed in detail earlier in the paper when discussing the employment picture in the U.S.

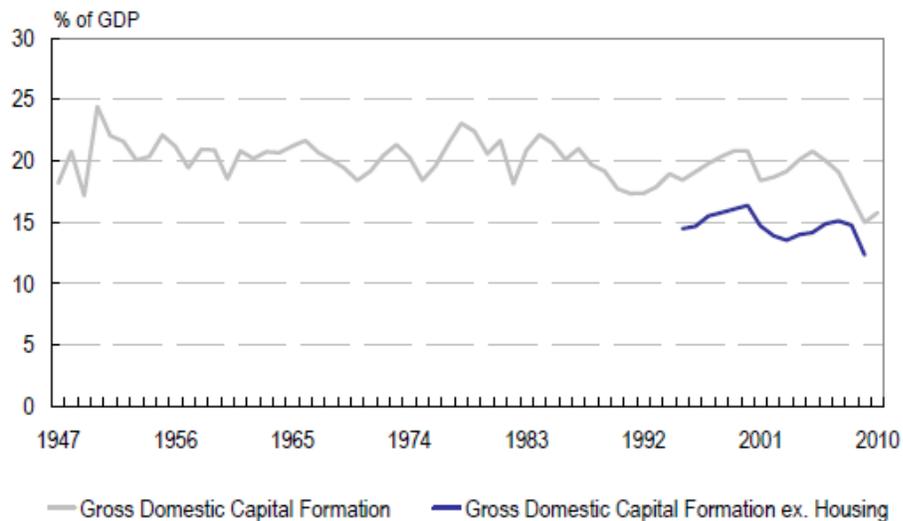
optimistic. Another important consideration is that the 11.3% of GDP tightening estimated by the IMF does not take into account the spending commitment under U.S. entitlement programs. If this age related spending on Medicare, Medicaid and Social Security is taken into account the IMF estimate rises from 11.3% of GDP to 17.5% of GDP.²⁷

The estimates above suggest the U.S. fiscal policymakers have their work cut out as they try to return the government to a sustainable level of spending and debt. Unfortunately, the structural factors discussed earlier in the paper surrounding the current state of the U.S. consumer does not bode well for the U.S. “growing” their way out of the debt problem.²⁸ Buiter suggests the fundamental drivers of GDP growth, which he describes as “capital formation, demographics, quality of education and training and technological change,” are not likely to be large enough forces in the U.S. to grow out of the problem. Figure 37 from Buiter’s report shows gross domestic capital formation falling since the early

²⁷ The debt levels also do not take into account the debt from the U.S. Government Sponsored Enterprises (GSEs: FNMA/FHLMC). While these entities guarantee \$5 trillion in U.S. residential mortgages the net debt is lower as not all of the mortgages will default resulting in a payment from the GSEs. Current CBO and OMB forecasts suggest the ultimate cost to the taxpayer will be ~\$160bln (Meeker 199)

²⁸ At least in the near to intermediate term

Figure 37: Gross Domestic Capital Formation in the US, (% of GDP), 1947-2010 (Source: Buiter 22)



1970s.²⁹ The demographic outlook for the U.S. is described as “benign for the US” when compared to other advanced economies, however, “age pyramids [are] gradually taking on more mass in the older cohorts.”³⁰ There is also the threat of emerging market and other developed countries pushing into the technology industry thereby lowering the “temporary monopoly rents” the U.S. enjoys from being a prominent inventor and exporter of technology to other regions of the world. This analysis supplements the analysis earlier in the paper that suggests the U.S. consumer has likely run its course as a major driver of spending growth in the U.S. over the next five to ten years. It will take time for the consumer and the economy to adjust to lower levels of debt and a lower multiplier. The economy must also reallocate resources away from the housing and financial sector which arguably provided excess tax revenues to the U.S. government prior to the financial crisis in 2007-9. Thus the reduction in the U.S. debt/GDP ratio will likely have to come from a reduction in the numerator and not an increase in the denominator.

²⁹ Various sections of this paper discussed the importance of increasing investment in the U.S. economy as savings rebounds. Gross capital formation would be included in that investment category.

³⁰ Demographic trends will also be touched on later in the paper

IV.2 The Impact of Fiscal Consolidation

In order to reduce the deficit U.S. policymakers can try to increase revenues via tax increases (or changing the tax code) or spending cuts. There have been a number of recent studies analyzing the cost-benefit analysis of tax-based versus spending-based fiscal consolidations (IMF, October 2010). The IMF study concludes that in the long run fiscal consolidation has a positive effect as it allows lower discretionary income taxes over the long run with lower interest expense paid by the government. However, in the short run the consolidation results in higher unemployment, and a fall in the value of the currency which leads to higher exports and helps soften the drop in growth. The report discusses the shortfall of using the cyclically adjusted primary balance (CAPB)³¹ to measure successful fiscal consolidations. This caused the IMF to focus on actual government actions of actually implementing tax hikes or spending cuts.³²

The IMF study analyzes 15 advanced economies over 30 years. The IMF found that for every ten percentage point drop in the debt/GDP ratio output rises by 1.4% in the long run. GDP is lower up to three years after fiscal consolidation followed by a break-even point at year 5 and permanently higher GDP growth thereafter. The permanently higher GDP growth is the result of lower future taxes from the government which results in higher savings rates, stronger current account balances and lower future interest payments as risk premiums on the government debt are reduced. The largest effects of future tax cuts come from labor and capital gains tax cuts followed by lower taxes on consumption and transfer payments. The study differentiates between tax based and spending based consolidation. Fiscal cuts financed by tax increases (revenue focused) equal to 1% of GDP results in a 1.3% drop in GDP after two years. Fiscal cuts financed by spending (expenditure focused) cuts equal to 1% of GDP results in a .3% drop in GDP after two years.³³ The study also finds tax based consolidation equal to 1% of GDP

³¹ Keep in mind the CAPB simply refers the cyclically adjusted government surplus or deficit

³² This methodology still has some bias as countries could have waited for good economic backdrops to implement consolidation. This type of bias would result in good economic outcomes that may have not been associated with fiscal consolidation. The opposite is also true – if consolidation was occurring in a recessionary backdrop the negative economic outcomes may be driven by the general economy and not necessarily the success or failure of fiscal consolidation. Again, this highlights the difficulty in trying to tease out impacts from various policy decisions while holding constant the many other factors that affect economic growth in an economy.

³³ Not statistically significant

causes unemployment to rise by .6 percentage points compared to spending based consolidation which causes a .2 percentage point increase in unemployment. The spending based consolidation causes domestic demand to contract by .9% after two years versus tax based consolidation which is associated with a 1.8% contraction in domestic demand.³⁴

When comparing the two types of fiscal consolidation it should be noted that historically spending based consolidation has usually been accompanied by a large amount of monetary stimulus. This monetary stimulus helps offset some of the negative economic impact of the consolidation and can likely help explain the superior economic outcomes associated with fiscal consolidation. The IMF assumes that the monetary authority may view spending cuts as a more serious effort at fiscal consolidation and therefore reward the fiscal authorities with monetary stimulus. The study also finds that spending cuts to government consumption and public investment have larger negative impacts on future growth when compared to cuts on items like transfer programs. The sample size from this study was small and therefore the results should not be considered robust. As discussed above, government infrastructure investment and investment on education seem to be associated with the largest fiscal multiplier and therefore a cut to this type of government spending would likely have the largest negative impact on long run growth.

The IMF study also finds that ten year government yields usually drop by fifteen basis points on average³⁵ two years after fiscal consolidation equal to 1% of GDP. Exchange rates also drop 1.1% and exports tend to increase due to currency devaluation while imports drop due to a decrease in final demand and investment. The drop in interest rates and improvement in net exports help soften the negative growth impact of the fiscal consolidation. The study also shows that deficit cuts from those countries that are perceived to have a higher risk of default results in a lower negative GDP impact when compared to fiscal cuts in those countries with a lower perceived risk of default. An increase in confidence and drop in risk premium from cuts in high risk countries likely offsets some of the negative growth impact from consolidation. The IMF attempts to use their model of fiscal consolidation to simulate the impact on hitting the zero floor on interest rates and the impact of multiple consolidations around the globe may have on the

³⁴ Both again assuming consolidation of 1% of GDP

³⁵ 1 basis point is 1/100 of 1 percentage point. (.0001)

success of fiscal consolidation.³⁶ The simulation assumed consolidation of 1% of GDP financed entirely by spending cuts with 75% of the cuts coming from transfer payments and the rest from government consumption. This consolidation results in a .5% reduction in GDP in the two years following the fiscal spending cuts. However, if interest rates are assumed to be at the zero lower bound³⁷ the reduction in GDP goes from .5% to 1%. If others are assumed to be consolidating at the same time reducing the amount of relative currency depreciation and interest rates are at the zero bound this causes the reduction in GDP to go from .5% to 2%.

