
ECONOMIC ASSUMPTIONS AND ANALYSES

12. ECONOMIC ASSUMPTIONS

In April, the U.S. economy was in the sixteenth month of a deep recession. In its early stages, the recession was relatively mild, but in the last quarter of 2008, real gross domestic product (GDP) fell at an annualized rate of 6.3 percent.¹ Unemployment has also risen sharply in recent months. The latest data suggest another large decline in output occurred in the first quarter of 2009, which could make for the deepest drop in economic activity since World War II.

The recession is not limited to the United States. Other industrial countries are experiencing similar declines in output and employment, and world trade is contracting. Meanwhile, financial institutions around the world have been seized by paralyzing uncertainty about the underlying value of the assets they hold, crippling lending and contributing to further declines in asset prices. Falling asset prices have hammered household wealth and caused consumers to reduce spending.

The Federal Government has adopted fiscal and monetary policies to counter the downward drag from private reductions in spending and investment. In February, the Congress and the President enacted the American Recovery and Reinvestment Act, an economic stimulus measure, which will replace demand withdrawn by the private sector. This Budget extends and strengthens

several key measures in the Recovery Act. Meanwhile, monetary policy has effectively lowered short-term interest rates to zero and the Federal Reserve has expanded its balance sheet in novel ways so as to support continued lending in the private sector. The Administration is also taking steps to buttress the financial system and the housing sector.

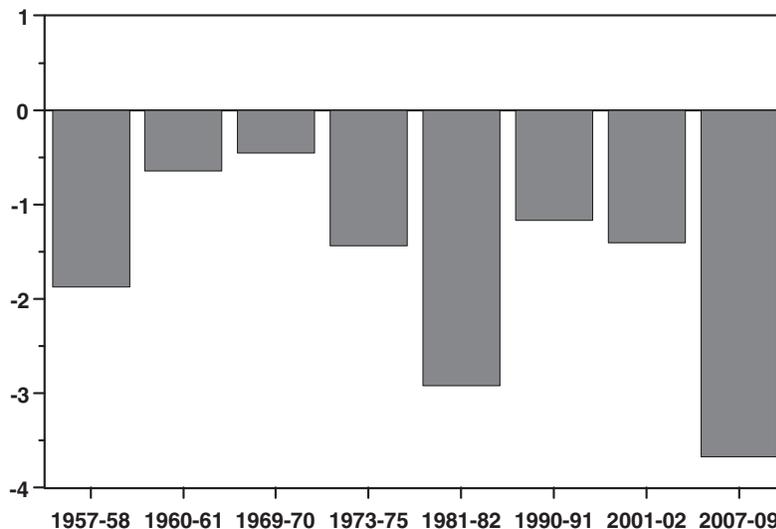
These policies are expected to stabilize the economy and stimulate a recovery by the end of 2009. The recovery is projected to gain momentum in 2010 and to strengthen further in 2011-2012. By the end of 2013, the unemployment rate is projected to fall to 5 percent, which is a sustainable level, and real GDP is projected to be growing at its potential, around 2.6 percent per year.

Recent Economic Performance

According to the business cycle's unofficial scorekeeper, the National Bureau of Economic Research (NBER), the most recent economic expansion ended more than a year ago in December 2007. The economy has been in recession since then. In May, it will be the longest recession since before World War II. The contraction has also been unusually deep as measured by the decline in payroll employment (see Chart 12-1). Other measures such as the rise in the unemployment rate also imply that this is one of the most severe recessions since the Great Depression.

¹ In the Budget, economic performance is discussed in terms of calendar years. Budget figures are discussed in terms of fiscal years.

**Chart 12-1. Percentage Decline in Payroll Employment
Business Cycle Downturns since 1955**



Housing Markets: The downturn had its origin in the housing market. In hindsight, it is clear that by the early years of this decade, housing prices had become caught up in a speculative bubble that finally burst. Housing prices have fallen sharply since 2006, and investment in housing has plummeted, reducing the annual average rate of real GDP growth by an average of 1 percentage point per quarter since mid-2006. Initially, it appeared as if the decline in housing might be contained within that industry and throughout 2006-2007 the broader economy continued to expand despite the drag from declining residential investment.

In August 2007, however, the accumulating problems in the housing market led to a worldwide crisis of confidence in the banks and credit markets, and through that channel the housing crisis initiated a widespread economic contraction. Although much of the needed adjustment in relative housing prices appears to have occurred (see chart below), further price declines may yet occur in response to the continuing economic downturn. Monthly housing starts were running at less than a 600,000 annual rate in early 2009. This is the lowest level ever recorded for this series, which dates from 1959. In normal times, at least 1-1/2 million starts a year are needed to accommodate the needs of an expanding population and to replace older units as they wear out. The Administration expects housing starts to reach bottom this year and to begin a robust recovery as relative housing prices stabilize. Even so, it will take time to work off the accumulated inventory of unsold homes and for existing homeowners to see the equity value of their property begin to rise again.

The Rise and Fall of World Oil Prices: In the winter of 2006-2007, world oil prices were around \$60/barrel for light crude, and regular gasoline was selling for around \$2.25/gallon. Then oil prices began to spike upward as surging

worldwide demand came up against limited worldwide production capacity. Over the next 18 months, oil prices shot up to over \$140/barrel and gasoline prices briefly topped \$4/gallon. This price increase had a depressing effect on sales of motor vehicles, especially popular but less fuel-efficient sport utility vehicles (SUVs) and light trucks. In July 2008, at the peak of the oil price spike, total vehicle sales were down 19 percent from the previous year. Higher fuel costs also shook consumer confidence and hurt retail sales of other products. Since the 1970s, oil price spikes have often contributed to the swings in the U.S. business cycle, and that appears to have happened again last year as the fall-off in motor vehicle demand cut sharply into consumer spending.

As the world economy has weakened, energy prices have reversed direction and returned to lower levels. In early April 2009, light crude oil was selling for around \$50 per barrel and regular gasoline was selling for around \$2 per gallon. The unwinding of the energy shock should contribute to the expected recovery this year. With lower fuel prices, motor vehicle sales are expected to begin to recover.

