

SUBJECT: Macroeconomic Trends Impacting the Department of Defense (TAB A)

Summary

The U.S. economy is now in the second year of a fragile economic recovery from the largest recession since the Great Depression. The “Great Recession” of 2008-2009 differed markedly from other recent recessions that were precipitated by oil price shocks. Economic downturns caused by spikes in commodity prices (frequently energy prices) are usually short-lived and characterized by rapid post-recession growth. The precipitating factor for the current recession was the bursting of an asset bubble in the U.S. housing market, which forced both the financial sector and U.S. households to de-leverage – the process of reducing debt on both bank and household balance sheets. Investment capital flowed away from speculative projects and into relatively short-term, safe instruments such as U.S. Treasuries. Banks tightened lending standards, reducing the total amount of lending and the riskiness of loan portfolios in an effort to rebuild depleted bank capital. Responding to sharp declines in wealth, households reduced their spending on everything from automobiles to restaurant dining. Reductions in consumer spending and heightened uncertainty over recovery prospects resulted in reductions in physical capital investment. Reduced demand for the goods and services produced by businesses in turn led to waves of layoffs, swelling the ranks of the unemployed. Job finding prospects were diminished by the recession, causing a sharp rise in unemployment durations.

Against this backdrop, the U.S. government used both monetary and fiscal policy to stabilize the economy and stimulate spending. The Federal Reserve provided immediate liquidity to calm financial markets and shore up the banking system. When conventional expansionary policy drove short-term interest rates to near zero, the Fed employed “quantitative easing” such as purchasing long-term bonds to bolster asset prices and lower long-term interest rates.

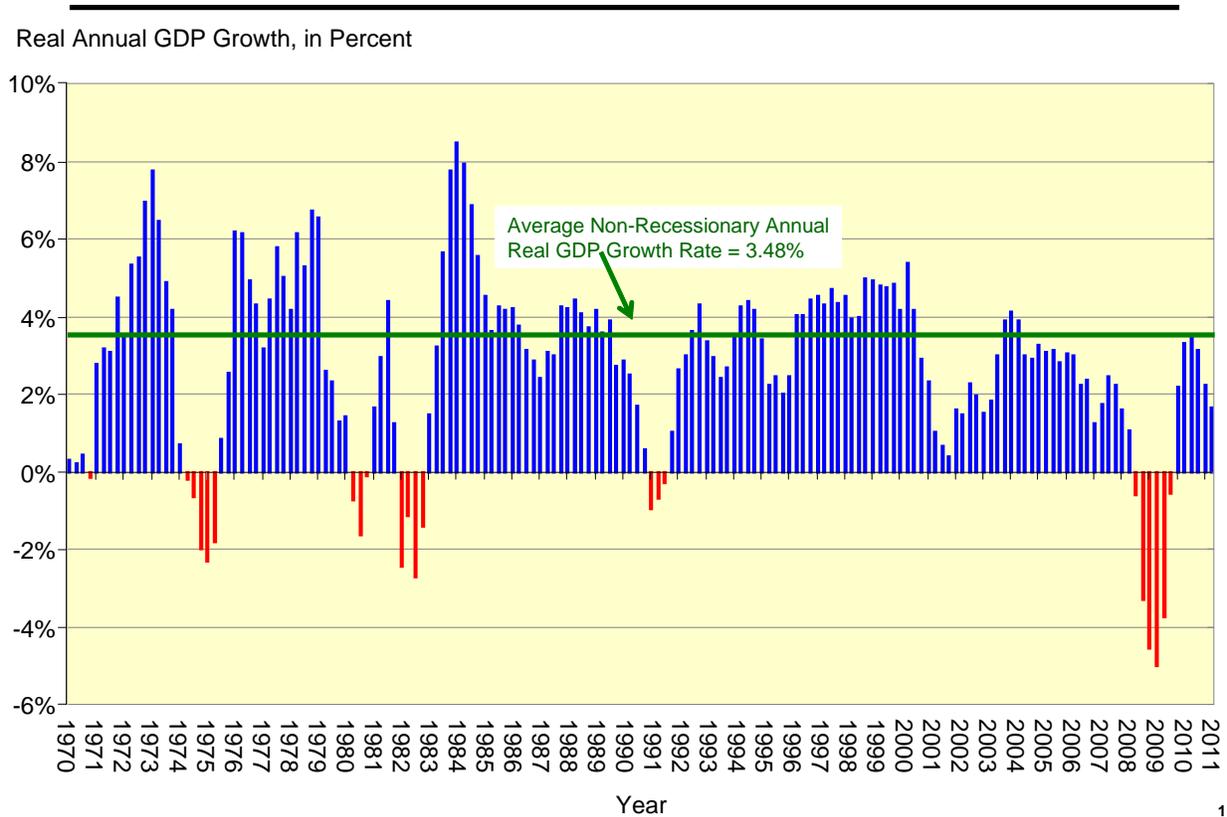
During recessions, tax collections decline as individual incomes and corporate profits fall. At the same time, outlays on income assistance programs and unemployment insurance benefits increase. The combination of reduced receipts and rising outlays widens budget deficits (annual difference between revenues and expenditures). In February 2009, the American Recovery and Reinvestment Act of 2009 (the stimulus bill), raised discretionary spending and lowered taxes, further growing the budget deficit. These policies expanded the federal budget deficit from 2 percent of GDP in 2007 to more than 10 percent of GDP in 2009, with the federal debt (accumulated deficits) held by the public rising from 40 to 70 percent of GDP in over the past four years.

Recent increases in consumer spending and declines in unemployment rates point toward an ongoing recovery, albeit at a sluggish pace. Nonetheless, the protracted political fight surrounding deficit reduction during the summer of 2011 and the subsequent downgrade of the credit rating on Treasury securities shook investor confidence, in the U.S. and abroad. While there is broad consensus that the creditworthiness of U.S. Treasuries is unchanged, our nation’s long-term budget challenges remain. Moreover, a follow-on financial crisis surrounding sovereign debt, particularly debt issued by Euro-area nations, could destabilize global financial markets and threaten the fragile recovery in the American economy.

A Macroeconomic Primer

Economic activity is measured by Gross Domestic Product (GDP), the value of all goods and services produced within a nation's borders. Adjusting for inflation, the United States economy grew at an annual average rate of 3.3 percent from 1983 to 2007. During the 2008-2009 recession, the economy contracted for approximately 18 months, posting the sharpest decline since the Great Depression. (Figure 1)

Figure 1. In 2009, Real GDP Fell by the Largest Amount Since the Great Depression



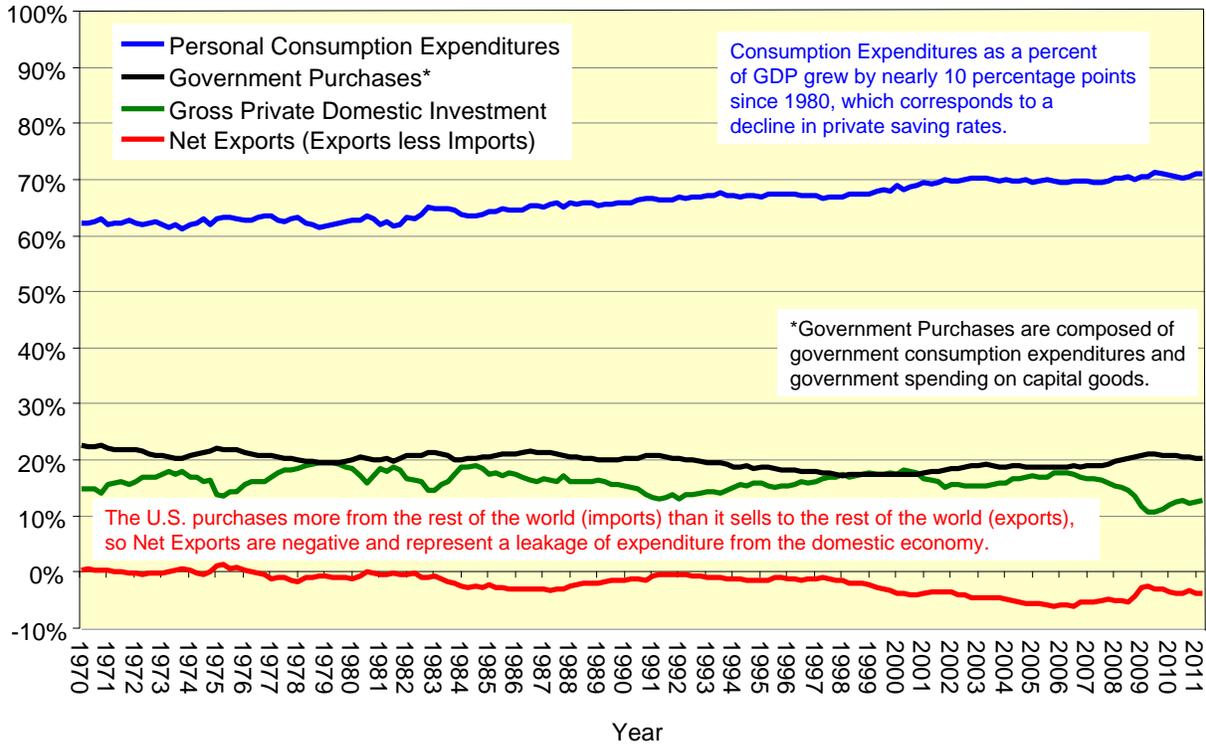
During this contraction, our actual output fell short of our economy's potential output by an amount equal to one-third of our current annual GDP.

Measuring GDP requires that we count up the sum total of a country's economic activity. Accounting for a nation's GDP can be done by three different methods: the product approach, in which the value-added by all producers of goods and services is summed up; the income approach, which measures economic activity by adding the income received by all factors of production used to produce the output; or the expenditures approach, which adds up the spending by all final users of goods and services. These different accounting frameworks all generate the same value for GDP, so the expenditures approach is adopted herein. Four broad expenditure categories comprise GDP: consumer spending, investment (housing, plant and equipment), government purchases, and net exports – a nation's exports less its spending on foreign goods.

In other words, GDP is a function of C+I+G+NX. (Figure 2)

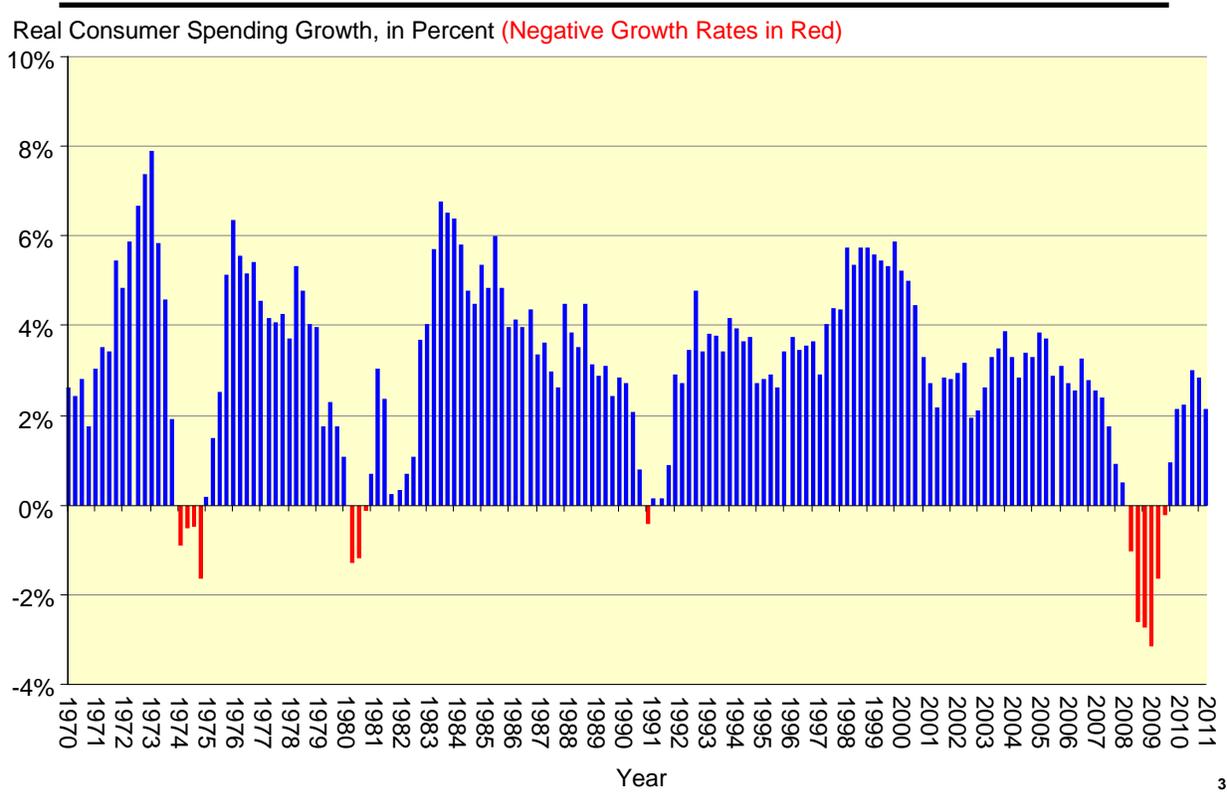
Figure 2. Consumption Comprises 70% of Total GDP