Goldman Sachs used the above IMF report to run some of their own estimates on fiscal consolidation as it relates to the U.S. They estimated the structural deficit in the U.S. to be 6% of GDP. They found 29 historical episodes of consolidation (defined as at least 1% of GDP) and three comparable to the needs of U.S. fiscal consolidation which included Denmark in 1984, Sweden in 1993 and Ireland in 1982 (>9% of GDP). Successful consolidations were again found to be spending based, however the “top successful adjustments were accompanied by notably more monetary easing than the failures.” (Hatzius 2011) The study notes that the success of these consolidations likely over-estimates the potential success of U.S. spending fiscal consolidations given that short term interest rates are already at the zero bound limiting the impact of monetary stimulus accompanying fiscal consolidation. The economists at Goldman Sachs tried to construct a model that assumes no monetary policy response from fiscal consolidation.³⁸ The results shows that the success between spending and tax based consolidations are less pronounced without monetary stimulus and results in a hit to GDP of 1% to 1.5% from consolidation equal to 1% of GDP. However, in the second year following consolidation tax based adjustments still appear to be more damaging to GDP when compared to spending based consolidations. The authors conclude that with the Fed already using a substantial amount of monetary policy bullets both spending and tax based consolidation will likely have a substantial impact on U.S. growth. They suggest that the best policy by the Fed would be to continue with a very accommodative monetary policy. (Hatzius 2011)

³⁶ The simulation used the Canadian economy as an example

³⁷ No unconventional monetary policy is taken into account

³⁸ Again, the authors warn that the uncertainty behind these results can be substantial given the assumptions involved in constructing the model.

In a follow up report the Goldman economists expand on the analysis of the impact of fiscal cuts on the growth path of GDP. Not surprisingly, they find that large fiscal consolidation is likely to be pursued when growth is low and/or bond yields are high resulting in a weakening fiscal situation and a more dire need to act. They find spending-based large consolidations have a higher likelihood of lasting longer than tax-based efforts. The report tries to balance the potential impacts from front loaded and back loaded consolidations. Front loaded adjustments are good as they return the country's finances and debt burden to a sustainable path in a faster manner with a higher probability of achieving success prior to a rapid rise in interest rates and a sovereign crisis. However, a large quick adjustment has obvious negative impacts on growth and those impacts are exacerbated if the coinciding monetary authority does not have room for substantial accommodation. Unfortunately, the size of the fiscal consolidation does not usually lead to an equally sized drop in the fiscal deficit. This is usually because the adjustment efforts are usually discontinued due to the low growth and potential recession that accompany fiscal spending cuts. Lower growth from consolidation will lead to short run drops in tax revenues which also has a direct impact on the size of any deficit reduction. The authors try to estimate the optimal speed of fiscal consolidation. They conclude a very large initial consolidation effort is not successful as the hit to growth and tax revenues more than offsets the drop in the deficit. An initial consolidation of approximately 2% of GDP is ideal as it relates to the initial impact on the deficit. This ideal "speed limit" should be lower in a fixed exchange rate regime (lower impact from currency depreciation) and potentially higher in a low inflationary environment (higher potential offset from accommodative monetary policy). These conclusions make a rapid consolidation in many of the developed countries difficult under the current economic environment. Both Japan and the US are very close to the zero bound on interest rates and the Eurozone is trying to navigate in a fixed exchange rate regime. Given this backdrop they recommend an ideal annual speed limit of fiscal consolidation to be below 2% of GDP. (Stehn 2011)

IV.3 The Potential Cost of Inaction & Thoughts to Guide Policy

The analysis outlined above show that high levels of fiscal debt and persistent deficits leave policymakers stuck between a rock and a hard place. Raising taxes and cutting spending both have a negative near term impact on growth and too much fiscal consolidation can lead the economy into a negative spiral of recession, lower tax revenue and a potentially even larger deficits. It is very difficult for any policymaker to implement policies that have a negative impact

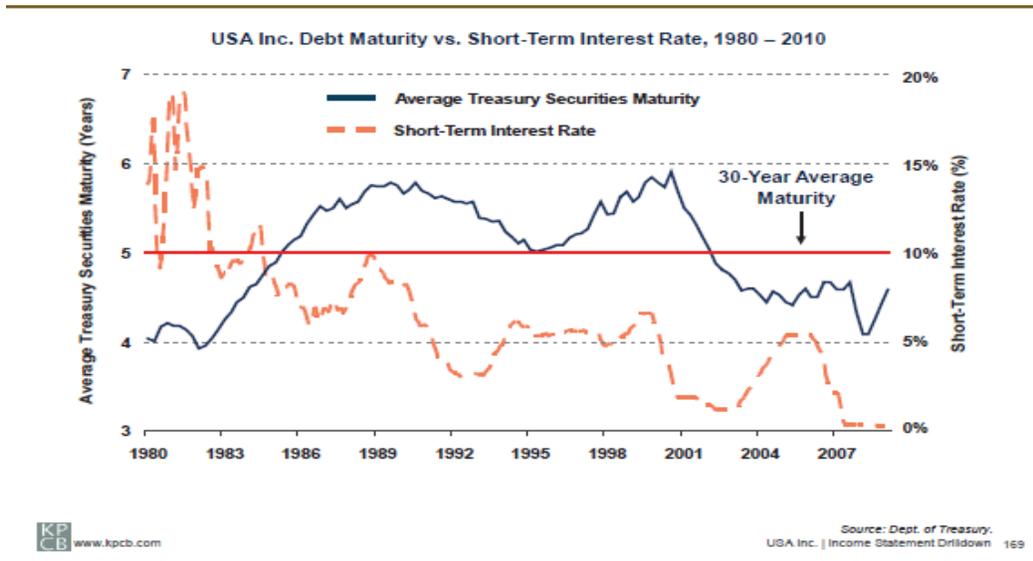
on the consumer's discretionary income. However, as the analysis below will outline, the consequences of failing to get the fiscal balance sheet in order can have severe negative consequences in the medium to long run, especially if a large portion of the funding for a government running a deficit comes from external foreign borrowing.

A government running persistent deficits needs to find external financing for the gap between revenues and expenditures. The government can issue bonds to both domestic buyers (domestic banks, pensions, bond funds etc) and can also find funding from foreign central banks that have excess liquidity (usually in the form of currency reserves) that they need to invest in what they perceive as low risk assets. Willem Buiter, Chief Economist at Citi, compares the risk of a liquidity squeeze on a sovereign issuing debt to a run on a bank. Any country with financing needs from financial markets runs the risk the market no longer gives the sovereign access to economically viable funding. A sovereign subject to the funding by the capital markets can be "rescued" by a liquidity provider of last resort, which in most cases is thought to be the central bank. The central bank has the ability to print currency and monetize the deficit funding of the sovereign in order to help support the demand for the debt in the capital markets. (Buiter 2011) A government can continue to fund interest payments by issuing more debt as long as the interest paid on the debt is lower than the growth rate of real GDP. The longer the maturity of the government debt, the lower the short term refinancing risk is for the sovereign. However, if the sovereign is funding deficits via bond issuance and trying to refund debt maturities in the midst of a deteriorating fiscal balance sheet, the sovereign runs a larger risk of the market asking for a higher interest rate for the sovereign in order to compensate the investor for a higher risk of default. The risk premium charged by the market is determined by the perceived ability and the willingness of the sovereign issuer to pay back the bond holder.

Until recently, the U.S. government's debt was rated AAA/AAA/AAA by all three major rating agencies.³⁹ The U.S. has enjoyed very low cost of funding despite the deteriorating strength of the U.S. balance sheet and despite running very high annual deficits following the financial crisis and recession in 2008. Figure 38 below shows the average maturity and average short term interest rates for U.S. debt 1980-2010. At the end of 2010 the weighted average interest rate on U.S. debt was below 4%, well below the 30 year weighted average

³⁹ Moodys, Standard and Poors (S&P) and Fitch. In August 2011 S&P downgraded the ratings of the U.S. sovereign to "AA". The rating agencies attempt to assign ratings to an issuer based on the probability of default.