The Financial Crisis: In August 2007, the United States subprime mortgage market became the focal point for a worldwide financial crisis. Subprime mortgages are classified as mortgages going to borrowers who do not meet the standard criteria for borrowing at the lowest prevailing interest rate, either because of low income, a poor credit history, lack of a down payment, or other reasons. In the spring of 2007, there were over \$1 trillion in such mortgages, and with house prices falling many of these mortgages were on the brink of default.

As banks and other investors suddenly lost confidence in the value of these high-risk mortgages and the securities based on them, banks became much less willing to

Chart 12-2. Relative House Prices Have Fallen Substantially

Case-Shiller National Home Price Index Divided by the CPI Rent Component, 1987=100

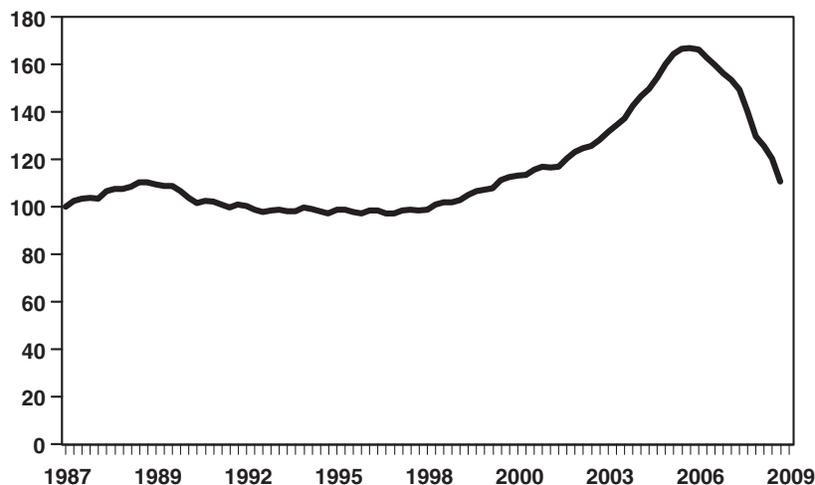
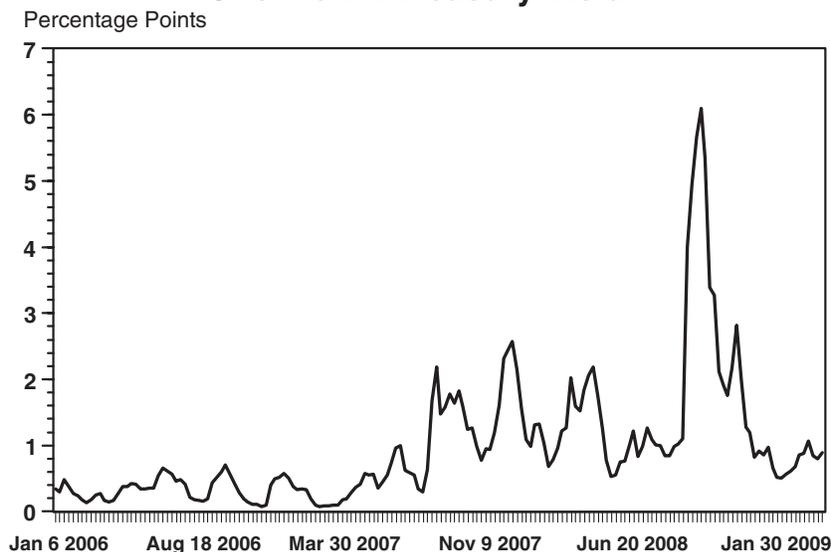


Chart 12-3. One-Month LIBOR Spread over One-Month Treasury Yield



lend to each another. Money market participants outside the banks became unwilling to lend to one another as well. Financial market participants of all kinds were uncertain of the degree to which other participants' balance sheets had been contaminated. The heightened uncertainty was reflected in unprecedented spreads between interest rates on Treasury securities, which are regarded as free of default risk, and various types of financial market debt. One especially telling differential is the spread between the yield on short-term U.S. Treasury securities, and the London interbank lending rate (LIBOR) which banks charge to one another for short-term lending in dollars. Historically, this differential has amounted to only 30 or 40 basis points. In August 2007, it shot up to over 2 percent, and it has remained elevated since then (see chart above).

The credit crunch that began in August 2007 quickly extended throughout the world's financial markets. At the time the threat appeared severe but limited. The problem was perceived to be with the relatively new and unusually risky mortgages that had spread throughout the financial system through the use of mortgage-backed securities, and other sophisticated financial products based on them. Conventional home mortgages along with other forms of consumer and business credit were not seen as being at special risk. Even so, by December 2007, the six-year old economic expansion had run its course. The combination of negative shocks in housing, energy markets, banking and finance brought it to a close. As 2008 began, payroll employment started to decline, and the unemployment rate, which had already reached bottom in March 2007, continued to rise.

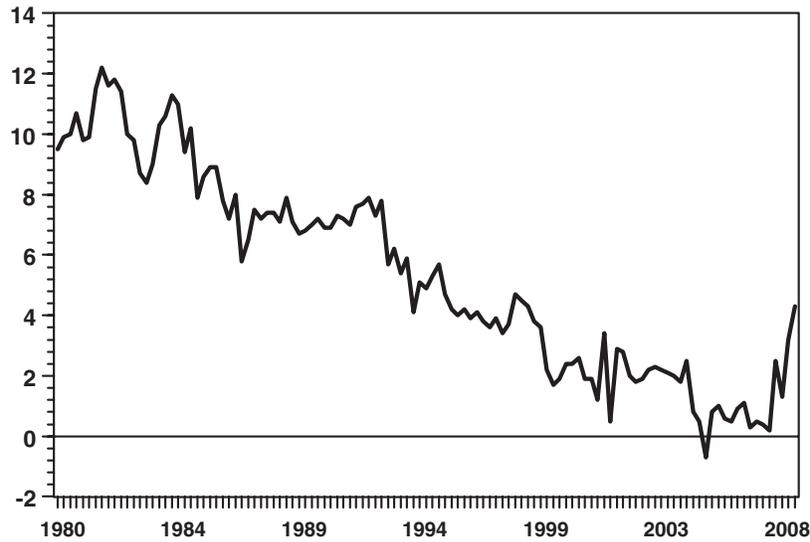
Throughout 2008, employment was falling but until mid-year real GDP continued to expand. A stimulus package of income tax rebates and business tax cuts passed early in the year helped postpone the worst ef-