Composition of GDP by Expenditure Category, in Percent



Consumer spending is the largest single component of GDP, representing 70 percent of aggregate spending. During the recent recession, consumer spending fell for 18 months, contracting at a rate nearly double that of the four prior recessions. (Figure 3)

Figure 3. Recent Declines in Consumer Spending Translate into Lower GDP Growth Rates

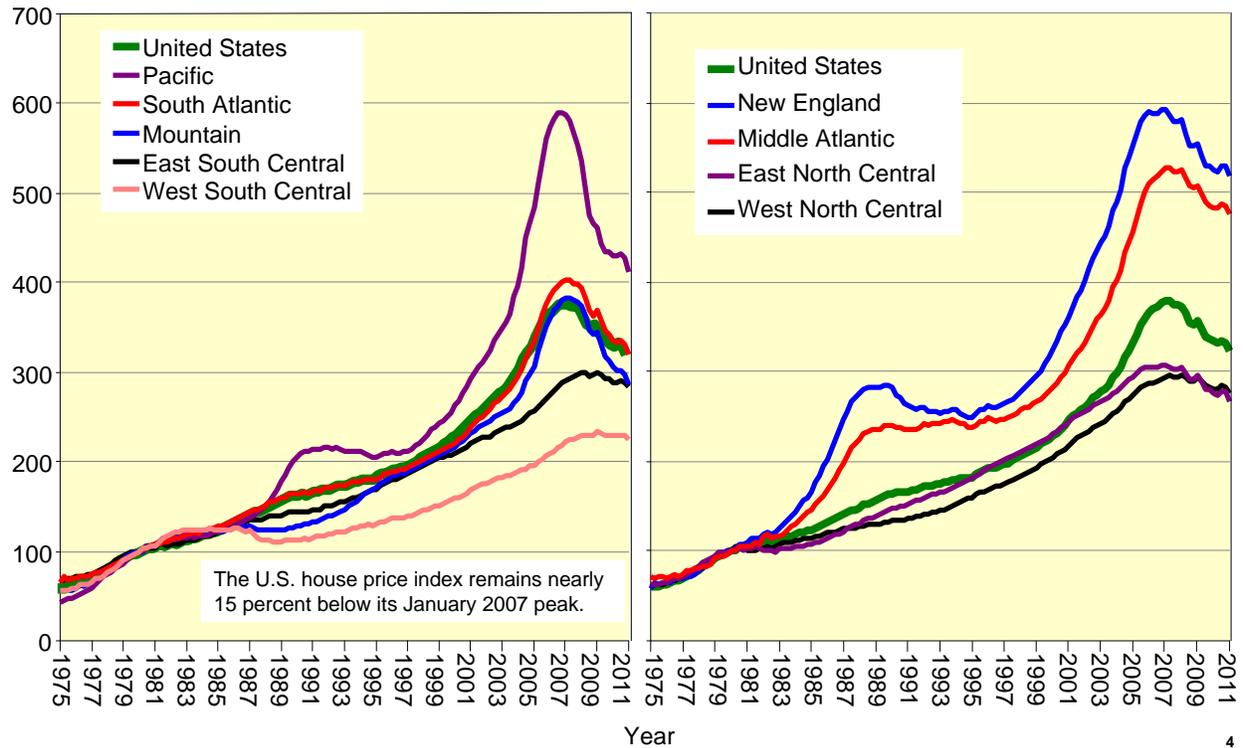


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Consumer spending has been negatively impacted by several forces. First, house price declines have eroded the value of most households' primary asset, their home. (Figure 4)

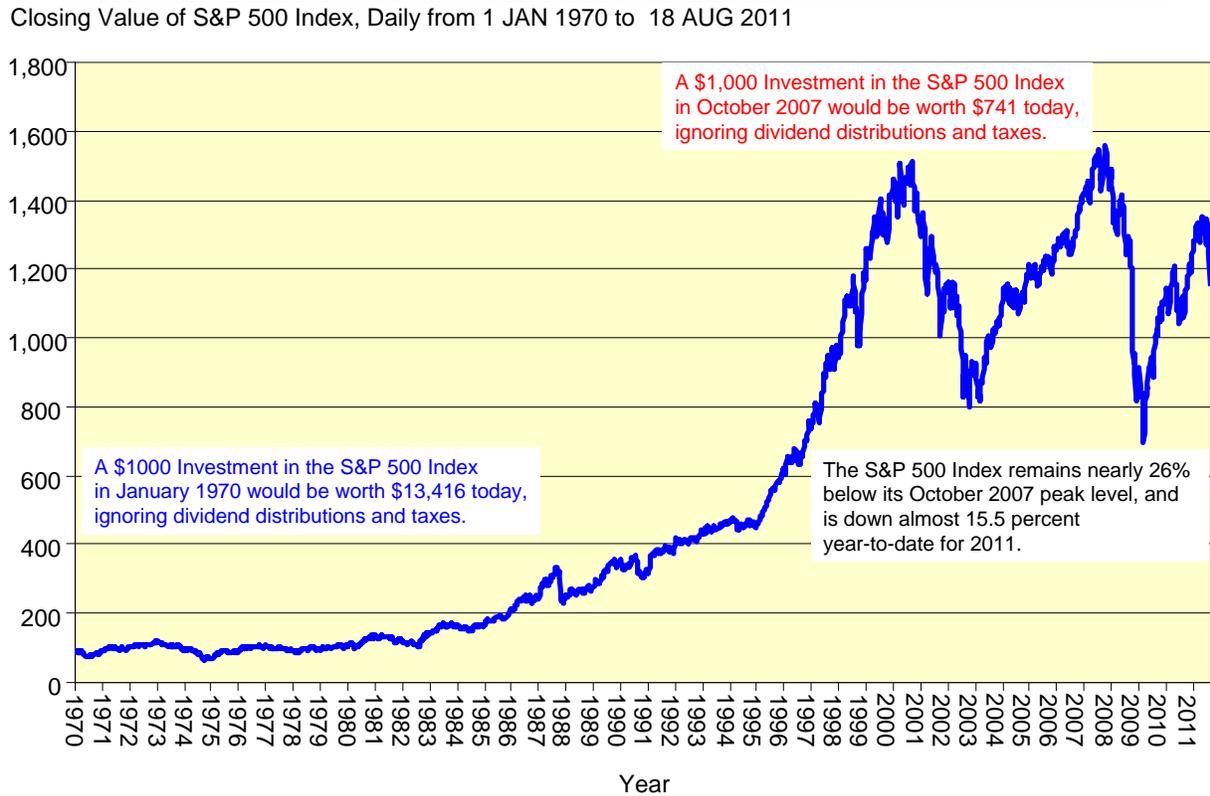
Figure 4. House Prices Rose Faster than the National Average in the NE, SE, and Pacific Regions (Bubble Regions) Through 2006

House Price Indices (1980:Q1=100), Based on Sales Data



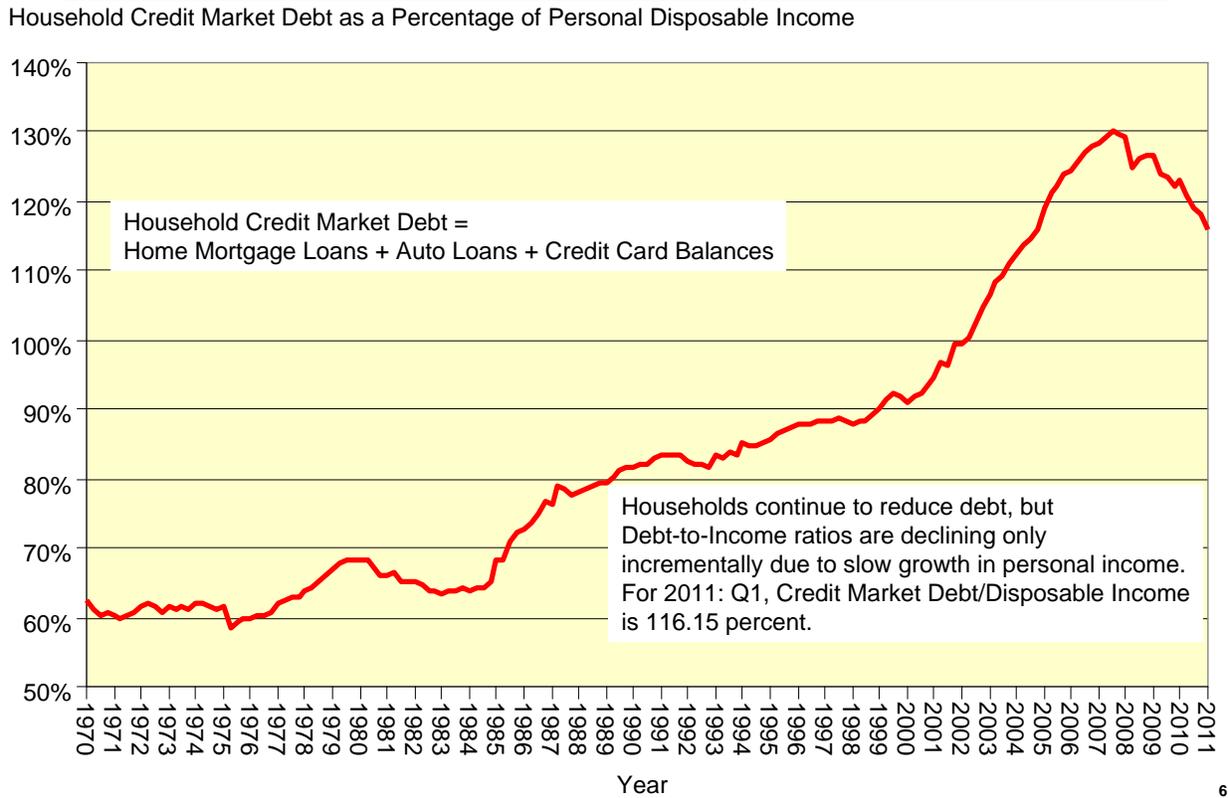
Second, significant losses in the stock market reduced another source of household wealth, retirement savings accounts invested in equities. (Figure 5)

Figure 5. The S&P 500 Index Remains Nearly 26 Percent Below its 2007 Peak Level



Coupled with these losses in household wealth, the credit crunch reduced availability of installment credit and led to stricter bank lending standards. Debt-financed consumption remains significantly constrained (Figure 6).