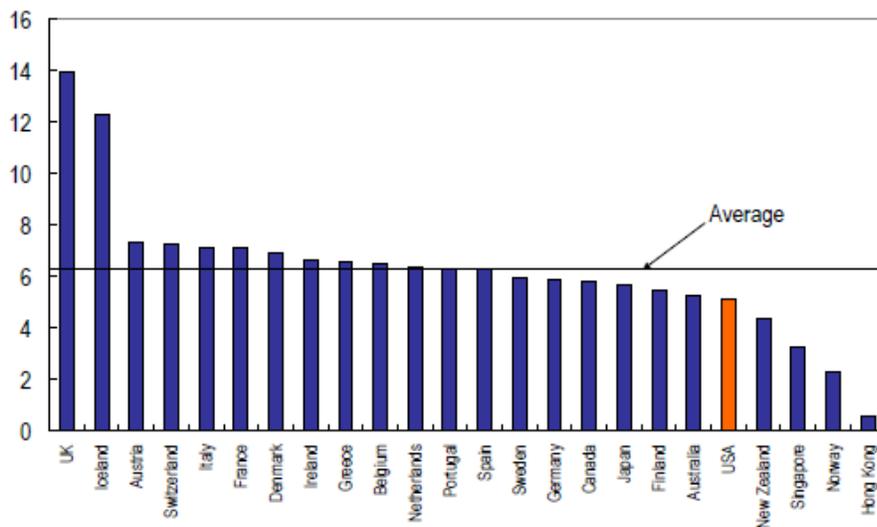
Figure 38: Average maturity and Short Term Interest Rates for US Debt



Source: Meeker, 169

yield of 7%. Despite these historically low rates the U.S. has failed to drastically increase the average maturity on the outstanding stock of debt. Figure 39 shows that the average US debt maturity is just under 5 years, towards the low end when compared to other countries around

Figure 39: Average maturity of government debt

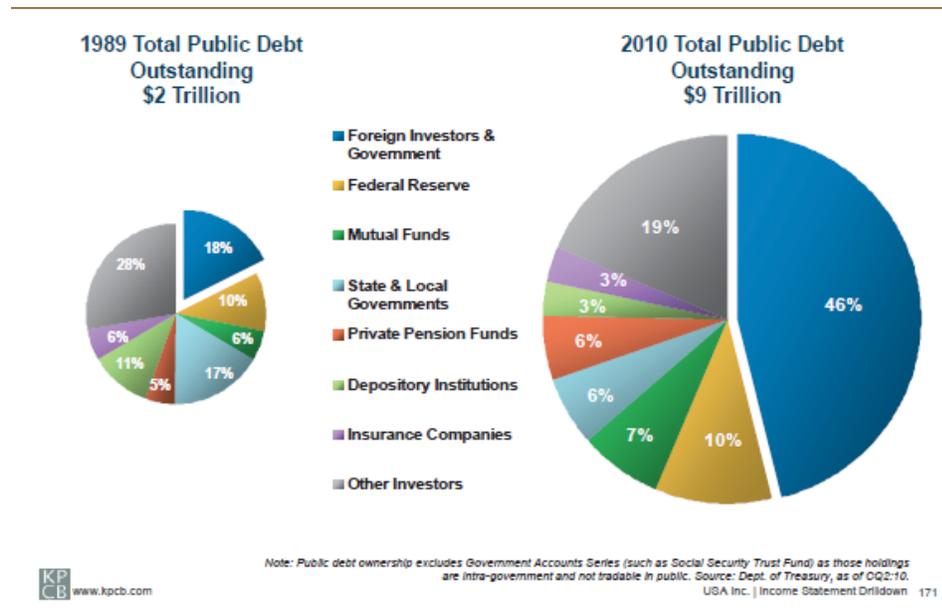


Source: Buiter July 2011

the world. The shorter average maturity of the debt increases the risk that the U.S. will bear higher interest rates on a larger portion of the debt as the debt matures and the U.S. has to refund the issuance in the capital markets. The last time the U.S. significantly reduced the debt/GDP ratio was in 1946-1974 following WWII (Reinhart and Rogoff (2008)). A good portion of the debt reduction was accomplished via high inflation which increased nominal GDP. This strategy only works if the debt is denominated in domestic currency and is not linked to inflation. This strategy is also dependent on the inflation not being anticipated by the market – in other words, the interest rates paid by the government do not properly reflect the inflation risk in the economy. The average maturity of U.S. debt in 1947 was 9.4 years making it easier to reduce debt via unanticipated inflation, as the interest rate locked in on the longer term debt did not have the opportunity to adjust to higher inflation and the holders of that debt were stuck earning negative real returns. The Fed also enacted policy in 1951 that capped the interest rate on debt – this was a direct method of making sure that the interest rate paid on the debt did not properly account for the risk of inflation in the economy. Regulation Q was also introduced during this period which prohibited the payment of interest on time deposits leaving investors with a lower number of alternatives to U.S. treasury debt.

This historical perspective is important to keep in mind when analyzing the current risk of refunding as it relates to the U.S. current and future stock of debt. The foreign ownership of U.S. debt has increased dramatically over the past forty years. In 1970 foreigners owned less than 5% of US debt compared to foreigners owning close to 50% of U.S. debt by 2010. (Meeker 172) Figure 40 shows how the composition of ownership of U.S. debt has changed since 1989. The good news for the U.S. is that the large increase in imports in the U.S. from foreign trade partners, namely China and Japan, has given these countries a large amount of U.S. dollars that have found their way back into the U.S. economy through the treasury market. This has provided the U.S. government with a large buyer of debt and helped keep the cost of funds low. This lower cost of funds has kept interest expense as a percentage of government revenue low, which is extremely important at a time when the government is not generating sufficient revenue to pay for the mix of discretionary and mandatory expenses discussed above. The large percentage of the debt owned by foreigners also could give U.S. fiscal and monetary authorities

Figure 40: Composition of Ownership US Treasury Debt



Source: Meeker

more comfort in using inflation to decrease the real interest rates on the debt, as the impact of negative real interest rates would be borne by a large number of foreign borrowers versus domestic holders of debt. However, the U.S. must be very careful when crafting their policy on debt issuance and inflation. The short average maturity of U.S. debt coupled with the looming large increase in mandatory entitlement spending by the U.S. leaves the U.S. very susceptible to investors demanding a higher interest rate on future debt issuance. If the U.S. fails to enact policy that gives investors confidence the U.S. will not continually run large deficits the market will adjust accordingly by charging the U.S. a higher risk premium. Furthermore, if investors start to anticipate that the U.S. is going to try to finance the looming deficits via higher rates of unexpected inflation the market will quickly reprice the U.S. yield curve and charge a higher inflation premium for issuing long term debt. The higher risk of inflation will be accounted for in higher cost of funds for U.S. debt issuance neutralizing the impact of higher inflation.⁴⁰

The U.S. government has reached a point where fiscal consolidation is no longer a choice, but rather a necessary reality. The U.S. must make difficult policy choices and sacrifice

⁴⁰ The inflation would no longer be unanticipated by the market and therefore would not give the U.S. the opportunity to fund the debt at low or negative real interest rates

some short term growth for the benefit of the medium to long term growth prospects of the economy. This is likely best achieved via a “glide path” approach aimed at reducing government spending and increasing government revenues over a longer period of time (say, a decade) which will allow for the consolidation to take effect without causing too large of a negative shock to growth in the U.S. economy. Unfortunately the U.S. will likely have to start delivering fiscal consolidation at a time when the U.S. consumer, the largest contributor to U.S. growth, will also likely continue to delever. This dynamic will make it more difficult for consumer spending to replace the short term income lost from either cuts in government spending or increases in taxes. The size of future government obligations combined with both a private and public sector deleveraging backdrop likely means that changes will have to be made to both the revenue side and expenditure side of the U.S. fiscal budget in order to try to bring the U.S. deficit and debt/GDP ratio back to a sustainable level. However, the data above suggests that the largest future obligation as it relates to U.S. government spending will be from mandatory entitlement spending, in particular spending on healthcare. Entitlement reform will have the largest impact reducing government spending, and more importantly giving the government the ability to shift some mandatory spending back to those discretionary items that have a larger long term multiplier effect on the growth rate of U.S. GDP.

The bigger take away is that the government must re-evaluate the way it spends taxpayer’s money. Following the recession in 2007-9 companies across the U.S. and the world re-evaluated the way their cost structures and business’ were designed and made the necessary cuts and changes to ensure that the business would be sustainable in a backdrop of slower growth in developed economies. The U.S. government must follow a similar approach.