fects of the recession for several months. However, in September 2008, the long-established investment banking firm of Lehman Brothers failed and that failure reignited the credit crunch, pushing yield spreads to new and dizzying heights. Two days following the failure of Lehman Brothers, the Federal Government stepped in to prevent the failure of the insurance giant American International Group (AIG), seeking to avoid an even wider spread financial panic. The value of other asset-backed securities came into question, and even money market mutual funds experienced large withdrawals. Since then finance ministries and central banks around the world have tried with some success to contain the damage from the spreading crisis, and risk spreads are narrower today than they were six months ago. Nevertheless, uncertainty remains high, and the repercussions from the financial crisis have deepened the recession in the broader world economy, which in turn has fed back to weaken financial institutions further.

Negative Wealth Effects and Consumption: Between the third quarter of 2007 and the fourth quarter of 2008, the net worth of American households declined by \$13 trillion, or 20 percent. The decline in the stock market and falling house prices were the main reasons for the drop in household wealth. Americans reacted to this massive loss of wealth by trying to save more. The household saving rate, which had been declining since the 1980s and had fallen to just 0.6 percent in 2007, shot up to over 4 percent in January and February, to reach its highest level in over a decade. In the long-run, increased saving is desirable because it raises future living standards. However, a sudden increase in the desire to save implies a corresponding reduction in consumer demand and that fall-off in consumption has had a devastating effect on the economy. In last year's third quarter, real consumer spending fell for the first time since 1991, and it fell even more in the

Chart 12-4. The Personal Saving Rate

Percent of Disposable Personal Income



fourth quarter. As of January 2009, the monthly level of real consumer spending was exactly where it had been two years earlier at the beginning of 2007. These sharp declines helped to push down overall real GDP growth to -6.3 percent at an annual rate in the fourth quarter, while raising the personal saving rate to heights not seen since the 1990s.

Policy Background

The Administration and the Federal Reserve have taken a series of actions to reverse the decline in demand that caused the recession. On the fiscal side, the most important step was the passage in February of the American Recovery and Reinvestment Act. This bill will dispense \$825 billion in tax reductions and new spending, most of it within the next eighteen months, and it is expected to have a major effect on employment and economic growth. The 2010 Budget will extend these actions through tax reduction for middle-class families and through investments in health care, energy, education, and our armed forces. These measures will provide for a sustained recovery with enhanced security and improved productivity. Meanwhile, the Federal Reserve has lowered interest rates and made credit widely available to stimulate the economy.

Fiscal Policy: The Federal budget affects the economy through many diverse channels. For an economy in a deep recession, the most important of these is the budget's effect on aggregate demand. In a slumping economy, the level of aggregate demand is the main determinant of how much is produced and how many workers will be employed. Federal spending on goods and services can substitute for missing private spending while changes in taxes and transfers can contribute to demand by enabling people to spend more than they otherwise would. The American Recovery and Reinvestment Act bolsters aggregate

demand in several ways while laying the foundation for a sustained recovery. It increases spending on goods and services at the Federal level; it provides assistance to State Governments; it includes large tax reductions for middle-class families; and it extends unemployment and other benefits which will allow people to maintain spending levels.

Key provisions of the Act include:

- The Making Work Pay tax credit, which extends tax relief to 95 percent of workers and their families.
- A total of \$308 billion in tax relief.
- A \$111 billion investment in infrastructure and science.
- A doubling of renewable energy production capacity over the three years through 2011.
- Subsidized health insurance coverage for unemployed workers, which acts like a tax reduction by allowing families to continue paying their other bills while avoiding reductions in consumption.
- The largest Federal investment in education in history.
- A total of about \$180 billion in State and local fiscal relief.
- An increase of \$81 billion in funding for unemployment insurance and other programs to protect the most vulnerable.

The Recovery Act was designed to go into effect quickly, so that the money will be spent when it can do the most good in stimulating real economic growth and reducing unemployment as the economy begins to recover from the recession.

The 2010 Budget necessarily increases the deficit in the near term to deal with the recession and get the economy growing again, but in the medium term as the economy recovers, the Budget provides a path to lower deficits and a more stable ratio of Federal debt to GDP. The increase in the deficit is an extraordinary but necessary response to an inherited crisis. It is also temporary. If the 2010 Budget is adopted, the deficit will be cut in half by 2012.

In the long run, the most important macroeconomic effects of the Federal budget are on the allocation of saving and the level of private investment. Large budget deficits become harmful in a long-run context because they entail some combination of reduced funds available to finance domestic investment or increased borrowing from abroad to finance that domestic investment. Either way, budget deficits reduce future national income—either because the nation does not have as much productivity-enhancing capital in the future or because we owe larger liabilities to foreign creditors. In the extreme, sustained deficits could seriously harm the economy. Large deficits would also limit the Government's maneuvering room to handle crises in the future.

Health Reform Is Needed for Long-Run Fiscal Stability: The health reforms proposed in this budget are the key to achieving long-run fiscal stability. Without significant health reform it will be impossible to rein in Federal spending as required for fiscal stabilization, since in the absence of reform the Government's major health programs – Medicare and Medicaid – are projected to be the most rapidly growing programs in the budget by a large margin. A successful health reform that slows the growth of per capita health care costs is also the essential ingredient for expanding health insurance coverage without permanently adding to the projected level of long-run spending.

Monetary Policy: The Federal Reserve is responsible for monetary policy. Traditionally, it has acted cautiously, but in the current crisis the Fed has boldly proceeded to create new institutions and open new channels for monetary policy. The reason for departing from past practice is that the traditional tool of monetary policy – adjusting short-term interest rates – has proved insufficient in stimulating growth and preventing unemployment in the current recession. Short-term interest rates in the United States have been reduced from 5-1/4 percent in July 2007 to near zero in December 2008, and it is not possible for them to go any lower.