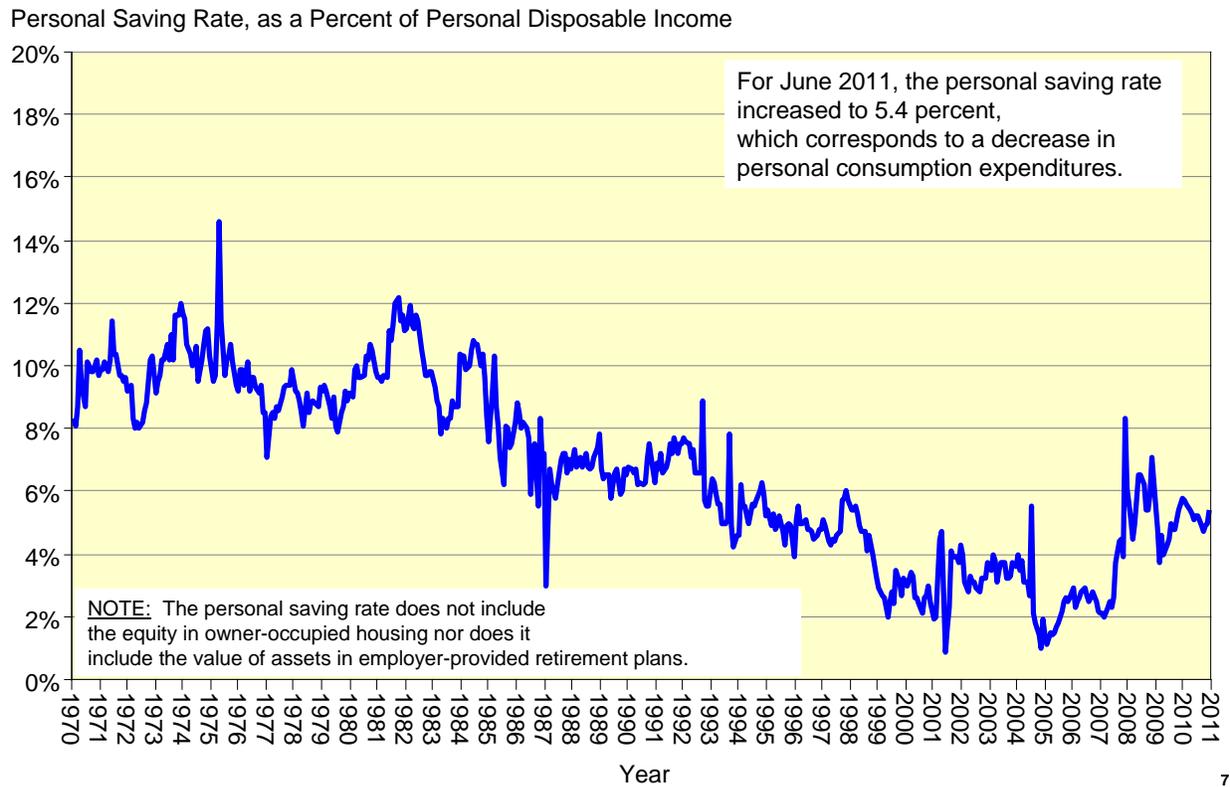
Figure 6. Sharp Increases in Household Debt/Income Ratios Were Not Sustainable: Forced Households to “De-leverage”



Moreover, job losses erode the disposable income of households experiencing spells of unemployment. These substantial shocks to household wealth and income spurred consumers to clean up household balance sheets by reducing spending, particularly debt-financed consumption. Uncertainty over future economic growth led households to save a larger portion

of their incomes, reversing a 25-year decline in personal savings rates (Figure 7).

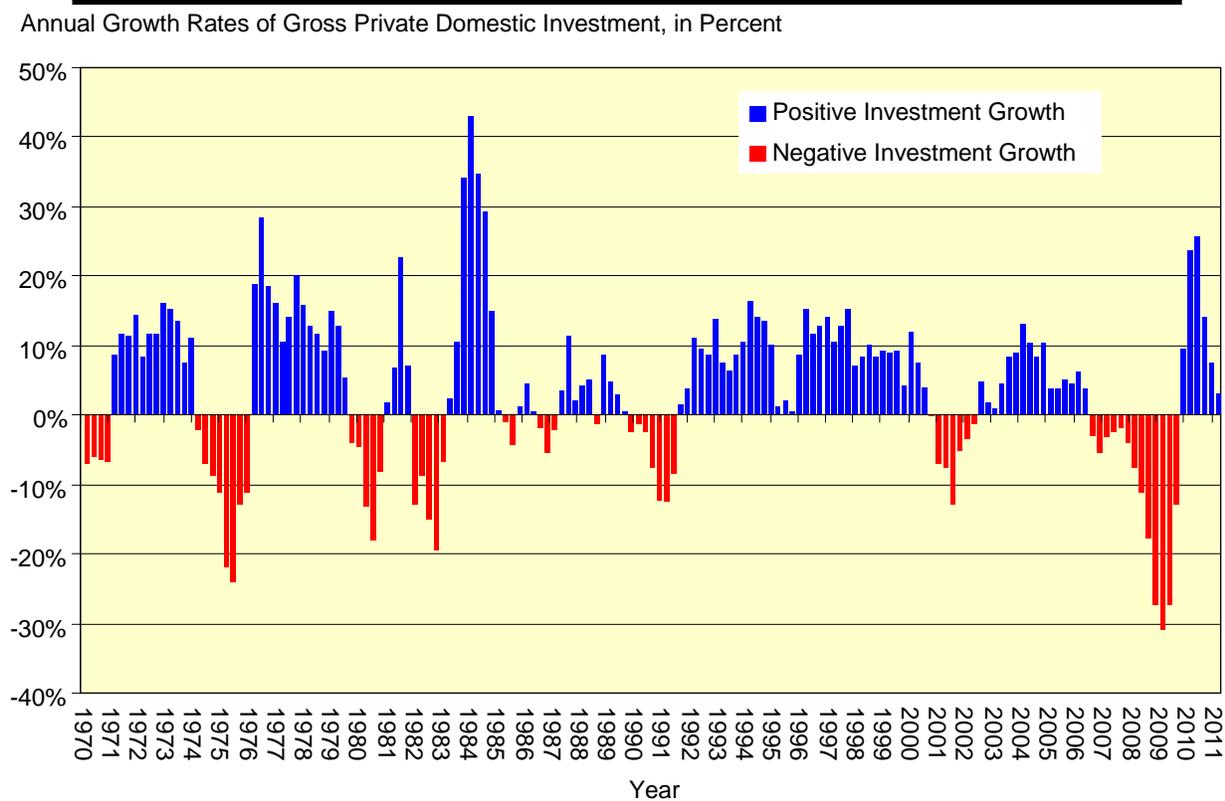
Figure 7. Personal Saving Rate Increase Since 2007 Illustrates the “Paradox of Thrift:” Higher Saving Rates Reduce Consumption



The immediate effect of rising saving rates is to reduce consumer spending, a phenomenon known as the paradox of thrift. Collectively, these shocks will continue to temper consumer spending growth in the near-term, limiting the role of consumer spending as a catalyst for broader economic recovery.

Private investment is the most volatile component of aggregate spending across the business cycle, and growth in private investment typically signals the end of a recessionary period. (Figure 8)

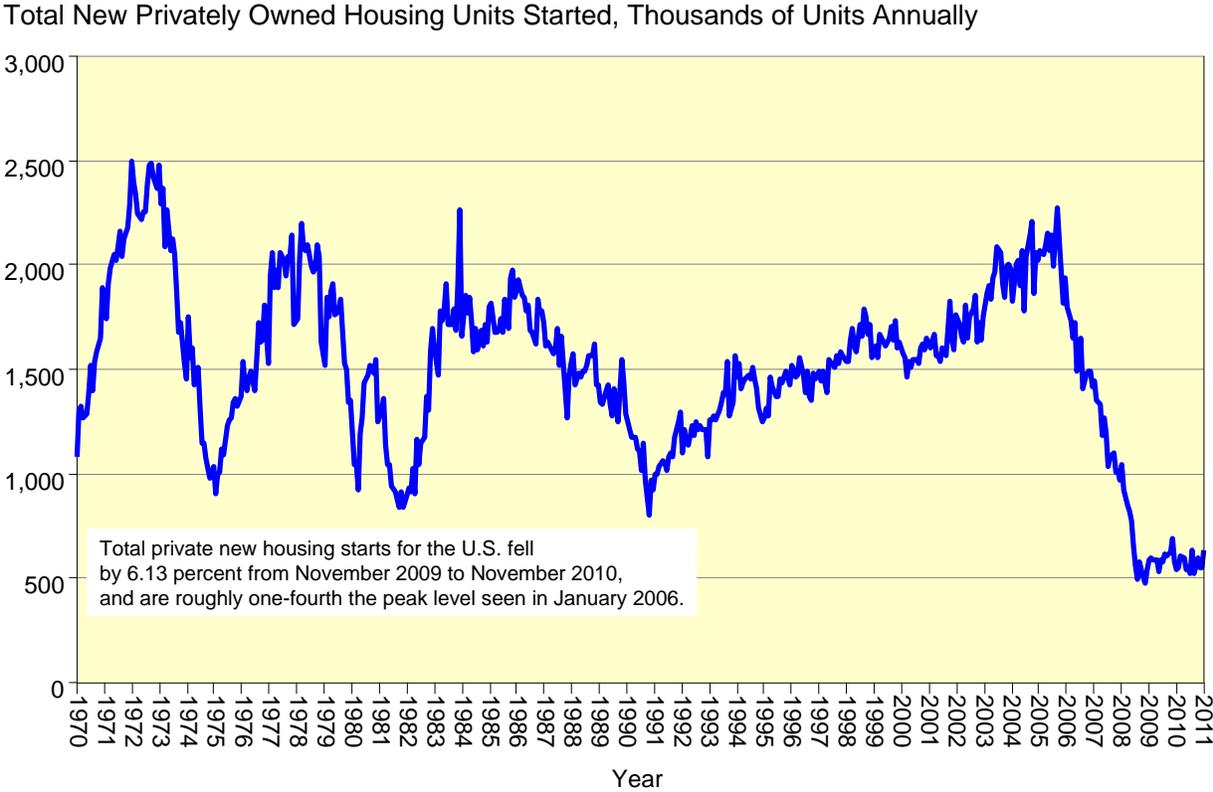
Figure 8. Investment Contracted Significantly Throughout the Recent Recession and Investment Growth Has Tapered Off



Private investment includes: construction of new housing, construction of nonresidential structures (plants and warehouses), and business purchases of capital equipment. The cost of physical capital is a function of real borrowing costs and government tax policies impacting investment, such as changes in depreciation allowances and investment tax credits. Moreover, the level of investment is heavily influenced by expectations of future economic growth. Businesses increase expenditures on capital goods and physical capital when robust growth is forecast. Conversely, a pessimistic outlook for future growth discourages investment. In 1932, at the depth of the Great Depression, U.S. investment plummeted to zero. Investment spending is not currently hampered by high borrowing costs, as real interest rates remain relatively low. Rather, business expectations of continued anemic growth – coupled with uncertainty over future corporate tax reforms – explain the continued weakness in investment spending.

The slowdown in housing also serves as a drag on investment. New housing starts declined by nearly 75 percent, from 2.25 million annually in 2006 to roughly 525,000 in 2010, despite the availability of 30-year fixed rates mortgages below five percent. (Figure 9)

Figure 9. Housing Starts Were Decimated by Mortgage Crisis and Economic Downturn



While housing starts are forecast to increase to 780,000 by 2012, residential construction will not drive investment spending in the intermediate term.

Leading economic indicators of business activity (Figures 10 and 11), such as industrial production and surveys of purchasing managers, indicate a leveling-off in production.

Figure 10. Industrial Production Index Remains 7% Below its Pre-Recession Peak and Growth in this Index Has Slowed