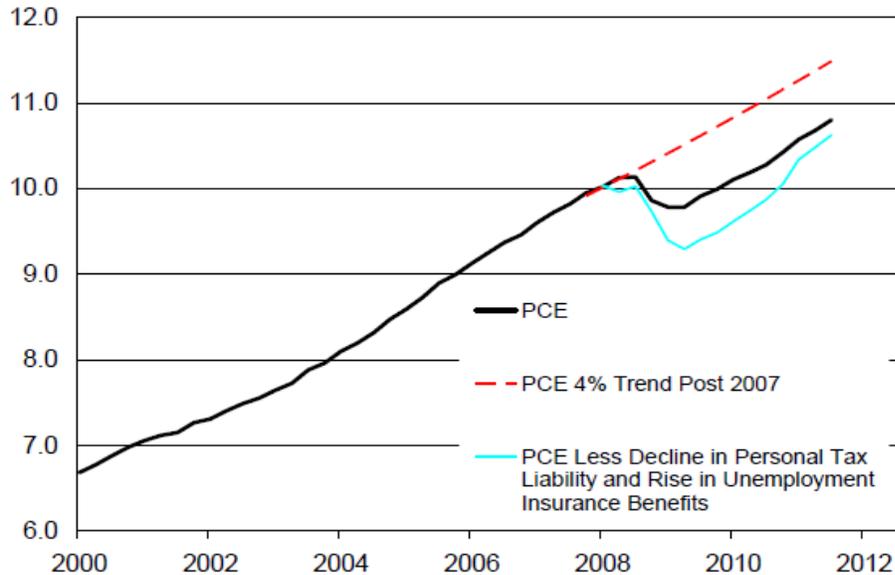
Our analysis shows that the U.S. government has likely over invested in entitlement spending and under invested in those sectors of the economy with the highest return on investment; specifically infrastructure, technology and education spending. However, simply throwing more taxpayer dollars at a given sector, education for example, does not guarantee that the dollars are being used in the most efficient manner.⁴¹ The U.S. must ensure that the dollars being spent on goods such as education, which have long term positive impacts on the

⁴¹ A 2010 documentary, *Waiting for Superman*, attempts to highlight some of the inefficiencies in the public school system in the U.S. While some of the data in the film has been debated in the press, the film serves as an example of some of the research and topics starting to be discussed as it relates to increasing the efficiency and return on investment in various sectors of the economy.

U.S. labor force (positive externalities), are being spent in a thoughtful manner that gives economic agents in the sector the proper incentive to perform and produce results that coincide with a higher quality output. This idea gets back to the concept of incentives, which is extremely important as it relates to the likely behavior of economic agents in an economy. Fiscal policy should attempt to give the people the incentive to use the taxpayer's dollars in the most efficient manner as possible. The medical system in the U.S. seems to fail at giving the consumer the incentive to take preventative measures as it relates to good health as well as seeking the lowest cost, highest quality provider when in need of medical attention. The structure of this system needs to change in order to give the consumer the proper incentives to reduce waste, and hopefully in the end reduce the cost of healthcare in the U.S.

The U.S. should also not assume that the current low interest rates they are enjoying, which exist partly due to monetary stimulus and partly due to a flight to quality bid stemming from the debt crisis in Europe, will be in place indefinitely. The low financing rates in the U.S. treasury market have allowed the government to embark on a variety of discretionary stimulus packages to help offset the sharp drop off in consumer demand following the 2007-9 recession without causing interest expense to rise as a percentage of government outlays. The stimulus packages have translated into spending on staples via government transfer payments resulting in an increase in corporate profits without the need for corporations to hire additional labor. Figure 41 shows the difference between trend growth in personal consumption expenditures

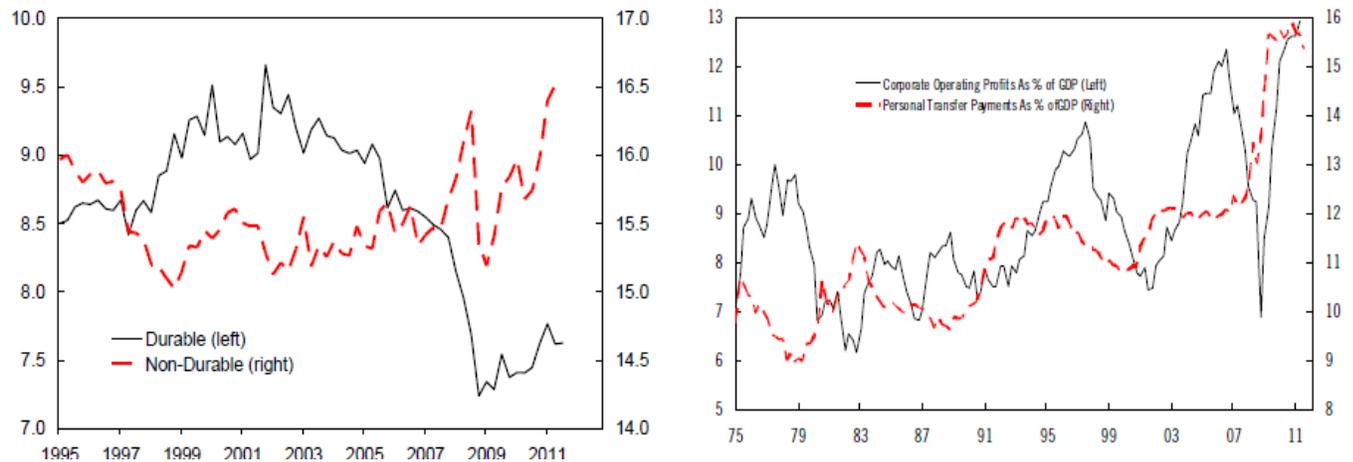
Figure 41: Personal Consumption Expenditures (\$TRLN): Actual PCE versus 2007 trend versus PCE less stimulus “transfers”



Source: Weiting 2012

just prior to the recession versus actual expenditures and actual expenditures less the income earned from declines in the personal tax rate and increase in unemployment benefits. The graph highlights how the stimulus has helped contain the drop in consumer spending as consumers have tried to pay down debt and respond to the drop in income from higher unemployment. Figure 42 shows that the majority of this spending power has been used to buy non durable goods and has resulted in an increase in corporate profits without a corresponding increase in employment. Usually this type of short term fiscal stimulus would be

Figure 42: Left: Nominal Durable and Non Durable Purchases as % GDP. Right: Corporate Operating Profits and Government Transfer Payments as % GDP

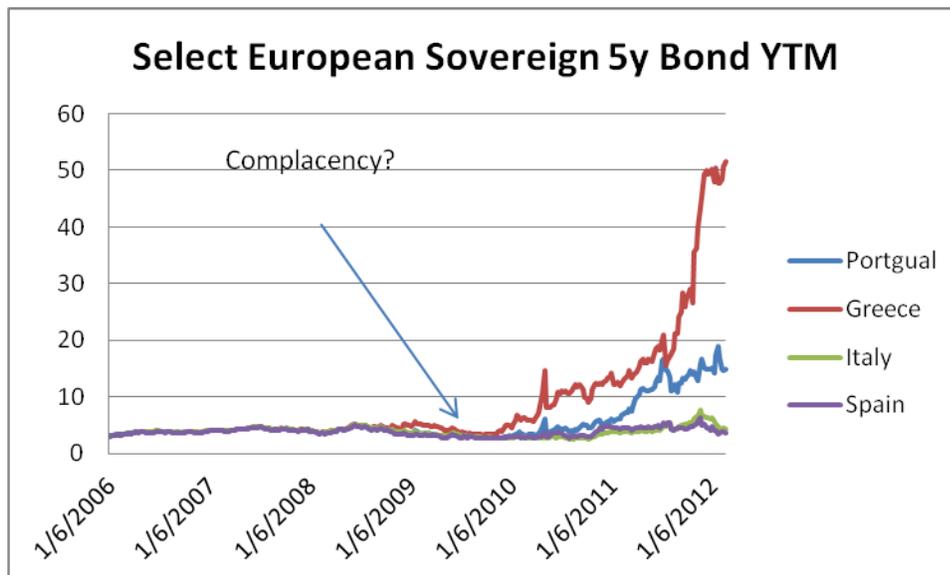


Source: Weiting, 2012

viewed as a positive Keynesian response to the drop in demand from the 2008 recession. However, as the perception of the safety of U.S. government bonds falls in the market the government will likely not be able to continue to provide this type of short term stimulus to the market without an increase in the cost of funds. The government will also likely be forced to consolidate spending and raise taxes in order to pay for future obligations. In 2011 the OMB predicted discretionary spending to be 38.4% of outlays versus mandatory spending at 61.6%. By 2021 the OMB estimates that mandatory spending will account for 70% of outlays versus 29.7% for discretionary. (Weiting 2012)

The sovereign debt crisis unfolding in Europe is a perfect example of how quickly the participants in the capital markets can change their mind on the appropriate risk premium and financing rate they use when buying government debt. If sovereigns rely on foreign investors for a large percentage of funding (like the U.S.) they are subject to a rapid re-pricing of funding costs. Figure 43 shows constant maturity five year government bond yields for some well known

Figure 43



Source: Bloomberg

periphery Eurozone countries. Prior to the onset of the “crisis” and realization by the market that these economies had potentially unsustainable debt/GDP ratios and structural underpinnings in the economy that could prevent necessary reform (i.e, uncompetitive labor costs) the market priced the risk of these four sovereigns at approximately the same level. The chart clearly illustrates how quickly the market can change its mind on the credit worthiness of a sovereign and this can drastically increase the interest burden of the government causing a vicious downward spiral in the government’s ability to service the debt at economically viable interest rates. Towards the end of 2011 the rates on the Italian and Spanish debt started falling mostly as a result of large European Central Bank (ECB) intervention.