In light of the floor on short-term interest rates, the Federal Reserve has sought to increase credit availability in several novel ways. First, it has taken action to make sure that financial institutions have access to short-term credit. The financial crisis has been marked by a reluctance of financial institutions to lend to one another. The Federal Reserve has tried to counter that reluctance by making credit directly available to institutions that need liquidity.

The Federal Reserve has been willing to lend generously to banks, but that lending by itself does not necessarily induce the banks to lend to their customers, and the Federal Reserve's bank lending does not provide liquid-

ity to nonbank financial markets such as the commercial paper market. To address these problems, the Federal Reserve has created facilities to provide credit to the commercial paper market directly and to provide backup liquidity for money market mutual funds, in a way taking the place of private banks which have been crippled by the financial crisis. The Federal Reserve together with Treasury has expanded another facility to lend against AAA-rated asset-backed securities collateralized by student loans, auto loans, credit card loans, and business loans guaranteed by the Small Business Administration (SBA). The Federal Reserve has also decided to buy longer-term securities for its portfolio. Traditionally, the Federal Reserve has limited its open market operations to short-term Government securities, but it will now begin to acquire long-term debt including the debt of the government-sponsored enterprises (GSEs) and mortgage-backed securities guaranteed by Federal agencies. In this way, the Federal Reserve is acting to bring downward pressure on long-term interest rates which have not fallen as much as the short-term rates traditionally targeted by monetary policy.

The Federal Reserve's actions have helped ease the credit crisis as evidenced by a decline in the interest rate spread between U.S. Treasuries and other securities. Although the LIBOR spread remains elevated, it has declined from around 4 percent late last year to under 1 percent in early April. The expanded credit facilities have caused a huge increase in the Federal Reserve's balance sheet. Federal Reserve assets have increased from around \$1 trillion to over \$2 trillion. This large increase holds the potential for an explosive increase in the Nation's money supply. So far that has not occurred, because much of the increase in Federal Reserve liabilities has gone into idle reserves of the banks. Because of this and because the weaknesses in the economy are expected to dampen future price increases, current inflation risks are low. The Federal Reserve is prepared to reduce the assets on its balance sheet promptly as the economy recovers from the current recession and the crisis in the financial sector eases, as a result, future inflation risks should be manageable.

Financial Stabilization Policies: In the past 100 days, the administration has moved aggressively to remedy the problems plaguing financial markets. The Administration is implementing a Financial Stability Plan which is designed to clean up and strengthen the nation's banking system by bringing in private capital to restart lending, and get credit flowing again to consumers and businesses. This plan began with a forward-looking capital assessment exercise for the 19 U.S. banking institutions with assets in excess of \$100 billion. The exercise was designed to ensure that these institutions have sufficient capital to withstand more stressful economic conditions, should such conditions arise.

The second component of the Financial Stability Plan is aimed at starting a market for the troubled real-estate related assets that are at the center of the current crisis. The plan includes provisions for the Federal Government to join private investors in buying mortgage-backed

Table 12-1. ECONOMIC ASSUMPTIONS¹
(Calendar years; dollar amounts in billions)

	2007 Actual	Projections											
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Gross Domestic Product (GDP):													
Levels, dollar amounts in billions:													
Current dollars	13,808	14,281	14,291	14,902	15,728	16,731	17,739	18,588	19,415	20,279	21,181	22,124	23,108
Real, chained (2000) dollars	11,524	11,671	11,527	11,893	12,372	12,937	13,474	13,870	14,231	14,601	14,981	15,371	15,771
Chained price index (2000 = 100), annual average	119.8	122.4	124.0	125.3	127.1	129.3	131.6	134.0	136.41	138.87	141.37	143.91	146.51
Percent change, fourth quarter over fourth quarter:													
Current dollars	4.9	1.7	1.4	4.8	6.0	6.5	5.6	4.5	4.5	4.4	4.4	4.5	4.4
Real, chained (2000) dollars	2.3	-0.2	0.3	3.5	4.4	4.6	3.8	2.6	2.6	2.6	2.6	2.6	2.6
Chained price index (2000 = 100)	2.6	1.9	1.0	1.2	1.5	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Percent change, year over year:													
Current dollars	4.8	3.4	0.1	4.3	5.5	6.4	6.0	4.8	4.5	4.4	4.4	4.4	4.4
Real, chained (2000) dollars	2.0	1.3	-1.2	3.2	4.0	4.6	4.2	2.9	2.6	2.6	2.6	2.6	2.6
Chained price index (2000 = 100)	2.7	2.2	1.2	1.1	1.5	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Incomes, billions of current dollars:													
Corporate profits before tax	1,886	1,609	1,588	1,708	1,821	1,945	2,081	2,157	2,224	2,308	2,427	2,574	2,716
Employee compensation	7,812	8,048	8,102	8,441	8,931	9,493	10,049	10,549	11,040	11,554	12,086	12,623	13,199
Wages and salaries	6,362	6,543	6,575	6,838	7,236	7,692	8,142	8,548	8,941	9,347	9,778	10,207	10,671
Other taxable income ²	3,096	3,177	3,194	3,423	3,669	3,872	4,021	4,168	4,323	4,484	4,658	4,857	5,070
Consumer Price Index (all urban):³													
Level (1982-84 = 100), annual average	207.3	215.2	214.0	217.5	221.3	225.8	230.5	235.3	240.3	245.3	250.5	255.7	261.1
Percent change, fourth quarter over fourth quarter	4.0	1.5	0.8	1.6	1.8	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Percent change, year over year	2.9	3.8	-0.6	1.6	1.8	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Unemployment rate, civilian, percent:													
Fourth quarter level	4.8	6.9	8.1	7.7	6.8	5.6	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Annual average	4.6	5.8	8.1	7.9	7.1	6.0	5.2	5.0	5.0	5.0	5.0	5.0	5.0
Federal pay raises, January, percent:													
Military ⁴	2.7	3.5	3.4	2.9	NA	NA	NA	NA	NA	NA	NA	NA	NA
Civilian ⁵	2.2	3.5	2.9	2.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
Interest rates, percent:													
91-day Treasury bills ⁶	4.4	1.4	0.2	1.6	3.4	3.9	4.0	4.0	4.0	4.0	4.0	4.0	4.0
10-year Treasury notes	4.6	3.7	2.8	4.0	4.8	5.1	5.2	5.2	5.2	5.2	5.2	5.2	5.2

NA = Not Available

¹ Based on information available as of end of January 2009.