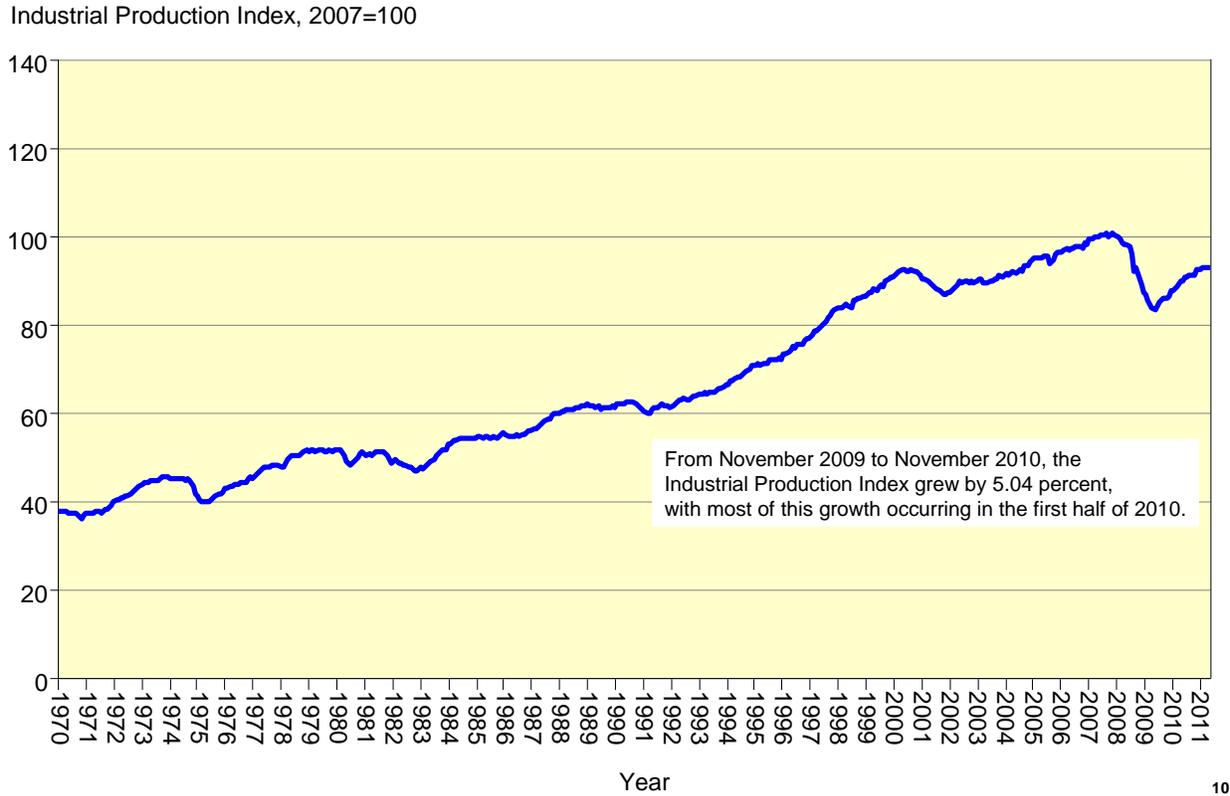
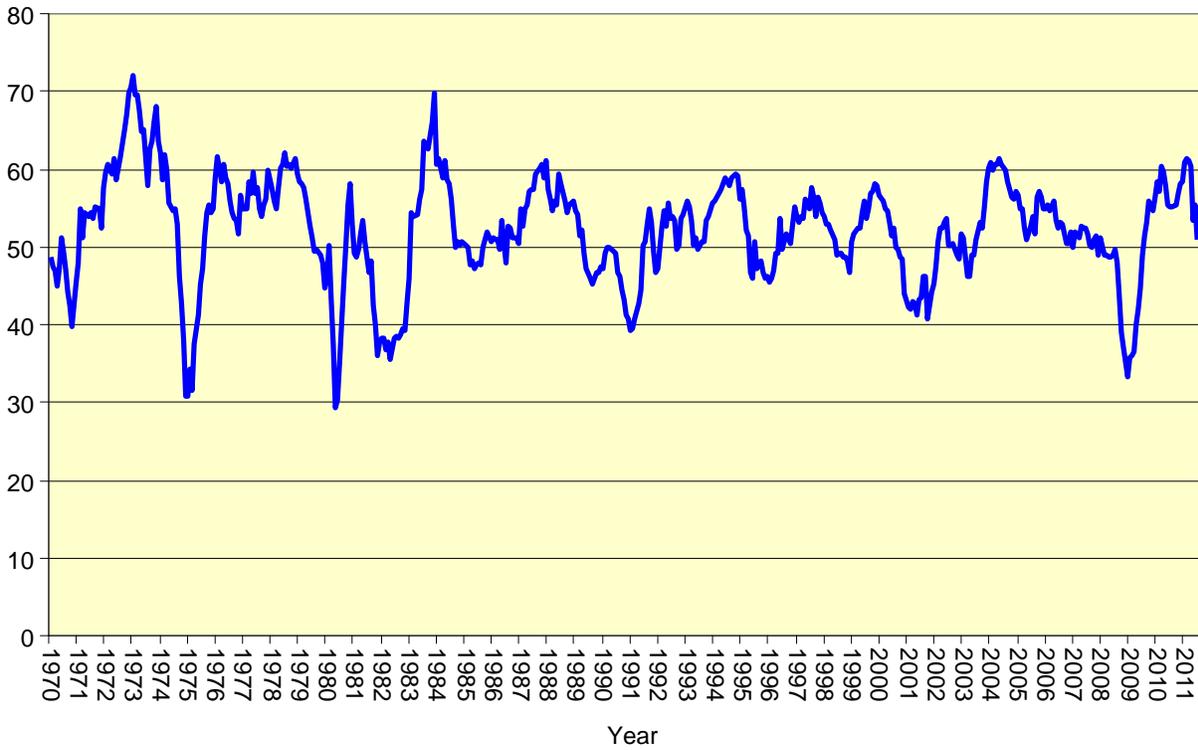


Figure 11. Purchasing Managers Index Is a Leading Indicator of Production Increases, Recent Declines Indicate A Slowdown in Production

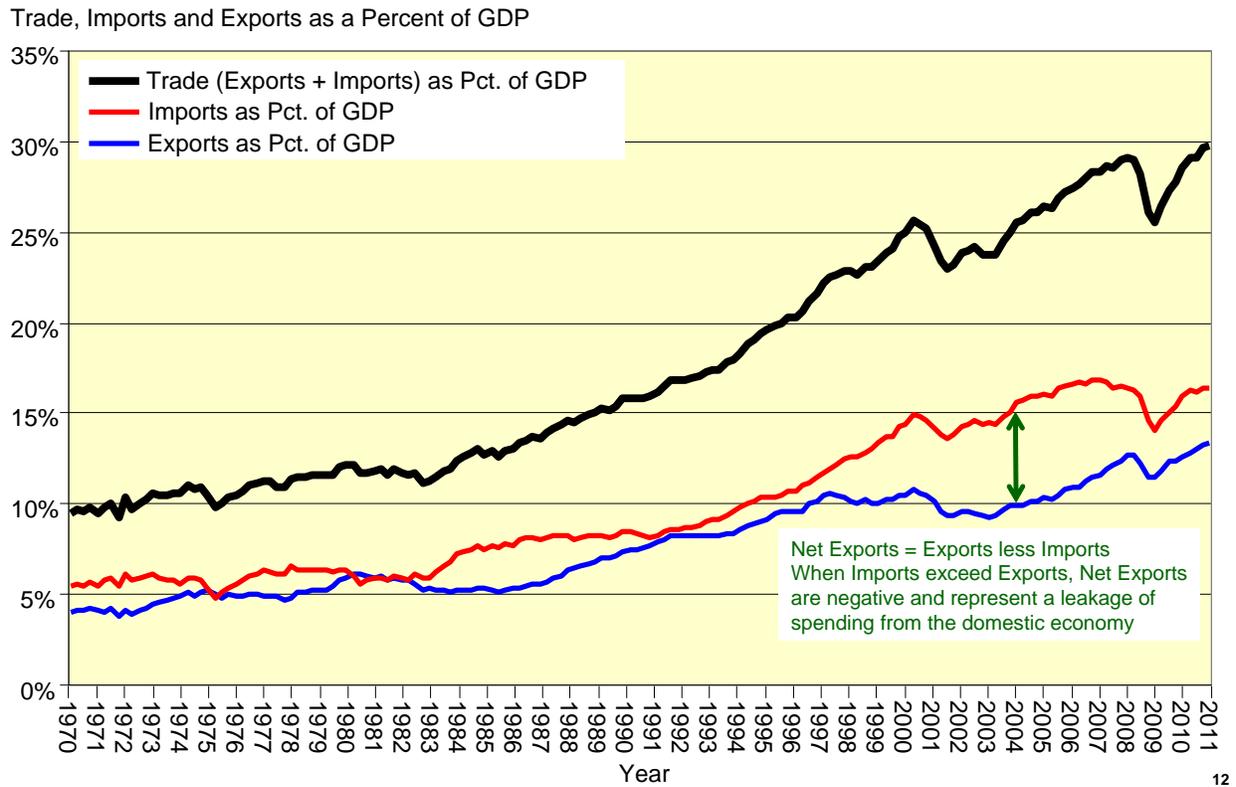
Purchasing Manager's Index, Values Less than 50 Signal Recessions



Taken together, these business indicators provide evidence that the economic recovery has stalled.

Trade in goods and services represents the third major category of private spending. Trade's share of GDP has grown consistently since 1970. Since spending on imported goods has grown more rapidly than the volume of our exports, our trade deficit grew as a percent of GDP. (Figure 12)

Figure 12. Although the Trade Gap Narrowed During the Recession
Trade As a Percentage of GDP Has Nearly Tripled Since 1970



Growing trade deficits contribute to a weakening of the U.S. dollar against other currencies by increasing the supply of dollars in the global currency markets. (Figure 13 and 14)

Figure 13. The Decline In the Value of the Trade-Weighted Exchange Index Illustrates the Depreciation of the Dollar Against The Currencies of Major U.S. Trading Partners

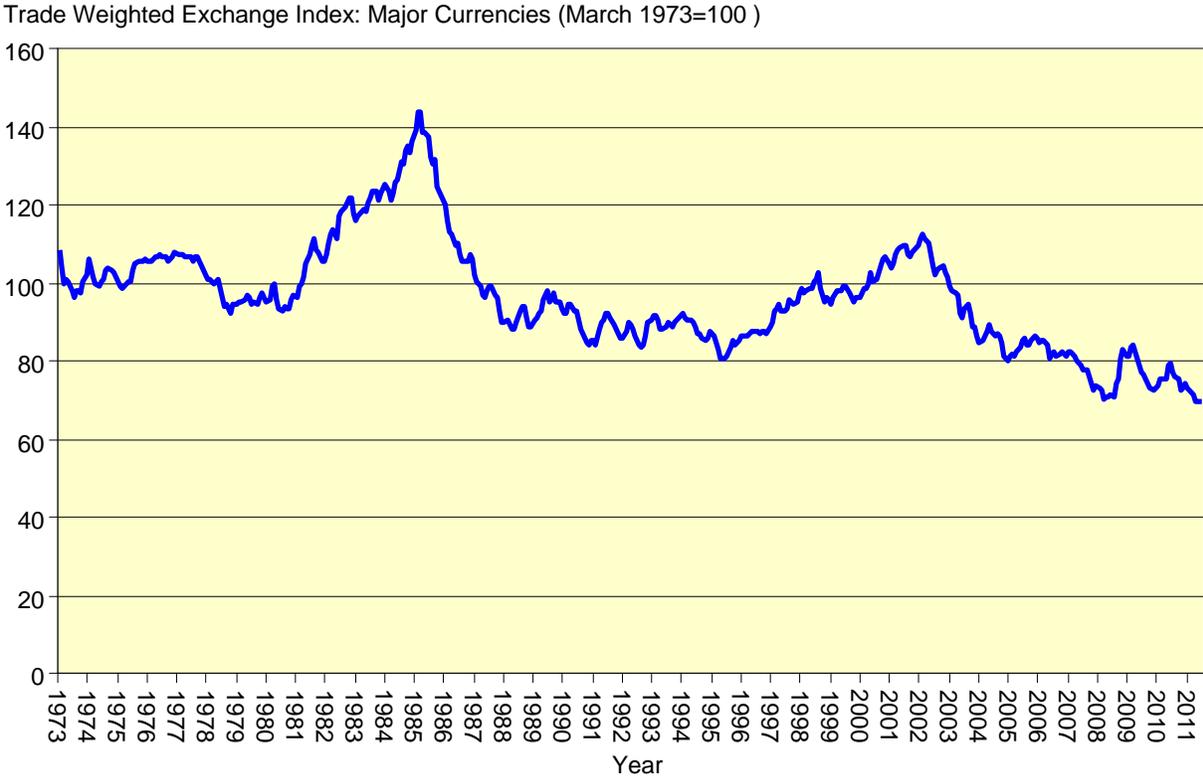
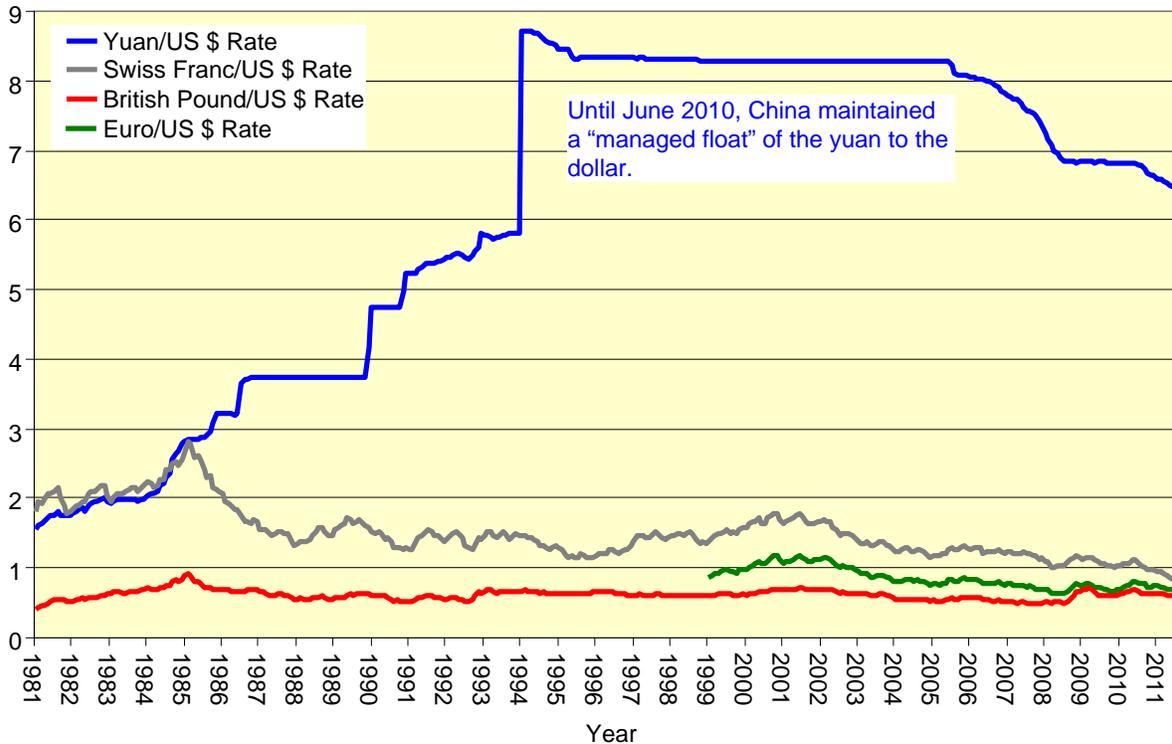