The U.S. should continue to try to push past the political barriers and start implementing fiscal reform before the market forces the policymaker’s hands. If the U.S. government fails to act the market could force them to implement front loaded austerity measures which would act as a significant drag on growth and likely push the U.S. economy back into recession. This would lead to further reductions in tax revenues and amplify the problem. Empirical research favors the U.S. government trying to consolidate closer to 2% of GDP to ensure U.S. can slowly implement the necessary tax reform and spending cuts without tipping the economy back into recession. While this solution likely means sub par growth for the U.S. economy over the next

three to five years it should give ample time for the consumer to rebuild their net worth and savings following the 2007-9 recession, and the market should reward the fiscal consolidation with lower long term funding costs and risk premium. This should result in lower long term tax rates for the U.S. and allow the U.S. to maintain a long term competitive position in the global economy. There is no free lunch in economics. The debt excess' leading up to the financial crisis cannot be solved simply by transferring the overindebted consumer sector to the government's balance sheet. Consolidation must take place at some level in order to bring debt levels back in line with the earning potential of the economy.

V. Implications for Monetary Policy – Pushing on a String

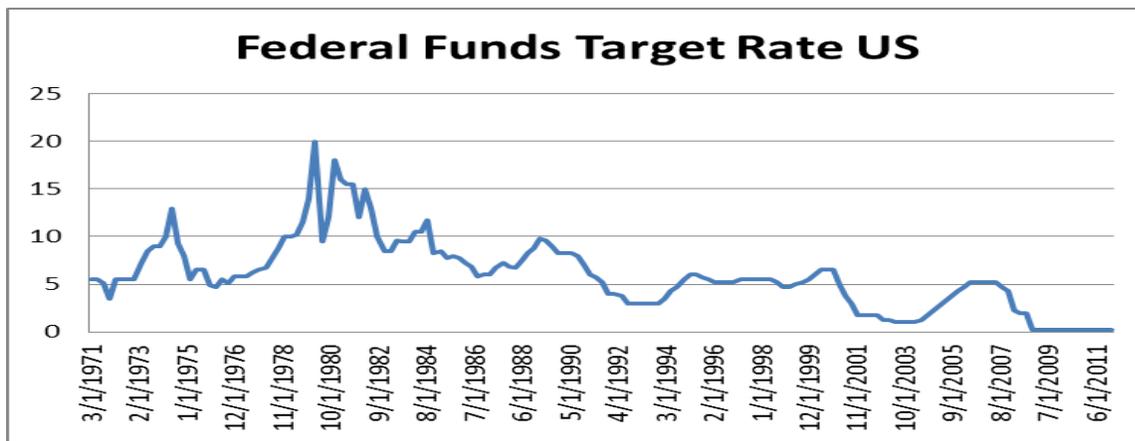
The Federal Reserve in the U.S., led by Ben Bernanke since 2006, has a dual mandate to maximize employment and maintain price stability. As discussed earlier in the paper, the Fed has used the Federal Funds target rate to set short term interest rates in the U.S. to help control the cost of funds in the market and therefore control the demand for funds and the velocity of money. Historically lower levels of inflation throughout the U.S. economy have given the Fed the ability to act aggressively in response to economic shocks as well as keep interest rates low for a longer period of time to ensure that the easy monetary policy has a chance to properly flow through the economic channels and stimulate demand.⁴² Globalization has also helped award the U.S. with lower inflation as companies can outsource the manufacturing of products to other emerging market regions of the world (e.g., China) where the cost of labor is much lower than the U.S. These labor cost differences offer another explanation for the global imbalances discussed earlier in the paper where low cost of labor export countries accumulate large amounts of dollar currency reserves as a result of exporting goods back to the U.S.

The problem with traditional monetary policy via the use of altering short term interest rates is that the effectiveness of the policy tool is limited by the zero bound of interest rates as well as the demand for credit. As this paper has discussed in detail, the financial crisis and great recession in the U.S. caused a significant drop in household wealth and exposed a heavily overleveraged consumer and now overleveraged government sector. Against this backdrop, the consumer is forced to use any excess wages to try and de-lever their personal balance sheets.

⁴² See Figure 9 of this report.

As business' sense the consumer pulling back they also pull back their spending and investment plans. This negative feedback loop causes a large pullback in the demand for credit. This lack of demand for credit is not driven by the price of credit but rather the need to get rid of excess debt. This can cause the Fed's low interest rate policy to be ineffective as lower borrowing rates fails to spur an increase in lending activity, an increase in the velocity of money

Figure 44



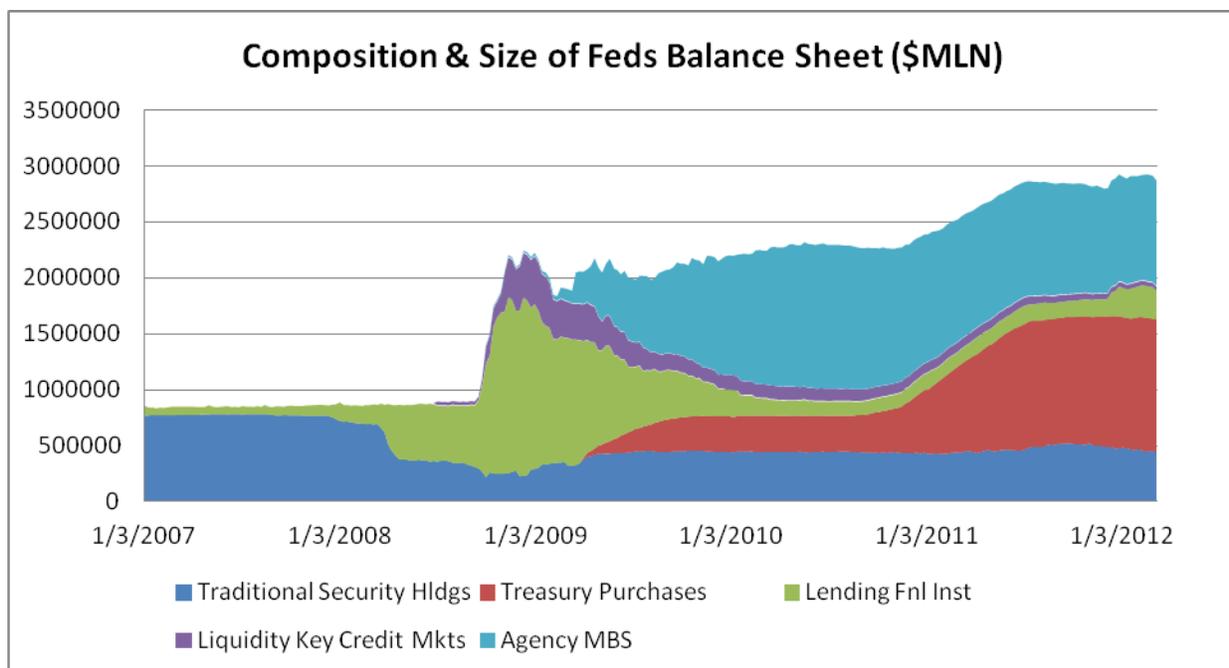
Source: Bloomberg

and therefore an increase in aggregate demand. Figure 44 shows the historical Fed Funds target rate going back to 1971. At the December 16, 2008 meeting the U.S. Fed cut the target fed funds rate to between zero and .25%. These extraordinary actions failed to spur lending as banks continued to be very cautious extending loans as they continued to try and rebuild their capital positions following the collapse in housing prices and assets tied to housing following the recession. The banks were also trying to adhere to new regulations requiring a higher percentage of tangible equity capital on their balance sheets. Meanwhile, as discussed in detail earlier, the consumer continued to pay down debt, boost savings and rebuild wealth and therefore did not respond to the Fed's extremely accommodative policy with increased demand for loans.