² Rent, interest, dividend, and proprietors' income components of personal income.

³ Seasonally adjusted CPI for all urban consumers.

⁴ Percentages apply to basic pay only; percentages to be proposed for years after 2010 have not yet been determined.

⁵ Overall average increase, including locality pay adjustments. Percentages to be proposed for years after 2010 have not yet been determined.

⁶ Average rate, secondary market (bank discount basis).

securities. Removing these assets from the banks' balance sheets is a key step to restoring the financial system to normal functioning. The final component of the Financial Stability Plan aims to unfreeze secondary markets for loans to consumers and businesses using public resources to leverage private investors through the Term Asset-Backed Securities Loan Facility of the Federal Reserve. The Administration has also undertaken a Homeowner Affordability and Stability Plan to help millions of Americans refinance their mortgages at lower interest rates. This initiative aims to reach borrowers who are current on their mortgages and have played by the

rules but who are at high risk of foreclosure if prices fall further. Many of these borrowers live in communities where home values have fallen 20 percent or more and who find themselves unable to refinance at today's low interest rates because their loan-to-value ratio is above 80 percent. For the 4 to 5 million such homeowners with conforming loans either owned or guaranteed by Freddie Mac and Fannie Mae, this initiative will allow these borrowers to refinance at today's low rates, reducing the chance that they will default if prices fall further.

A second part of this plan would reach out to an additional 3 to 4 million American families who, because

they have high mortgage-debt to income ratios or because their mortgage exceeds their home value, are at high risk of default. This component of the plan will provide incentive payments to owners, servicers, and lenders to make loan modifications to bring down interest rates so that the borrower’s monthly mortgage payment is no greater than 31 percent of his or her income. A final part of the Homeowner Affordability and Stability Plan increases the Government’s funding commitment to support Fannie Mae and Freddie Mac as they work to keep mortgage rates down and increase the size of their loan portfolios.

Economic Projections

The Administration’s economic projections underlying the Budget estimates are summarized in Table 12–1. The assumptions are based on information available as of late January 2009. This section discusses the Administration’s projections and the next section compares these projections with those of the Congressional Budget Office (CBO) and the Blue Chip Consensus.

Real GDP and the Unemployment Rate: Real GDP is now estimated to have fallen 0.8 percent from the fourth quarter of 2007 through the end of 2008. This was the first four-quarter decline in real GDP since 1991. The year ended on an especially weak note with real GDP dropping at a 6.3 percent annual rate in the fourth quarter, the largest decline in a single quarter since 1982. Payroll employment has declined every month since December 2007, and the unemployment rate has risen substantially. In March, the national unemployment rate reached 8.5 percent, the highest it has been since 1983. Broader measures of labor underutilization record a similar increase. The broadest measure of unemployment and underemployment reported by the Bureau of Labor Statistics has

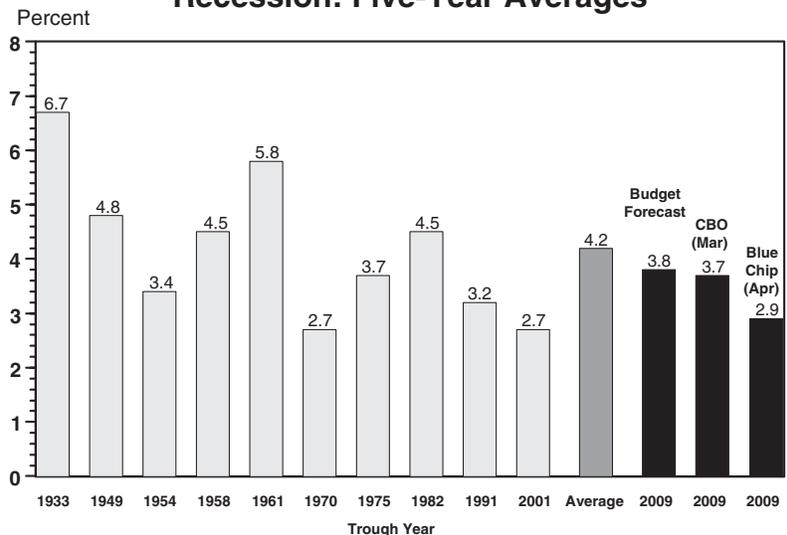
increased from 7.9 percent in December 2006 to 15.6 percent in March.

The Administration projects an economic recovery will begin in the second half of the year sparked by the American Recovery and Reinvestment Act. By the end of the year, real growth is expected to have reached 3-1/2 percent at an annual rate, a pace that is maintained through 2010. In 2011-2013, the rate of growth in real GDP is projected to accelerate to around 4-1/2 percent annually for several quarters. This rapid growth is expected to push down the unemployment rate, which is projected to return to 5.0 percent by the end of 2013.

As shown in the chart below, the Administration’s projections for real GDP growth over the next five years imply a recovery that is a bit below average. It is true that recent recoveries have been somewhat weaker, but the last two expansions were preceded by very mild recessions, which left less pent-up demand when conditions improved. Some analysts believe the recovery from the current recession will be weak, because it will be crippled by continuing problems in the financial sector. The Administration takes the view that the steps it has already taken along with future actions will resolve those financial problems in a timely manner. Although the economic downturn so far in 2009 has been more severe than the Administration expected when the forecast was finalized, if the financial system begins to function more normally, there is every reason to expect a somewhat stronger recovery given the depth of the current recession.