Figure 14. Growing U.S. Trade Deficits Increase the Supply of U.S. Dollars in Global Currency Markets, Weakening the Value of the Dollar

Foreign Exchange Rates: Price of a Dollar in Foreign Currency Units



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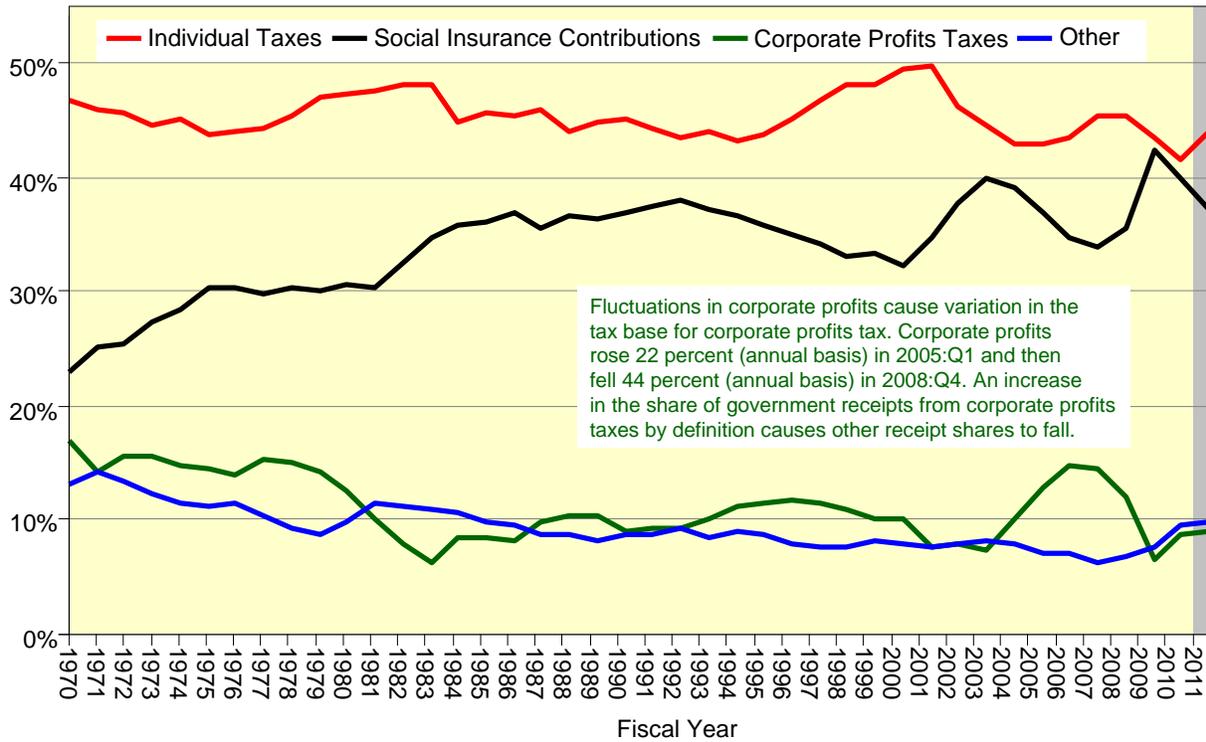
The recent improvement in the U.S. trade deficit was caused by imports falling more rapidly than exports during the 2007-2008 recession, providing additional evidence of the sharp decline in consumer spending.

Federal government expenditures are the final category of aggregate spending. Government spending rose by nearly five percent of GDP during the recent recession. Discretionary spending associated with the American Recovery and Revitalization Act of February 2009 made up the bulk of this increase. The bill authorized \$787 billion (roughly 5.67 percent of GDP) in public infrastructure spending, need-based aid, and tax expenditures over a 5-year period. In the first year after passage, the stimulus bill included roughly \$100 billion in tax cuts and payments to individuals. These policies raise the after-tax disposal income of households, which causes higher levels of consumer spending. Unlike the government, however, households do not spend 100 percent of each additional dollar, and some of the payments to individuals was simply saved rather than spent. Other stimulus monies were earmarked for public infrastructure projects, which can have a larger expansionary effect but take longer to implement.

Beyond the growth in government outlays, the recession affected government receipts through reduced collections of personal income, payroll and corporate profits taxes. (Figure 15) (Shaded areas in fiscal year graphs for 2011 and 2012 reflect that those numbers are projections.)

Figure 15. Taxes on Individuals Have Grown Relative to Taxes on Corporate Earnings

Share of Government Receipts by Source



Growing outlays coupled with reduced receipts led to rapid growth in current government budget deficits and the federal debt. (Figures 16 and 17)

Figure 16. Budget Deficits More than Tripled As a Percent of GDP During the Recent Recession Due to Declining Tax Collections and Stimulus Bill

Federal Government Deficit as a Percent of GDP (Budget Surpluses in Blue), 2011 and 2012 are Estimates

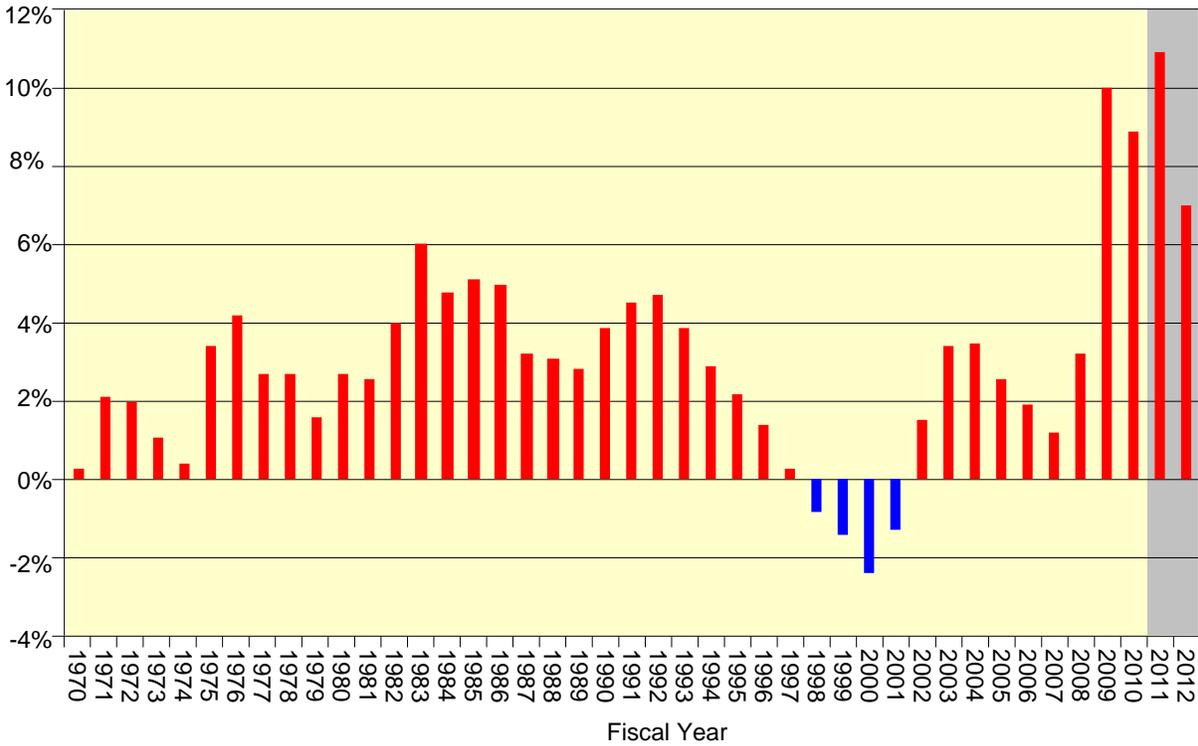
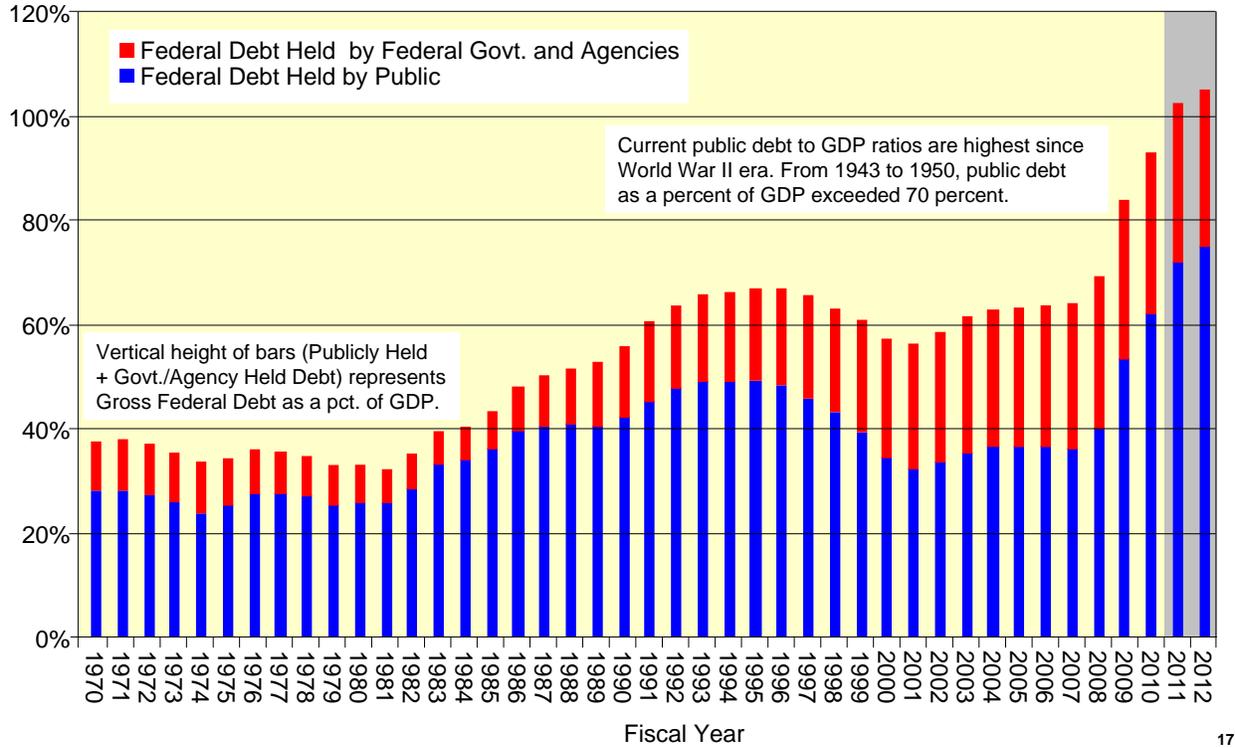


Figure 17. Federal Debt Held by the Public Rose From 40 Percent at Start of the 2008 Recession to 72 Percent Currently

Federal Government Debt as a Percent of GDP by Ownership, 2011 and 2012 are Estimates



Much of the recent growth in the budget deficit (to nearly 10 percent of GDP) is cyclical, reflecting the severity of the recent economic recession. Nonetheless, the structural budget deficit, the gap between outlays and receipts that would prevail removing the cyclical component, is nearly 6 percent of GDP. With the federal government forecast to run historically high annual budget deficits as a percent of GDP for the near-term, deficit reduction initiatives will focus on reducing government outlays.