As the economy fell into recession awash in debt the Fed did not want to risk the threat of deflation throughout the economy. The Fed was therefore forced to engage in unconventional monetary policy in order to try and stabilize prices and continue to try to stimulate demand. Despite the lack of demand for credit, the Fed wanted to make sure those with the ability to

refinance were able to do so at low interest rates. The Fed understands how deleveraging can impact their mandate of maximum employment and responded with a dramatic increase in their balance sheet, increasing the supply of dollars in the market while providing a large source of demand for treasury securities, agency debentures and agency mortgage backed securities to ensure that access to low mortgage funding helped offset the collapse in the housing sector. (See Figure 45) The Fed's balance sheet has increased from just under \$1 trillion prior to the financial crisis and recession to just under \$3 trillion. The majority of this increase has come in the form of treasury and agency MBS purchases. The Fed's purchases in these sectors has helped keep the cost of mortgage credit low through the Fannie Mae, Freddie Mac and GNMA mortgage origination channels, and has also helped the U.S. government issue treasury securities to fund the stimulus packages and deficits without

Figure 45



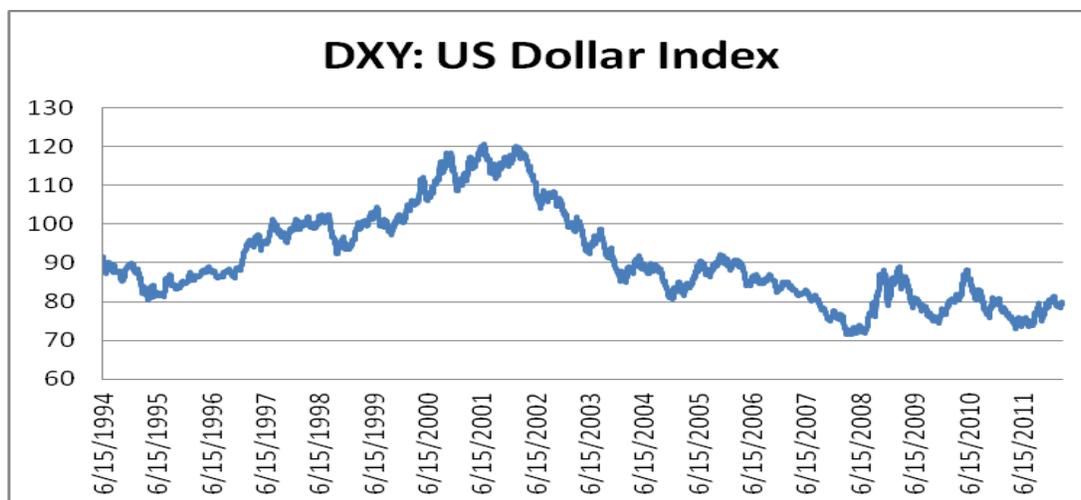
Source: Federal Reserve Bank of Cleveland

without causing an increase in the cost of funds for the government.

The tame inflation backdrop has allowed the Fed to increase their balance sheet as described above and focus on doing everything in their power to help aid the consumer through a painful debt reduction process. However, these actions do not come without their unintended

consequences. The most obvious threat from these actions is that if and when the economy does recover, excess capacity falls and wages start to rise the Fed will not be able to pull back this excess liquidity in time to stop a dramatic increase in inflation as the demand for credit returns to the U.S. economy. If the inflation genie is let out of the bottle the Fed risks losing control of inflation expectations in the U.S. which could force the Fed to go from a state of extreme excess accommodation to excess tightening. However, given the large amounts of debt in both the consumer and government sectors in the U.S. economy the Fed is probably more willing to risk inflation rising above their target level versus risking a deflationary spiral. Inflation can be a positive force for holders of large amounts of debt.⁴³ This extraordinary accommodation by the Fed can also have an impact on the value and purchasing power of the U.S. dollar. If the Fed is printing dollars and increasing the amount of base money in circulation in order to fund

Figure 46



Source: Bloomberg

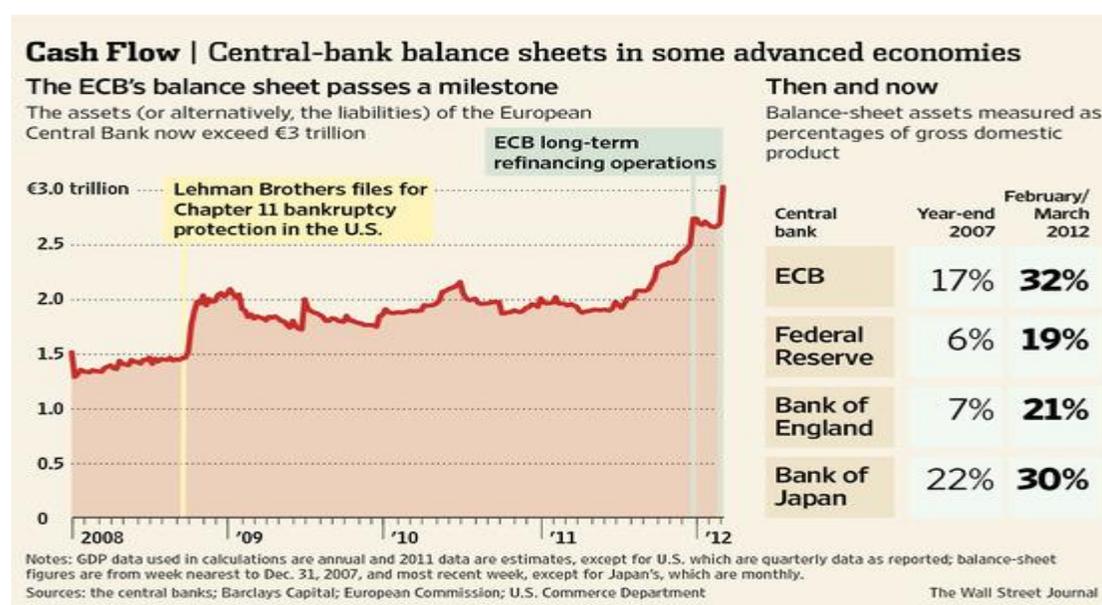
debt purchases⁴⁴ the increased supply of dollars can cause a drop in the value of the currency when compared to other large trading partners in the U.S. Figure 46 shows that the value of the dollar has fallen quite dramatically since the beginning of the 21st Century. However, the dollar

⁴³ Holders of debt get to pay back their debt with future dollars that are less valuable. Inflation also increases nominal GDP which can increase the amount of funds available to pay off debts at the federal level as described earlier in the paper

⁴⁴ Also commonly referred to as monetization of the debt

has not fallen as much as many would expect following the dramatic increase in the Fed's balance sheet since 2008. One reason for this is because the dollar still benefits as a "flight to quality" currency. In times of financial distress, including 2008, money tends to seek safety and liquidity. Despite the grim fiscal outlook in the U.S., U.S. treasury securities are still viewed as one of the safest and most liquid instruments in the world and act as a favored store of value for investors seeking safety of principal. This dynamic helps explain the increase in the value of dollar during the crisis in 2008 as well as the small rebounds in the dollar during the sovereign debt crisis in Europe. It is also important to note that the Fed has not been the only central bank engaged in extraordinary accommodation. Figure 47 from a 2012 Wall Street Journal article

Figure 47: Central Bank Balance Sheet Expansion



Source: WSJ March 6, 2012

shows the dramatic increase in the European Central Bank's balance sheet since 2008, with a dramatic increase since late 2011. The graphic also shows the dramatic increase in the ECB, US Federal Reserve, Bank of England and Bank of Japan's balance sheets as a percentage of each countries GDP from the end of 2007 to early 2012. As multiple central banks engage in quantitative easing the currency effects are offset as the increase in supply of U.S. dollars, for example, is offset by the increase in the supply of British Pounds from the Bank of England. This is often referred to as competitive devaluation and results in neither countries currency

depreciating dramatically versus those currencies associated with central banks engaged in quantitative easing.