Estimate of Jobs Saved or Created: The President’s Council of Economic Advisers has estimated that the Recovery Act will create or save 3-1/2 million jobs by the end of 2010. This estimate is based on “multipliers” from standard macroeconomic models which suggest that extra

Chart 12-5. Economic Growth Following a Recession: Five-Year Averages



government spending on goods and services leads to a total increment in aggregate demand equal to 1.6 times the increase in Federal spending, while a tax reduction has a multiplier of 1.0 for a permanent reduction (one-time tax rebates have a much smaller multiplier).

Longer Term Growth: The Administration forecast does not attempt to project cyclical developments beyond the next few years. The long-run projection for real economic growth and unemployment assumes that they will maintain trend values in the years following the return to full employment. In the nonfarm business sector, productivity growth is assumed to hold to its recent trend of around 2.3 percent per year, while nonfarm labor supply grows at a rate of around 0.7 percent per year, so nonfarm business output grows approximately 3.0 percent per year. Real GDP growth, reflecting the slower measured growth in activity outside the nonfarm business sector, proceeds at a rate of 2.6 percent. That is markedly slower than the average growth rate of real GDP since 1947 – 3.3 percent per year. In the 21st century, economic growth in the United States is likely to be permanently slower than it was in earlier eras because of the slowdown in labor force growth that is expected to occur beginning with the retirement of the post-World War II “baby boom” generation.

Is Real GDP a Random Walk? Not Exactly: The Administration forecast reflects traditional business cycle analysis in which a period of weak or negative growth is followed by a recovery and expansion during which real GDP grows above trend for a time. This is consistent with the natural rate hypothesis and Okun’s Law. Okun’s Law holds that faster than normal growth is needed to reduce unemployment from an elevated level to its long-run value. Alternatively, some economists believe that real GDP behaves more like a random walk (with drift) in which the best possible projection of future growth is simply the long-run average growth rate observed in the past. On this view, there would be no reason to project above-normal growth at any time.

It has proven difficult to resolve this issue empirically. Official statistics for real GDP extend back to 1947 on a quarterly basis, but that is not long enough to settle the issue definitively. Furthermore, the right answer could well be a blend of the two views, in which real GDP grows at an above-normal rate following a recession but does not return to the previous trend level, but to a somewhat lower level. There also appear to be breaks in the data where the long-run average growth rate shifts up or down, which complicates the statistical testing for randomness. Indeed, the Administration forecast includes such a break in the growth trend because of the expected slowdown in labor force growth.

Unemployment: In the forecast, the unemployment rate converges on 5.0 percent, which the Administration believes is a rate consistent with stable price inflation. When the forecast was finalized in early February, the unemployment rate was expected to peak at an annual average over 8 percent, but economic developments since the forecast was made suggest that unemployment may peak at an even higher rate, even on an annual average basis.

The decline in unemployment projected for 2010-2013 is consistent with the Okun’s Law relationship mentioned above and the Administration’s assumption for potential growth in real GDP. As the official unemployment rate declines, so should the broader measures of labor underutilization.

Inflation: Inflation was volatile in 2008, in large part because of fluctuations in energy prices. Over the 12 months of the year, the CPI fell by 0.1 percent, but during the course of the year, the monthly inflation rate varied between 0.9 percent and -1.7 percent (not annualized). The price declines at the end of the year were the steepest in the post World War II period. The inflation rate is expected to remain subdued over the next few years, mainly because of economic weakness which has depressed the labor market and suppressed producers’ pricing power. With the recovery path assumed in the Administration forecast, the risk of outright deflation appears minimal. In the long-run, the Administration assumes that the rate of change in the CPI will average 2.1 percent and that the GDP price index will increase at a 1.8 percent annual rate. These values are within the Federal Reserve’s comfort zone for inflation.

Interest Rates: Interest rates on Treasury securities fell sharply in late 2008, which brought both short-term and long-term rates to their lowest levels in decades. So far in 2009, short-term Treasury rates have remained near zero, and the ten-year yield remains near 3 percent. Investors have sought the security of Treasury debt during the heightened financial uncertainty of the last several months. In the projection period, interest rates are expected to rise as financial concerns are alleviated and the economy recovers from recession. The 91-day Treasury bill rate is projected to reach 4.0 percent and the 10-year rate 5.2 percent by 2013, at which point unemployment will have reached its long-run value and the annual growth rate of real GDP will have stabilized at 2.6 percent. These forecast rates are historically low, reflecting lower inflation in the forecast than for most of the post World War II period. After adjusting for inflation, the projected real interest rates are close to their historical averages.

Income Shares: The share of labor compensation in GDP was low by historical standards in 2008 and is expected to rise over the forecast period. As a share of GDP employee compensation was 56.4 percent in 2008 and it is expected to rise to around 57.1 percent toward the end of the 10-year forecast horizon. In the expansion that ended in 2007, labor compensation tended to lag behind the growth in productivity. Output per hour in nonfarm business grew at an average annual rate of 2.3 percent, while real hourly compensation adjusted for the increase in product prices was increasing at a rate of only 1.6 percent. In 2008 the differential narrowed from 0.6 percent to 0.2 percent, and in the forecast, the Administration assumes that compensation will keep pace with productivity.

While the overall share of labor compensation is expected to increase, the wage share is expected to remain roughly flat. The share of employee fringe benefits which

supplement taxable wages and salaries takes up most of the increase in compensation. Rising health insurance costs will put upward pressure on the share of fringe benefits.

The share of corporate profits was 12.9 percent of GDP in the third quarter of 2006 prior to the recession, which was near an all-time high. Since then profits have dropped sharply. They are forecast to be only 9.5 percent of GDP in 2009. As the economy recovers, the profit share is expected to rebound. In the forecast, the ratio of profits to GDP reaches 10-1/2 percent in 2011 and remains roughly stable at that level.