For Fiscal Year 2011, Medicare and Social Security outlays comprise nearly one-third of all federal government expenditures. (Figures 18 and 19)

Figure 18. Entitlement Spending (Medicare + Social Security) Now Comprises More than 35 Percent of Federal Government Outlays

Share of Federal Government Outlays, by Program (Shares do not sum to 100 percent as not all programs shown)

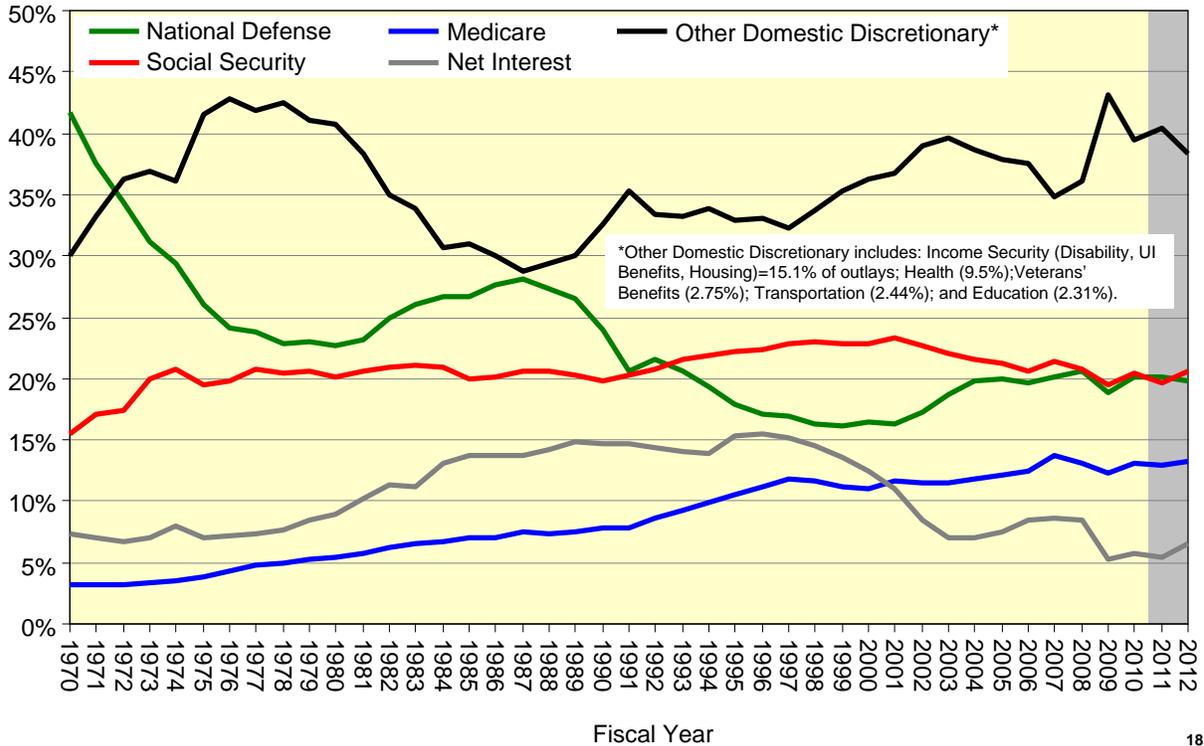
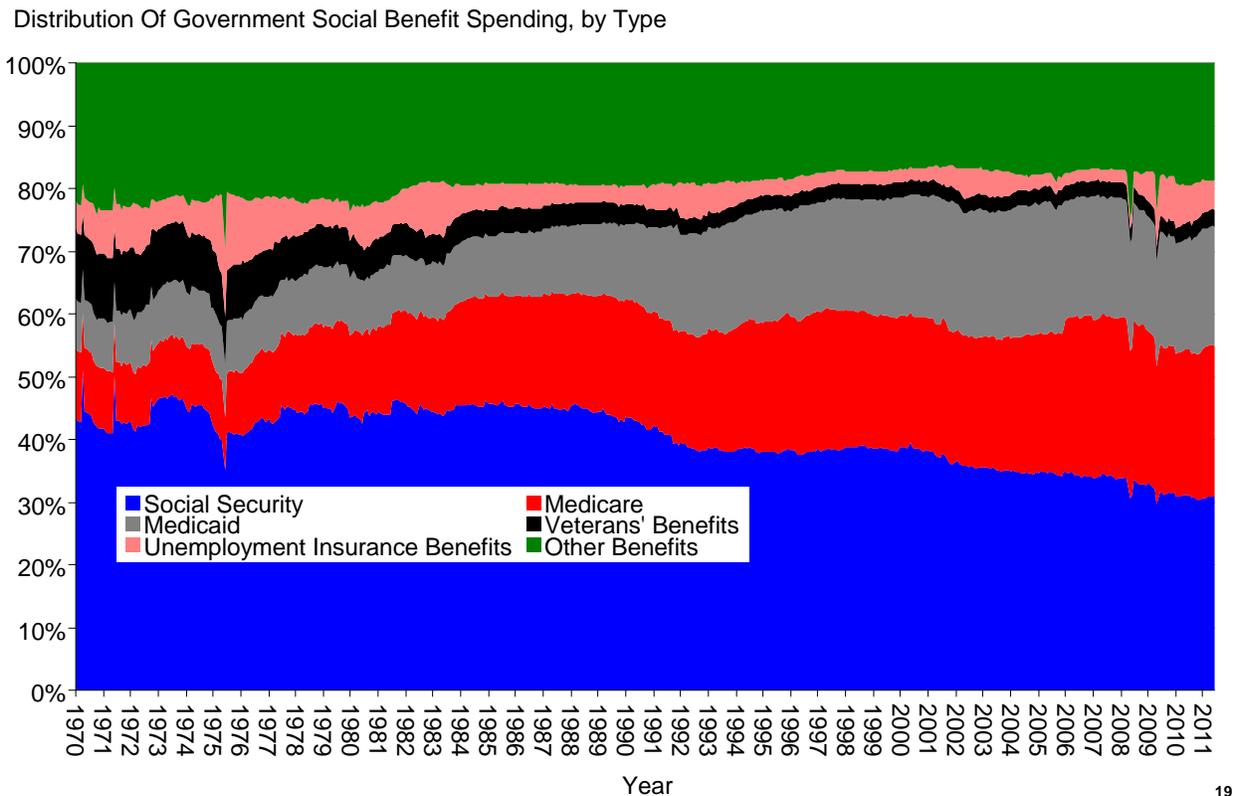


Figure 19. Medicare Spending Has Tripled As a Portion of Federal Social Benefit Spending, and Medicare and Medicaid Now Constitute 40 Percent of Spending



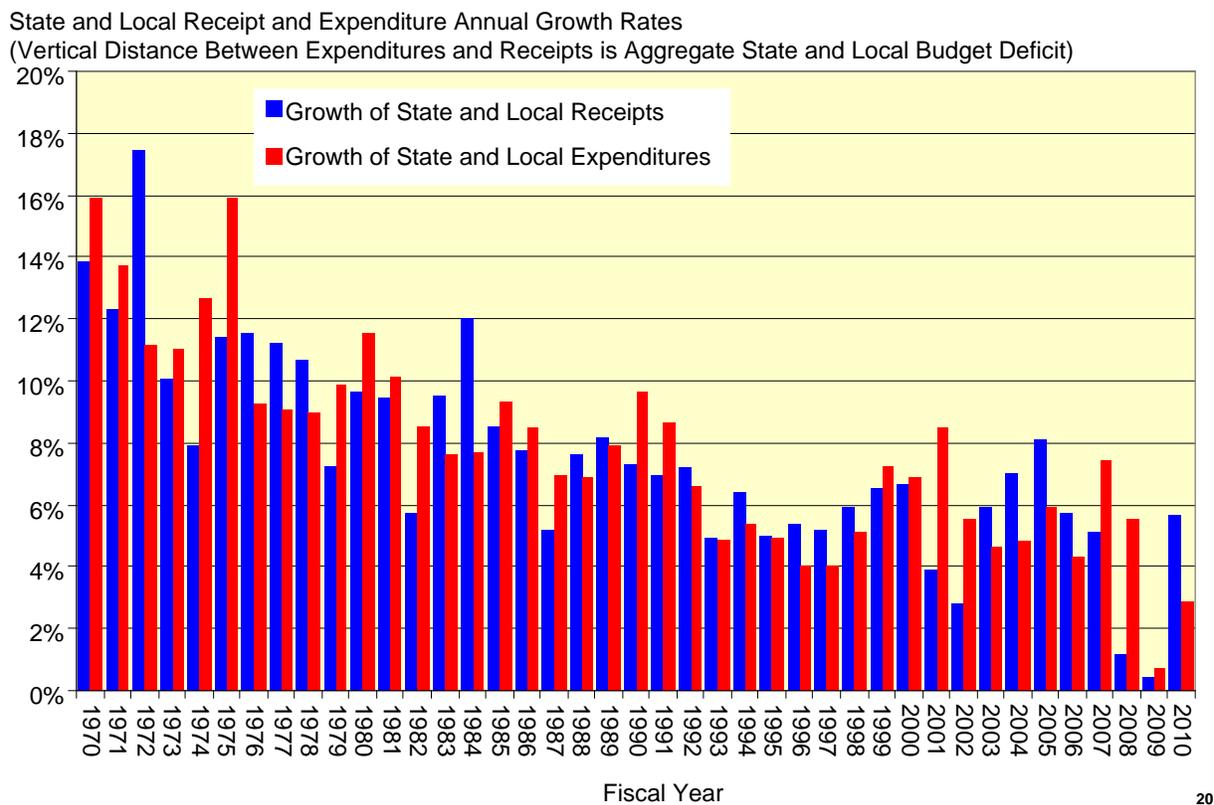
Properly accounting for the future obligations associated with Medicare and Social Security, outlays will continue to grow faster than receipts. This unpleasant arithmetic points to rising budget deficits even in the presence of robust economic growth. Population demographics and the forecast growth in health care spending indicate that Medicare will deplete its current surplus within the next seven to ten years, and that Social Security will exhaust its surplus by 2039. In their current form, these entitlement programs are simply not sustainable. While these imbalances have been acknowledged for decades, the severity of the current recession restricts the policy space available to reform these programs without raising payroll taxes and reducing benefits.

Defense spending comprises more than one-fifth of federal government expenditures, followed by income security programs (14.5 percent), non-Medicare health spending (10.1 percent) and net interest on the federal debt (6.3 percent). Net interest payments on the national debt are expected to double over the next decade, so further deficit reduction will require cuts in defense and discretionary spending. Terms of the recently passed Budget Control Act call for 40 percent of 10-year spending cuts to come from defense. If the super-committee's reductions for deficit reform are not accepted, defense is slated to bear an additional \$600 to \$750 billion in cuts in FY 2013 through FY 2021. It is safe to say that defense will be a leading bill-payer for future deficit reduction initiatives.

Frequently overlooked in the recent budget debate is the impact of reduced federal spending on state and local governments. More than 25 percent of state and local government receipts come

from federal grants-in-aid, so reductions in discretionary spending at the federal level will directly impact state and local budgets as well. Nearly all states have some form of balanced budget provision, so revenue shortfalls will necessitate reductions in service provision and attendant cuts in public sector payrolls. For those states hardest hit by declining tax revenues, their creditworthiness is sure to come under close scrutiny by credit rating agencies. Any rating downgrades for states and municipalities will raise their borrowing costs. At the state and local level, future reductions in federal aid will place additional stress on budgets. (Figure 20)

Figure 20. Spending Growth at the State & Local Level Has Slowed Over Time, While Balanced Budget Laws Constrain States from Running Persistent Deficits