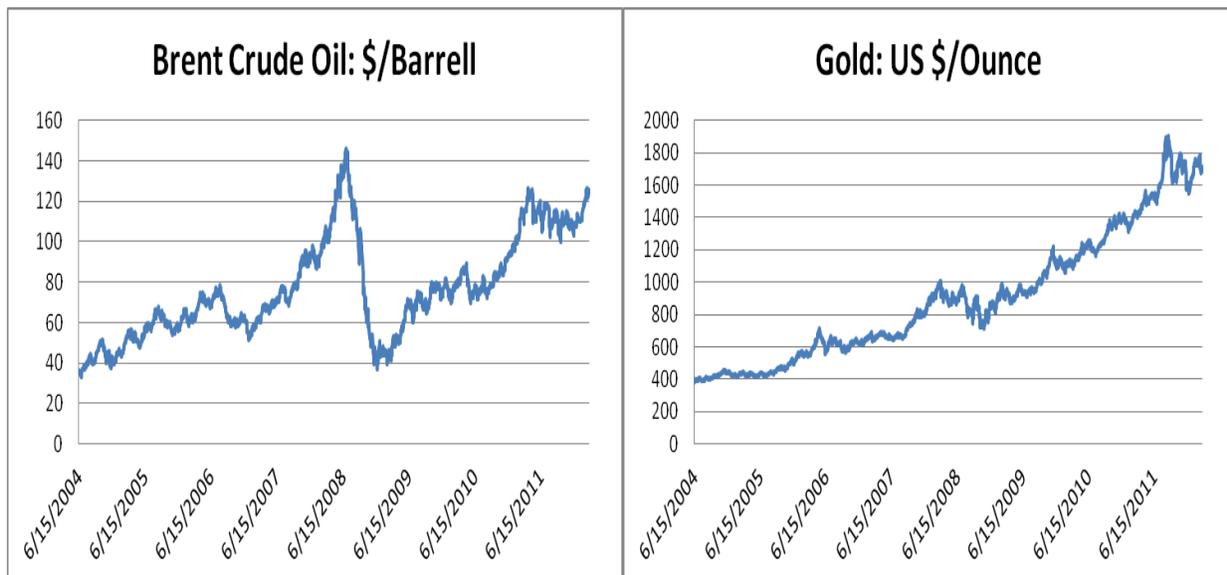
While the focus of this paper is not currency implications of global central bank policy, it is important to quickly note the impact that this increase in money circulation in multiple developed economies can have on global growth and rebalancing the global economy. The first is that those economies that have better growth prospects, less debt and do not have fixed currencies pegged to one of these developed economies should see their currencies appreciate. The appreciation of emerging market currencies should, over time, increase the purchasing power of these countries relative to the developed economies. In theory, this should help offset some of the global imbalances discussed earlier in this paper. As the citizens of the emerging market economies see their purchasing power rise in relation to the developed economies they should be able to eventually purchase more goods produced in the developed economies with depreciating currencies. This should help instigate larger amounts of exports coming from these developed countries to the faster growing emerging market countries of the world. If this happens the developed economies should see their trade deficits shrink and eventually turn to surplus' increasing GDP and helping rebalance the global economy.

Unfortunately, this is a process that will likely take decades to play out as the emerging economies such as Brazil, China, India etc. will need to develop a liquid and trusted capital markets so that their currencies will have a store of value for those international players that want to invest and transact in the currency. Those countries that have a fixed currency peg to one of these developed countries engaged in printing money can also be negatively affected as they try and sell domestic currency in order to buy the currency of the peg country. These actions prevent the appreciation of the domestic currency in the country instituting the peg and can lead to an increase in inflation. The country trying to maintain the peg in essence imports the inflation implications of the accomodative monetary policy in the developed country. This should force these faster growing countries with a fixed currency regime (e.g., China) to allow their currencies to start to float and appreciate in line with the growth of the country. The big picture take away is that those developed countries with large amounts of debt and extremely accomodative central banks (i.e., The U.S. and Europe) should see the purchasing power of their currencies fall at the expense of an increase in purchasing power for those faster growing, more fiscally sound emerging market countries such as Brazil, India and China.

The discussion above outlines the Fed's response to the financial crisis and Great Recession of 2008. The overindebted U.S. economy has caused a significant drop in the demand for credit in the U.S. The Fed, which has traditionally used changes in the short term interest rate as a transition mechanism to drive the increase or decrease in the demand for credit in the economy, finds their traditional policies ineffective as they lowered interest rates to zero to help promote economic growth. The Fed has responded by engaging in extraordinary accommodation including unsterilized purchases of dollar denominated assets and a dramatic increase in the size of their balance sheet. The Fed has clearly chosen to focus on their mandate of maximizing employment as the expense of worrying about the inflationary impact (and currency impact) of their policy. These actions by the Fed indicate the Fed fully understands the negative deflationary feedback loop that can result from an economy where both the consumer and fiscal sector have dangerous debt burdens. The Fed also understands the difficult fiscal choices that will likely have to be made in the near future and the negative implications those choices will have on the potential growth of the U.S. economy.

However, the Fed must be careful in making sure their desire to promote growth in the U.S. economy does not come at the expense of the Fed's independence. If the market starts to assume that the Fed's actions are partly aimed at financing the government's deficit to ensure that the government does not experience an increase in interest rates the market will likely revolt quickly dramatically increasing inflation expectations and inflation premiums in the market. The actions of the Fed and other developed market central banks have already increased the cost of certain dollar based commodities in the market (Figure 48) which makes it much more difficult for the Fed to continue to engage in accommodative policies. If the U.S. government fails to consolidate and reduce their perpetual deficits as the markets force the Fed to stop their accommodative policies via threats of long term increases in inflation it could potentially cause a rapid increase in interest rates in the U.S. economy and further complicate the deleveraging process.

Figure 48



Source: Bloomberg

VI. U.S. Demographics: Implications for the Younger Generation

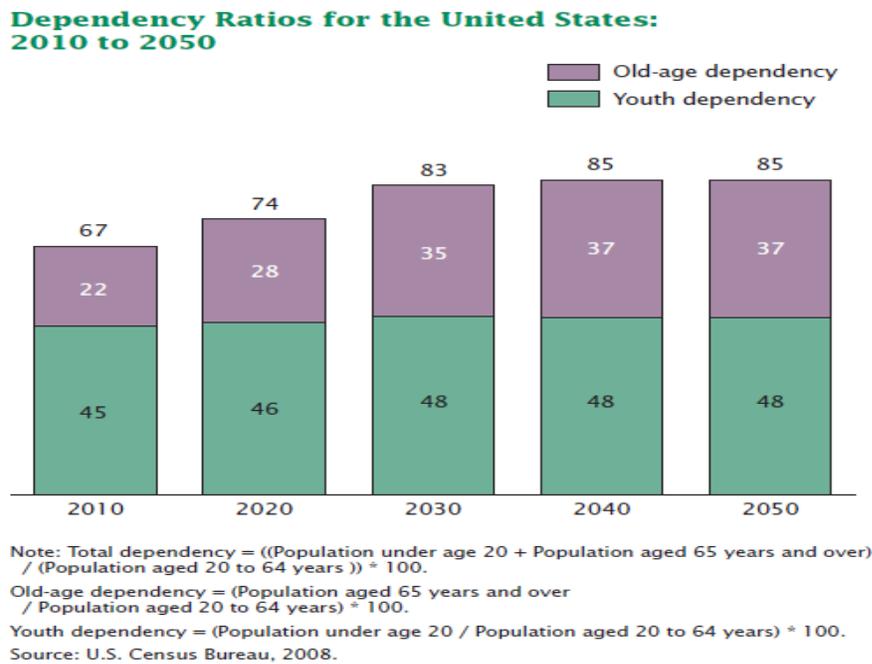
This paper has walked through the U.S. economy with a focus on the consumer, the government, the Fed and the difficult road ahead for the U.S. following the financial crisis and recession in 2007-9. Unfortunately for the U.S. the high levels of debt accumulated at both the consumer and government level imply that the higher growth rates, and lower business cycle (GDP) volatility experienced since the early 1980s was partly due to the ability of the government and the consumer to take on more debt than they could service based on the growth potential of the U.S. economy. This means that higher growth rates in the recent past likely borrowed from the growth potential of the U.S. economy over the next decade. As the U.S. enters this new era of economic reality it is very likely the road to prosperity will come with more volatility and difficult decisions that impact one group of citizens at the expense of another. Prior to discussing these potential decisions, and how they may impact the younger generation in the U.S. in particular, it is important to briefly touch on the demographic trends in the U.S.

The demographic trends in the U.S. do not help alleviate any of the problems discussed thus far in this paper. The dependency ratio is an often cited demographic indicator that

attempts to show how many people in a given economy are dependent on the working population. The dependency ratio is sometimes broken up into a “youth” dependency ratio showing the number of younger people supported by the working population and the “elderly” dependency ratio showing the number of elderly supported by the working population. The total dependency ratio combines these two metrics. The higher the dependency ratio the higher the burden is on the working population to support the non working consuming population in the economy. A high youth dependency ratio suggests that a large amount of resources need to be given to the child care and education sectors to make sure this young generation enters the labor force as productive economic agents. A high elderly dependency ratio suggests a higher amount of resources likely going towards healthcare services as a large portion of the population enters retirement and ages. Figure 49 shows current and estimated dependency ratios in the U.S. from the U.S. Census Bureau. (Vincent, 2010) The figure shows the projected increase in the dependency ratio in the U.S. especially as it relates to the older population. In 2010 approximately 13% of the U.S. population was 65 and older, and this percentage is expected to increase to 19% by 2030. This increase in the elderly population is due to the baby boomer generation⁴⁵ moving out of the labor force and into retirement as the elderly dependency ratio is expected to increase from 22 to 35 between 2010 and 2030.