Comparison with CBO and Private-Sector Forecasts

Table 12–2 compares the economic assumptions for the 2010 Budget with projections by the Congressional Budget Office (CBO) and by the Blue Chip Consensus, an average of about 50 private-sector economic forecasts. These other economic projections differ in some respects from the Administration's projections, but the forecast differences are relatively small compared with the margin of error in all economic forecasts, and in broad outline, the three forecasts are similar. All three agree that the recession is likely to end in 2009 and that the economy will begin to recover showing positive growth in 2010

Table 12–2. COMPARISON OF ECONOMIC ASSUMPTIONS
(Calendar years)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Nominal GDP:												
2010 Budget	14,281	14,291	14,902	15,728	16,731	17,739	18,588	19,415	20,279	21,181	22,124	23,108
Congressional Budget Office (March 2009)	14,257	14,047	14,576	15,233	15,950	16,684	17,421	18,138	18,873	19,624	20,381	21,164
April Blue Chip Consensus ¹	14,263	14,080	14,524	15,304	16,172	17,024	17,903	18,779	19,672	20,607	21,587	22,613
Real GDP (year-over-year):												
2010 Budget	1.3	-1.2	3.2	4.0	4.6	4.2	2.9	2.6	2.6	2.6	2.6	2.6
Congressional Budget Office (March 2009)	1.1	-3.0	2.9	4.0	4.1	4.0	3.5	2.7	2.5	2.4	2.3	2.2
April Blue Chip Consensus ¹	1.1	-2.6	1.8	3.4	3.4	3.0	2.9	2.7	2.6	2.6	2.6	2.6
Real GDP (fourth-quarter-over-fourth-quarter):												
2010 Budget	-0.2	0.3	3.5	4.4	4.6	3.8	2.6	2.6	2.6	2.6	2.6	2.6
Congressional Budget Office (March 2009)	-0.9	-1.5	4.1	4.1	4.1	3.9	3.2	2.6	2.4	2.3	2.2	2.2
April Blue Chip Consensus ¹	-0.8	-1.3	2.7	3.6	3.3	2.9	2.9	2.6	2.6	2.6	2.6	2.6
GDP Price Index:²												
2010 Budget	2.2	1.2	1.1	1.5	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Congressional Budget Office (March 2009)	2.2	1.5	0.8	0.5	0.6	0.6	0.9	1.4	1.5	1.6	1.6	1.6
April Blue Chip Consensus ¹	2.2	1.4	1.3	1.7	1.9	2.2	2.2	2.3	2.3	2.3	2.3	2.3
Consumer Price Index (CPI-U):²												
2010 Budget	3.8	-0.6	1.6	1.8	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Congressional Budget Office (March 2009)	3.8	-0.7	1.4	1.2	1.0	1.0	1.2	1.6	1.9	1.9	1.9	1.9
April Blue Chip Consensus ¹	3.8	-0.8	1.7	2.1	2.3	2.4	2.5	2.5	2.5	2.5	2.5	2.5
Unemployment Rate:³												
2010 Budget	5.8	8.1	7.9	7.1	6.0	5.2	5.0	5.0	5.0	5.0	5.0	5.0
Congressional Budget Office (March 2009)	5.8	8.8	9.0	7.7	6.6	5.6	5.1	4.9	4.8	4.8	4.8	4.8
April Blue Chip Consensus ¹	5.8	8.9	9.5	8.1	7.1	6.4	5.9	5.7	5.6	5.5	5.5	5.5
Interest Rates:³												
91-Day Treasury Bills (discount basis):												
2010 Budget	1.4	0.2	1.6	3.4	3.9	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Congressional Budget Office (March 2009)	1.4	0.3	0.9	1.8	3.0	3.9	4.4	4.7	4.7	4.8	4.8	4.8
April Blue Chip Consensus ¹	1.4	0.3	0.9	2.8	3.6	4.0	4.2	4.3	4.2	4.2	4.2	4.2
10-Year Treasury Notes:												
2010 Budget	3.7	2.8	4.0	4.8	5.1	5.2	5.2	5.2	5.2	5.2	5.2	5.2
Congressional Budget Office (March 2009)	3.7	2.9	3.4	4.0	4.6	5.0	5.3	5.4	5.5	5.6	5.6	5.6
April Blue Chip Consensus ¹	3.7	2.9	3.5	4.5	4.9	5.2	5.4	5.4	5.4	5.4	5.4	5.4

Sources: Administration; CBO, *A Preliminary Analysis of the President's Budget and an Update of CBO's Budget and Economic Outlook*, March 2009; April 2009 *Blue Chip Economic Indicators*, Aspen Publishers, Inc.

¹ The Blue Chip forecast was extended to 2011-2019 using the March long-run Blue Chip projections, quarterly growth rates for 2011-2019 were interpolated.

² Year-over-year percent change.

³ Annual averages, percent.

and beyond. They are agreed that inflation will be at a low rate in 2009-2010, but outright deflation is avoided. They agree that after peaking at a relatively high rate, unemployment gradually declines and interest rates also return to more normal levels.

The three sets of economic assumptions are based on different underlying assumptions concerning economic policies. The Administration forecast assumes that the President's Budget proposals will be enacted and that the Financial Stability Plan and Homeowner Affordability and Stability Plan will be fully implemented. In contrast, the CBO baseline projection assumes that current law as of the time the estimates were made in March remains unchanged. The 50 or so private forecasters in the Blue Chip Consensus make differing policy assumptions, but none would necessarily assume that the Budget and financial rescue plans are adopted in full. Sometimes these policy differences have relatively little effect on the forecast outcomes, but that is not so in the current environment. The fiscal changes proposed in the budget and the related plans for financial stabilization are large enough to have a major effect on the macroeconomic outlook.

The forecasts also differ because they were made on different dates. Usually a several week difference in forecast dates has little impact on economic forecasts, but in the weeks since the Administration forecast was made, economic data have appeared showing that the economy was much weaker at the end of 2008 and beginning of 2009 than was apparent earlier. Because the CBO and Blue Chip Consensus forecasts were made several weeks later, they reflect the more recent data and consequently offer a somewhat more pessimistic economic outlook.