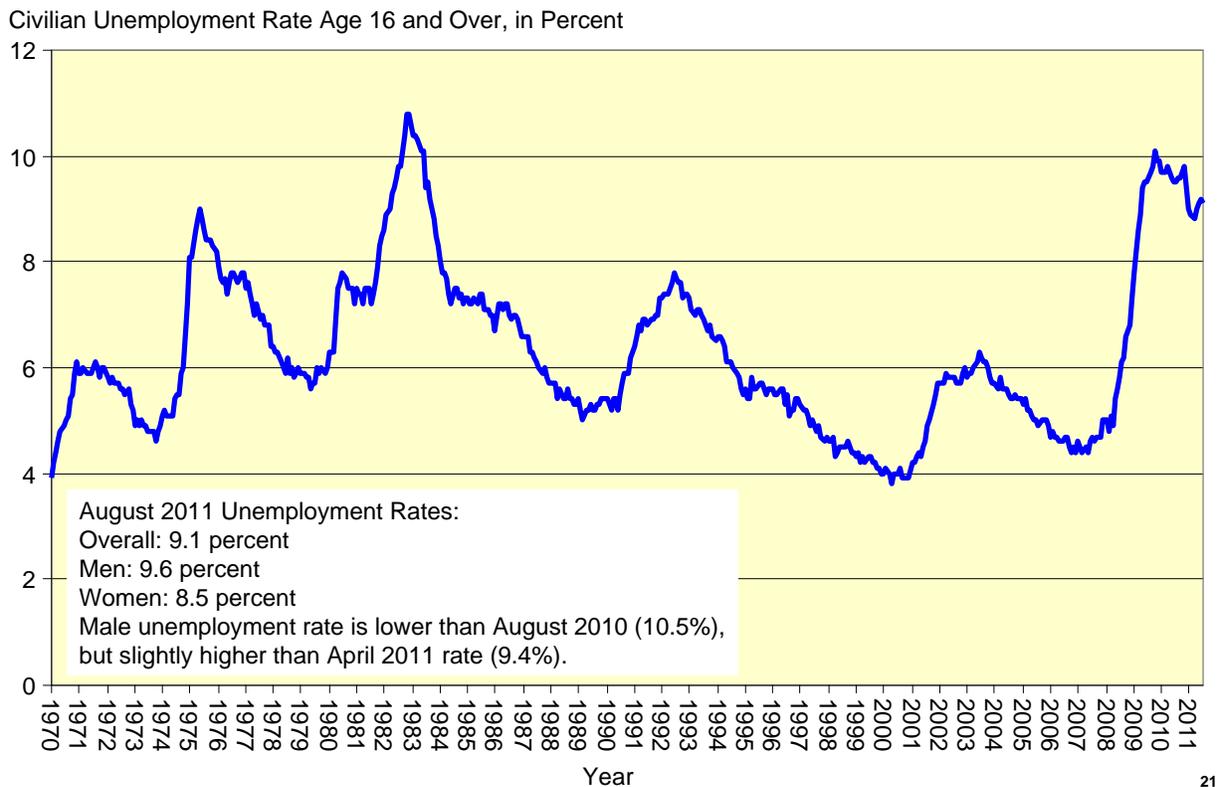


Commentators frequently draw parallels between the current recovery and the economy’s recovery from previous deep recessions in 1974-1975 and in 1981-1983 as a critique of federal stabilization policy. Such comparisons are misguided, as those earlier recessions were triggered by spikes in oil prices that caused substantial short-term pain in the form of higher prices and higher unemployment. In those V-shaped recessions, output declined significantly, but quickly rebounded as oil prices ramped down after sharp increases. In contrast, the current recession was triggered by a financial crisis rather than a commodity price shock. The de-leveraging process by which the financial sector, businesses and households repair their balance sheets in the aftermath of unsustainable asset price bubbles is lengthy and gradual. As opposed to a V-shaped recession, the nation is experiencing an L-shaped recession and recovery. Under reasonable assumptions about economic growth rates, the economy may not reach its full productive capacity for nearly a decade.

Labor Markets and Unemployment

Private sector businesses responded to the freezing-up of credit markets in the fall of 2008 by significantly cutting payrolls and scaling back production. After liquidity had been restored to lending markets, however, continued weak aggregate demand triggered further workforce reductions, and the ranks of the unemployed more than doubled from 7.2 million unemployed in September 2007 to 15.1 million in September 2009. Unemployment rates exhibited a similar spike, rising from 4.7 percent in September 2007 to 9.8 percent in September 2009. (Figure 21)

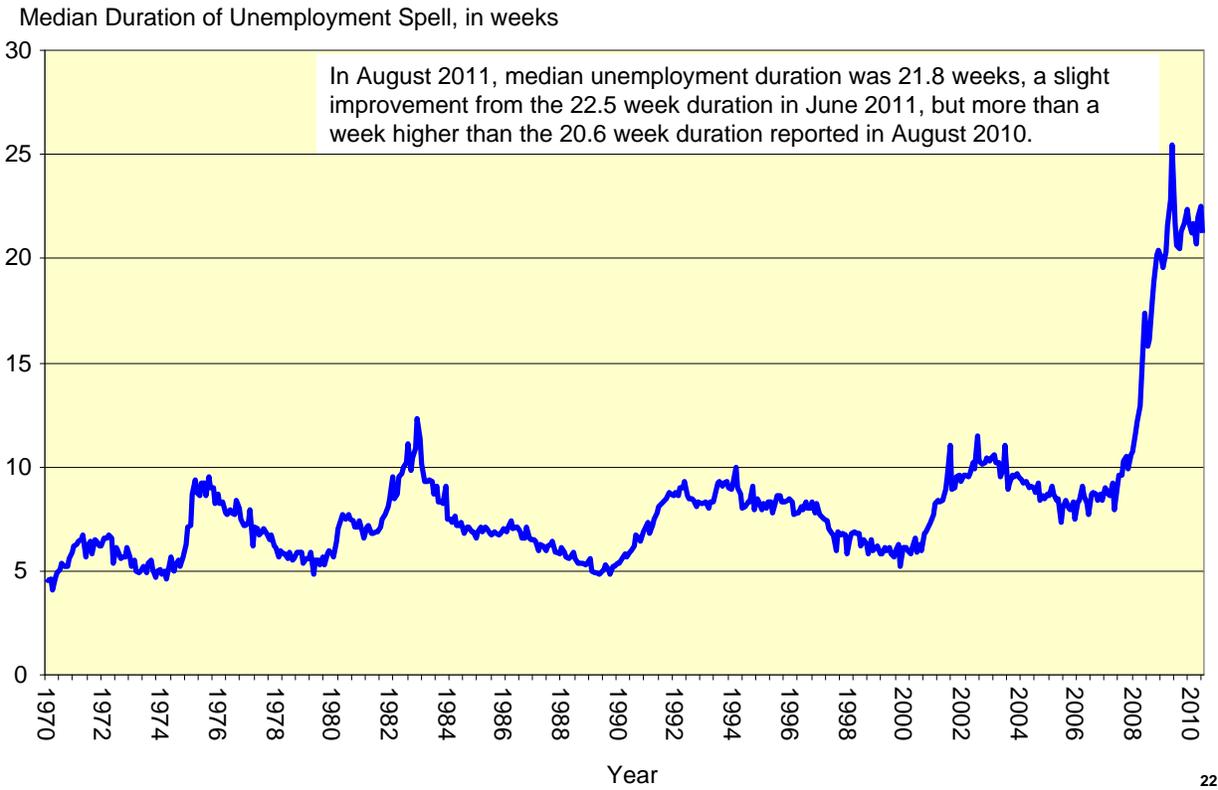
Figure 21. Unemployment During the Recent Recession Reached the Highest Level Since 1983, and Has Improved Only Slightly



Unemployment sidelines productive workers and thereby reduces economic growth. Roughly 41 percent of unemployed workers are eligible to receive unemployment insurance benefits, and may also qualify for additional need-based transfers, imposing further costs on the government spending during economic downturns.

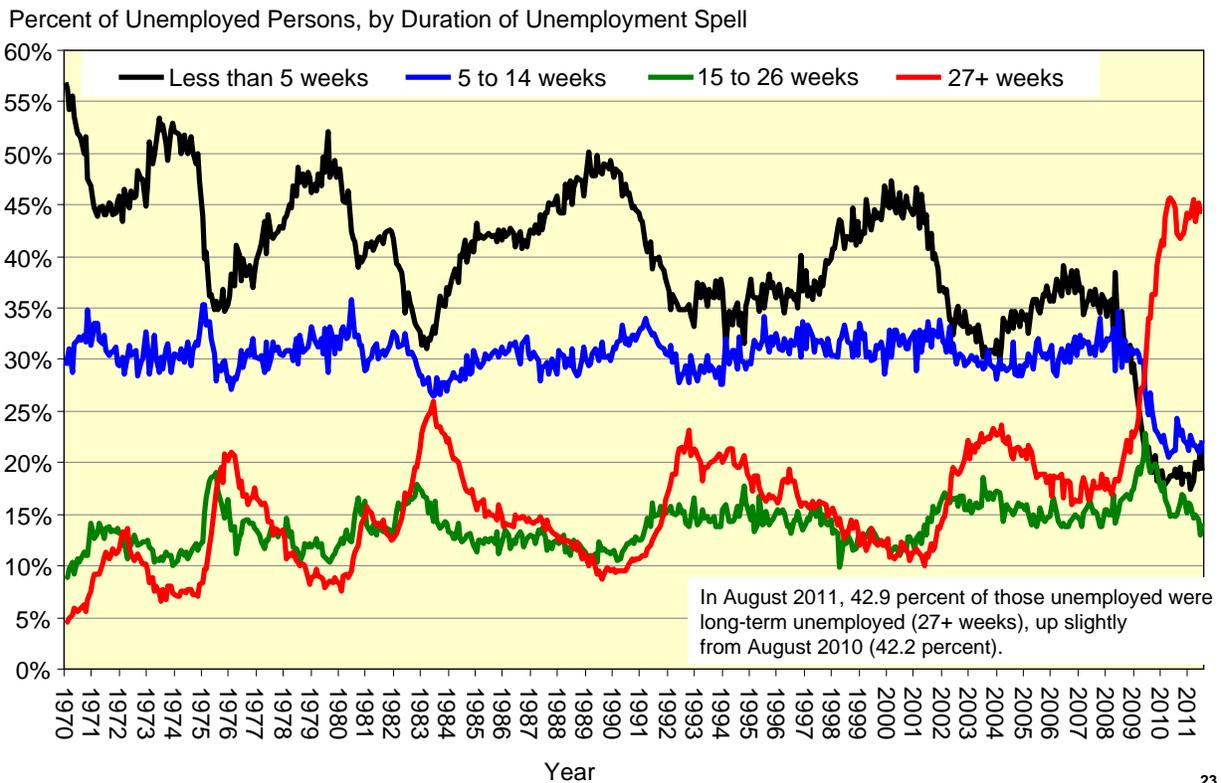
During recessions, the duration of unemployment increases; the pool of unemployed workers grows as available openings dwindle. In the 2008-2009 recession, the median duration of unemployment jumped to 25 weeks, nearly three times the typical duration. (Figure 22)

Figure 22. Proportion of Long Spells of Unemployment Increase During Recessions, but Have Also Increased Substantially Over Time



Nearly 43 percent of unemployed workers have been looking for work for more than six months (Figure 23), and the Bureau of Labor Statistics (BLS) estimates that one-tenth of unemployed workers have been jobless for two or more years.

Figure 23. Duration of Unemployment Spells Increases During Recessions, but Long-Term Unemployment (27+ Weeks) Has Increased Across Time



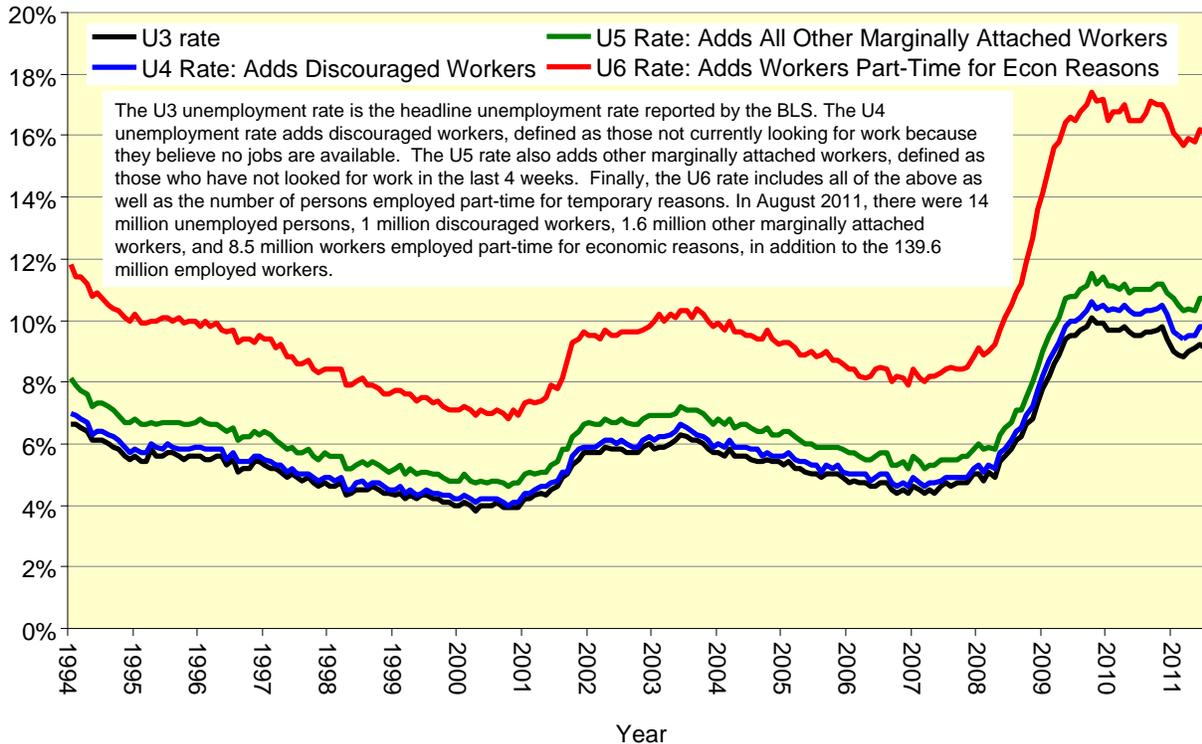
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The growth in long-term unemployment often leads to the “discouraged worker effect,” in which unemployed individuals become so frustrated with failed job search that they simply stop actively seeking work. Since unemployment rates are calculated from household surveys, individuals who no longer report active job search are not counted as unemployed. Alternative measures of unemployment and under-employment constructed by the BLS find that the