⁴⁵ In the report by Vincent the baby boom generation was expected to be around July 1946.

Figure 49: Dependency Ratios



Source: Vincent (2010)

This puts a higher burden on the current and future young working population to support a larger number of dependent elderly workers. This aging trend is complicated by the rapidly rising health-care costs and inefficient health care system in the United States. This demographic dynamic coupled with the over leveraged consumer and increasing debt burden at the government level leaves policy makers with difficult choices and introduces new risks to the younger population that were not necessarily in place when the baby boomers were coming into their prime working years. Policy makers are going to be forced to decide if they would like the burden of unfunded entitlements to be borne more by the younger population via lower future entitlements, higher taxes, lower return on savings (financial repression) or a combination of all of these, or if they will scale back the entitlements promised to this boomer generation about to enter retirement. Regardless of the policy choices made it is apparent that the younger generation will have more responsibility over the next ten to twenty years to take on more of their own burden as it relates to retirement planning and health care costs.

This implies that this younger generation will have to save more of their discretionary income. This is a natural response in an over-leveraged economy and over the long run will result in a stronger foundation for future growth in the U.S. However, as the younger generation

saves they must realize the tail risks that are now in front of the U.S. economy as both fiscal and monetary policymakers try to maneuver the U.S. through what could be a decade of lower consumption at the individual level, at the fiscal level or at times both. For example, if the Fed continues to use everything in their monetary tool kit to keep long term interest rates and mortgage rates low to help aid the recovery those increasing their savings in the economy must realize that the future purchasing power of those savings is likely at risk. The current monetary policy framework could result in lower global purchasing power for those paid in U.S. dollars. This lower purchasing power could be the result of a lower dollar as the Fed continues to potentially increase the monetary base to finance purchases of long term treasuries. The lower purchasing power could also come from an increase in inflation expectations without a corresponding increase in inflation premium earned on longer term fixed income investments as the Fed's presence in the treasury market prevents higher rates, or simply from negative real interest rates as the return earned on traditional savings vehicles such as money market funds, certificates of deposit and fixed income securities are not high enough to keep up with inflation.⁴⁶ Savers and investors must be aware that while this policy response is helping those with high amounts of debt refinance or lower the debt service requirements of that debt it is stripping savers from returns required to maintain the purchasing power of their money.

In response to this threat savers will likely have to be more creative in the way they diversify their savings in hopes of maintaining their purchasing power and standard of living on a global scale. Bill Gross, chief investment officer for PIMCO, wrote in a 2011 investment outlook, "few Americans are aware that the dollar's recent 12-month depreciation of over 15% is an explicit tax on their standard of living." Gross recommends diversifying some of your investments or savings away from U.S. dollar assets to those countries and currencies that offer a higher real rate of return (after taking local inflation into account) and have better growth prospects. (Gross 2011) This implies that young savers and investors will likely have to be more creative with their funds in terms of asset allocation in order to earn a reasonable return. This creativity could include allocating more of their assets to savings, fixed income and equity investments that are tied to those regions of the world with less debt, better fundamental economic underpinnings including better demographics, savings rates and investment when compared to those developed countries that have borrowed from future growth with high levels of debt.

⁴⁶ Financial repression as described earlier in the paper

There are also obvious threats from fiscal policy makers for the younger generation in the U.S. Some of these threats have been explicitly stated or implied by the discussions above. The biggest risk lies in the fact that the U.S. government has a very difficult balancing act as it relates to bringing the budget into balance and reducing the stock of debt without moving too quickly as to bring the economy into an austerity based recession.⁴⁷ The hope is that the government starts to responsibly move to get the fiscal house in order prior to the market forcing its hand. In this scenario the business cycle is likely to be more volatile and the U.S. economy may hit stall speed or potentially fall into shallower recessions more often than was seen in the past twenty years in the U.S. This more volatile backdrop suggests that the younger generation in the U.S. should exercise more caution in regards to their own personal balance sheets. While some debt is good, especially given the threat of higher future inflation, the new generation entering the work force must be vigilant in taking responsibility for their own financial house and not repeating the mistakes of the most recent generation. A higher savings rate will help cushion the younger U.S. consumer from the ebbs and flows of the business cycle as the U.S. tries to pay for the mistakes of the past. If the government fails to act the threat will grow that the market will not continue to perpetually fund U.S. deficits and rates will rise. This scenario could be partially offset by domestic holdings of government securities increasing as the population ages and shifts focus to a more fixed income centric portfolio of investments. However, this will not be enough to offset a buyers strike from the large foreign holders of government debt and the resulting higher government interest rates will crowd out private investment and hurt long term valuations for traditional long term investments such as U.S. equities. This scenario also bodes for holding more cash than normal as this gives the younger consumer the flexibility of taking advantage of opportunities that may arise in the market from sudden shifts in investor sentiment. Unfortunately, this later scenario would likely force the U.S. into a front loaded austerity program which would have a detrimental effect on the growth rate of real GDP. The consistent conclusion from the above is that the U.S. consumer would be wise to increase savings as the economy adjusts. Obviously this will not help the short run growth prospects of the economy as this will reduce discretionary spending at a time when the fiscal sector will also likely start reducing aggregate spending.

⁴⁷ The situation in Europe gives the U.S. a decent blue print on the risks and rewards of keeping your fiscal house in order.

If there is one thing this walk through the U.S. economy has shown is that in recent history the U.S. has likely been fairly short sided when constructing various policies. The U.S. has tried and used debt financing to maintain the strong growth rates of the 1980s and 1990s and unfortunately the growth was not strong enough to provide the necessary income to service the debt. The past cannot be changed and the U.S. must move forward making the necessary adjustments to ensure that future generations in the U.S. are given the same opportunities for an increased standard of living and prosperity. In order for this to be accomplished savings will have to increase and the U.S. will have to sacrifice short term growth prospects for the good of long run prosperity.

While this paper is meant to provide a roadmap for future policy decision making, the younger generation should also take their democratic responsibility seriously and try to vote for local, state and federal leaders that are not afraid to tackle the long term issues in the U.S.

VII. Conclusions

It is never easy to make decisions that could cause short term pain at the expense of long term gains; however the alternative is to wait for the markets to force you to make difficult decisions. The U.S. has a history of flexibility and adaptability and the country must come together and make sacrifices as a whole in order to avoid a situation like the one being played out in Europe. As policy solutions are discussed and proposed the U.S. must get back to encouraging the basic building blocks of economic growth: savings, investment, education and technological progress. The policies surrounding taxes, education, infrastructure, investment, entitlements, transfer payments and even monetary policy should **encourage and even give incentives** to consumers and business' that focus on these economic building blocks. If costs of certain services, such as healthcare for example, are increasing at a more rapid pace than the economy as a whole this likely means this sector needs to be restructured. Barriers to entry should be reduced so that competition can enter the market and reduce costs. The consumer should also be given the proper incentive to take quality and price of a service into account, and that may mean the consumer needs to bear some of the cost so that they consciously think about cost when making decisions. Restructuring these types of services will hopefully free up future funds to help those citizens that truly are in need of financial assistance.

The days of smoothing out the business cycle through debt financing, lower short term interest rates and unlimited government stimulus have likely come to an end. As the financial crisis and great recession of 2007-9 unfolded the world saw business' and consumer's across the globe adjust. The adjustment process is still unfolding, but we now have companies like GM and Ford that at one point were facing bankruptcy are now profitable again. This is the result of restructuring their cost structure to better align the company with the different economic reality. The public sector must also be willing to restructure in the same fashion and put the welfare of the country ahead of certain special interests. Performance should be evaluated not solely on how much tax payer money is going to the sector, but how much return the taxpayer is getting on those dollars.

The encouraging news for the U.S. lies in the underlying flexibility in the economy. It still benefits from the U.S. dollar's status as the global reserve currency. The labor force is flexible. While the great recession of 2007-9 was extremely painful it proved how the mechanisms are in place to allow for economic adjustment and new investment funds should flow to those sectors of the economy such as energy (natural gas) that have long term growth potential.⁴⁸ The U.S. should take advantage of the spotlight on Europe to start to adjust. The cost of inaction is extremely high and as this paper has demonstrated the economy does not have the same type of fiscal and monetary levers at its disposal to help offset another crisis. The time to start restructuring is now.

⁴⁸ IE: residential Investment, housing related sectors

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