“headline” unemployment rate (currently 9.1 percent) may understate true unemployment by as much as seven percentage points. (Figure 24)

Figure 24. Headline Unemployment Rate Does not Count Workers Who Stop Looking for Work or Those Employed Part-Time for Economic Reasons

Alternative Unemployment Rates, Percent of Labor Force

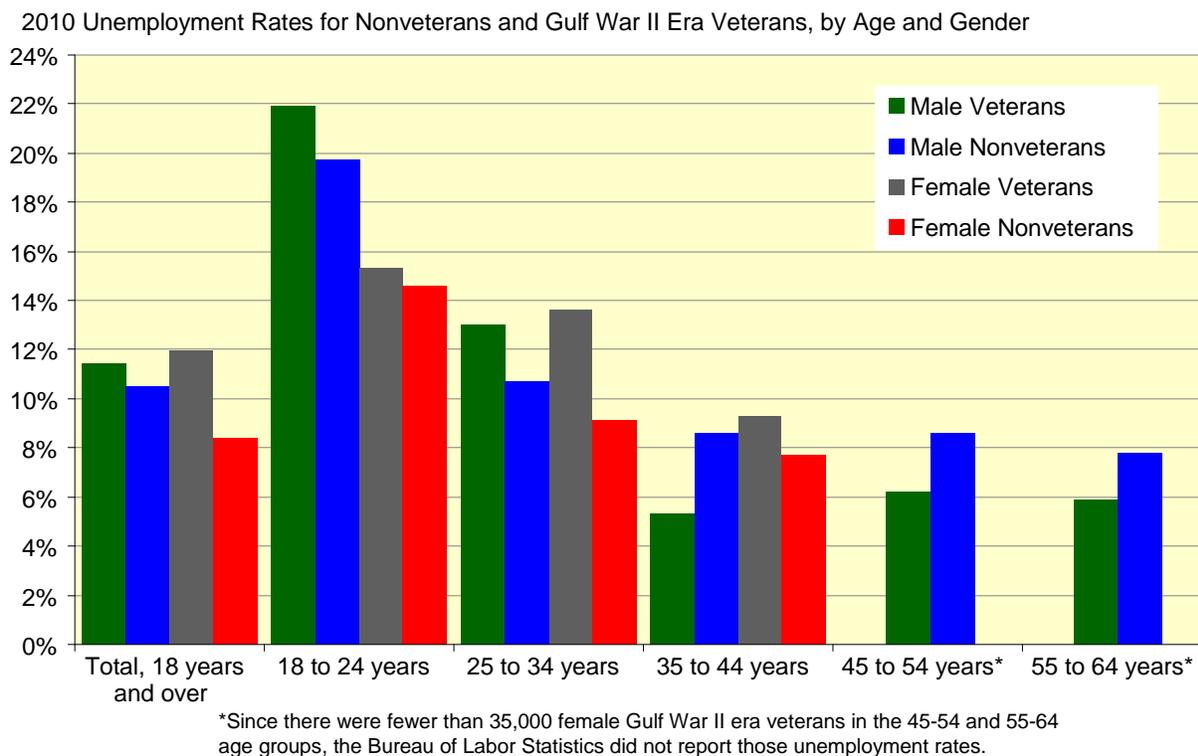


Young workers typically have higher unemployment rates across the business cycle, and experience the largest increase in unemployment during economic downturns. Long-term unemployment erodes the human capital (freshness of knowledge and skills) of all unemployed, but can be particularly damaging to young workers by lowering their attachment to the labor force for the rest of their working lives.

The weak civilian labor market is of particular concern, since individuals separating from active-duty service and demobilizing reserve component soldiers either transition back to the civilian labor market or pursue further education. Since military personnel separating or demobilizing are typically younger than their civilian counterparts, they experience unemployment rates significantly above the national average. In August 2011, Gulf War II era veterans (personnel who served after September 11, 2001) had an unemployment rate of 9.8 percent compared to an 8.9 unemployment rate for nonveterans 18 and over. Such comparisons are misleading, as they

fail to control for the different age distribution of Gulf War II era veterans. Among the nonveteran labor force, only 36 percent of workers are age 18 to 34, whereas roughly 64 percent of Gulf War II era veterans are age 18 to 34. Figure 25 compares 2010 unemployment rates for Gulf War II era veterans and nonveterans by age group and gender.

Figure 25. Unemployment Rates for Younger Gulf War II Era Veterans Exceed Nonveterans, in Part Due to Differences in Industry and Occupation



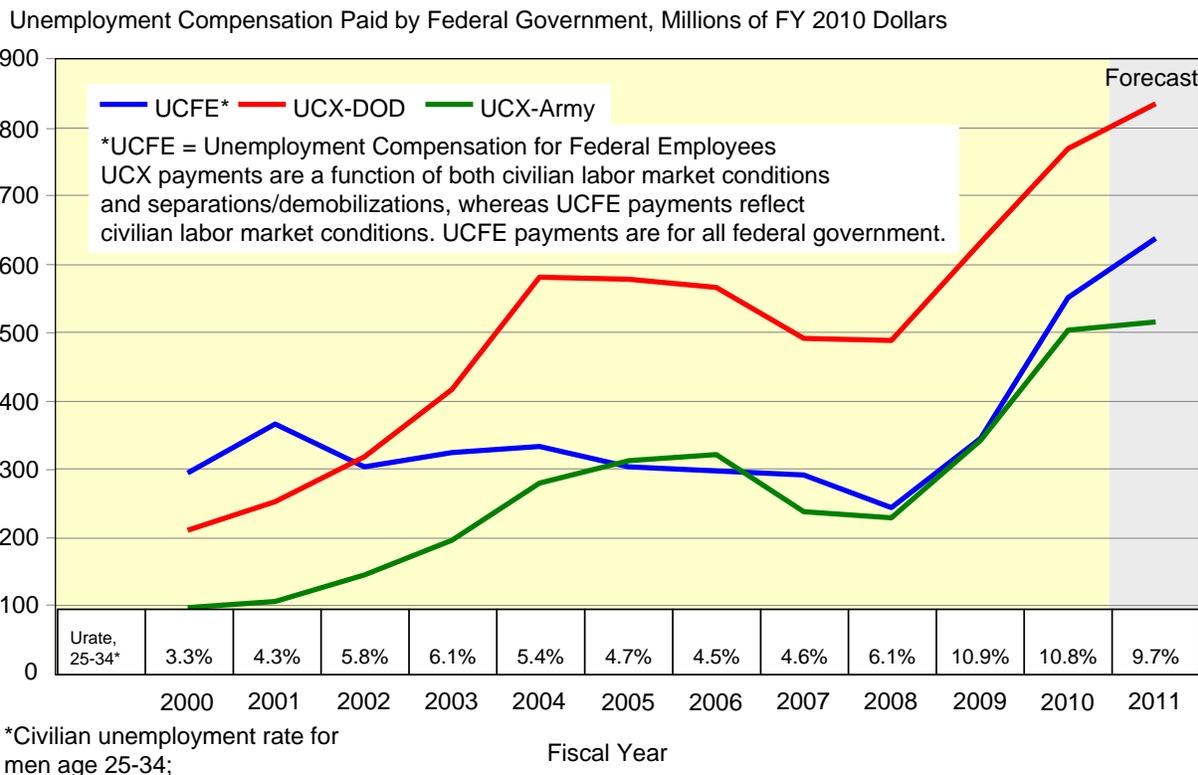
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Male veterans aged 18 to 34 have unemployment rates roughly two percentage points higher than comparable-aged non-veterans. Female veterans aged 25 to 34 have unemployment rates nearly 2.5 percentage points higher than their nonveteran counterparts. In part, the difference in unemployment rates between female veterans and nonveterans reflects variation in occupational mix – female veterans are significantly more likely to work in the government sector, in which hiring has been adversely impacted by budget cuts and hiring freezes. While veteran unemployment rates are slightly higher than those for comparable nonveterans, the primary cause of high unemployment rates among veterans and nonveterans alike is a sluggish economy.

Scheduled troop withdrawals from Afghanistan over the next two years may lead to higher separation rates from the Army. Moreover, potential reductions in force size will cull additional personnel. The difficulty of personnel reintegrating into the civilian labor market poses two distinct challenges for the Army. Media stories regarding unemployed veterans have spurred federal and state tax credits for firms hiring veterans, but impose a public relations cost on the Army by suggesting a disconnect between skills acquired in the military and those valued in the civilian workplace. High unemployment rates for separating personnel also impose a direct cost on the Army through increased outlays on Unemployment Compensation for Ex-

Servicemembers (UCX). Aggregate UCX outlays in a given fiscal year are a product of both civilian labor market conditions and the number of separations and demobilizations. Controlling for inflation, DoD spent nearly \$800 billion on UCX payments in FY2010, a more than 60 percent increase over FY 2007 levels. (Figure 26)

Figure 26. Defense Department Outlays for Unemployment Compensation for Ex-Servicemembers (UCX) Rise As the Civilian Labor Market Weakens



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This increase reflects the responsiveness of program costs to civilian labor market conditions. From FY 2003 to FY 2006, aggregate UCX payments by DoD rose 36 percent, while the civilian unemployment rate fell from 6.0 percent to 4.5 percent. In this earlier time period, rising UCX payments reflected greater active component separations and reserve component demobilizations. When interpreting trends in UCX outlays, both civilian labor market conditions and the rate of military separations must be considered. In particular, evaluations of Army transition initiatives must not focus exclusively on changes in UCX outlays.

Future Expectations

Although the most recent recession ended in December 2009, unemployment remains above 9 percent and real GDP growth is slightly more than one percent on an annual basis. Economists disagree about both the magnitude and the design of the 2009 stimulus bill, but a protracted period of low economic growth and high unemployment are consistent with deleveraging after financial crises. The next decade will likely feature moderate inflation and below-average annual growth rates for the real economy. Labor markets will also rebound slowly, with unemployment rates forecast to drop below six percent by the end of the decade. Considerable

risks to this nascent recovery remain, particularly if the global economy experiences additional shocks precipitated by sovereign debt defaults. Notwithstanding the recent rating downgrade of U.S. Treasuries, defaults are more likely to emanate from the Euro-area nations. Although the current U.S. debt-to-GDP ratio is high by historical standards, investor appetite for U.S. Treasuries remains strong, and the U.S. dollar maintains its role as the global reserve currency. Unlike recent experiences of Iceland and Hungary, the U.S. debt is denominated in dollars, so dollar depreciation will not directly raise the real debt burden.

Within the U.S. domestic fiscal environment, long-term deficit reduction will remain a top priority, and significant budget cuts are likely for all major federal expenditure categories, including defense. It would be a strategic mistake to view the budget crunch as a short-term challenge that can be waited-out with a series of short-term measures. Instead, this fiscal crisis necessitates a long-term strategic view in which future force structure requirements are identified and appropriate emphasis is placed on maintaining the personnel levels consistent with a flexible, adaptable force. When the extensive margin (defense spending) must contract, as is the current situation, the Department of Defense must bolster the intensive margin (productivity of existing capital). This requires investments in both human and physical capital that improves overall productivity.

As a final point, empires rise and fall in large part based on the strength of their economic foundation. Although maintaining a firm economic foundation is not a role that is exclusive to the Defense Department, the mission of securing the nation's defense means that the military must remain vigilant in identifying economic threats and changes to the economic landscape. Over the past few decades, the world's economic landscape has transformed from being industrial to information based. Economists and generational experts suggest that the future will focus on conceptualizing information (conceptual age), where dominance will be determined by the inputs to production (capital and labor) that can most quickly conceptualize and act on vast amounts of information that resides outside of standard linear bounds.

Please direct questions on this study to Dr. John Smith at john.z.smith@us.army.mil