Real GDP Growth: In analyzing forecast differences with respect to real GDP growth, it is useful to consider two questions separately: how deep will the current recession be and what type of recovery is likely once the recession ends? The Administration's real GDP projections are more optimistic than CBO and the private consensus on

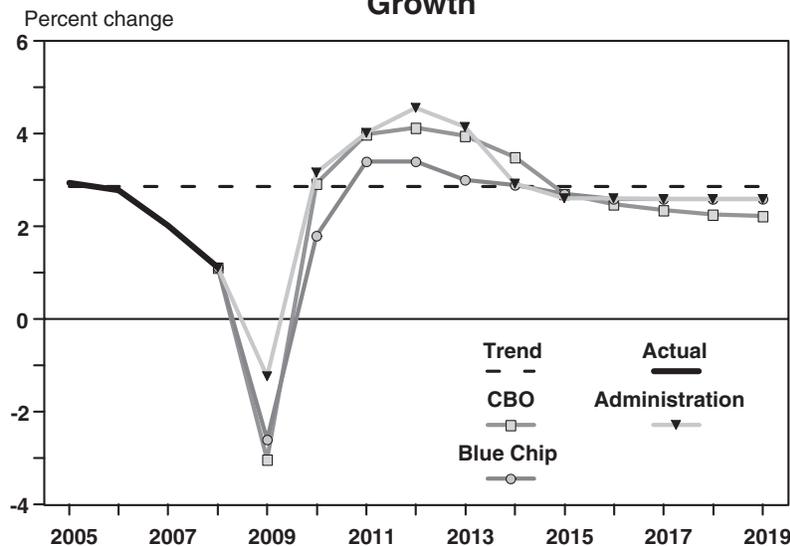
both points, but the second is much more important for the budget outlook than the first.

Between the end of World War II and 2008, there were ten recessions in the United States. The average decline, from the peak quarter for real GDP to the trough, was 2.0 percent during those ten recessions. The Administration assumes that the current recession will be somewhat worse than this average experience. Meanwhile, CBO and the Blue Chip consensus both expect the recession to be much deeper than average. Nevertheless all three forecasts expect the recession to end in 2009. None anticipates a repeat of the four-year decline from 1929 to 1933, so the difference is mainly a question of when in 2009 the recession will end and how low real GDP will sink before reaching that point.

Naturally, there is great concern about these questions since they bear on how long the current period of mounting job losses will continue, but even were the recession to turn out deeper than the Administration originally forecast, it would not necessarily have a large permanent effect on the budget projections—provided the recovery from the recession adjusts in an offsetting way. The Administration's forecast assumption is that the depth of the recession does not affect the long-run level of real GDP, which is instead tied to potential output and is not affected by the business cycle. Unless a deeper recession affects the projection of the underlying trend for real GDP, it would have only a modest effect on the medium-term budget.

Differences in the potential rate of real GDP growth do have a profound effect on the budget projections, and these are the most important differences separating the Administration's forecast from those of CBO and the Blue Chip. As shown in the chart below, the Administration assumes that real GDP will grow rapidly in the years ahead as it recovers from the 2008-2009 recession. CBO and the Blue Chip are more pessimistic about the long-run outlook. CBO has relatively rapid growth beginning in 2011,

Chart 12-6. Alternative Projections of Real GDP Growth



but not rapid enough to offset the loss expected from the recession, and in the final years of the projection period, CBO has real growth sinking to 2.2 percent. Since 1947, U.S. real GDP has grown at an average rate of 3.3 percent, although the average growth rate over the last 35 years has averaged only 2.8 percent. The Blue Chip consensus is somewhat more optimistic than CBO about the final years of the forecast as its long-run growth rate is 2.6 percent, the same as the Administration assumes, but the Blue Chip has the smallest expected recovery from the current recession in 2010-2013.

A deep recession does not necessarily imply a slow recovery; if anything, it implies the opposite. The historical record points in the other direction with deeper recessions being followed by stronger recoveries. The strongest recovery since 1929 was during the five years following the Great Contraction of 1929-1933. Two important factors could contribute to a weaker than normal expansion: (1) a protracted credit crunch in which the problems in the financial markets are not resolved in 2009 and (2) a deeper world-wide slump that holds down U.S. exports and offsets the effects of fiscal stimulus on domestic demand. Both are possible, but the Administration believes that the credit market problems will be resolved in a timely fashion, and that the United States will once again lead the world out of recession as it has in the past.

It is worth remembering that all economic forecasts are subject to error, and the forecast errors are usually much larger than the forecast differences discussed above. Past forecast errors among the Administration, CBO, and the Blue Chip have been roughly similar.

Unemployment: The near-term differences in the unemployment rate forecasts track the differences in expected real GDP growth. Unemployment rises higher in the CBO and Blue Chip forecasts, because they both expect a deeper and somewhat longer recession than the Administration does. Unemployment peaks at 9.1 percent in 2010 according to the Consensus forecast, while it reaches 9.0 percent in the CBO forecast. In the long run, CBO expects unemployment to return to 4.8 percent, while the Blue Chip only sees it returning to 5.5 percent. The Administration's long-run projection for the unemployment rate is 5.0 percent.

Inflation: The three inflation forecasts are much closer. All three forecasts anticipate a slowdown in inflation in 2009-2010 followed by a gradual return of inflation to the range of 1.6 to 2.3 percent as measured by the GDP price index and between 1.9 and 2.5 percent as measured by the CPI. CBO has the lowest inflation forecast while the Consensus is the highest with the Administration in the middle. None of the forecasters expects the slowdown in inflation to turn into deflation although that risk would appear to be greater in the two forecasts with the slower real growth projections. The Blue Chip projection is somewhat puzzling in that its very weak recovery might have been expected to produce a larger permanent change in the inflation rate. CBO, by contrast, has five consecutive years of less than 1-percent inflation.

Interest Rates: The three forecasts are also similar in their projections for interest rates. They anticipate that

interest rates will rise between 2009 and 2012 converging on stable higher levels in 2013 and beyond. CBO projects that the long-run yield on 10-year Treasury notes will be 5.6 percent and Blue Chip projects 5.4 percent. The Administration projects a long-run value of 5.2 percent. Short-term rates are expected to be near zero in 2009, but then to increase reaching a long-run rate of 4.0 percent in the Administration projections, 4.2 percent in the Blue Chip Consensus, and 4.8 percent in the CBO projections. The principal difference between CBO and the Administration projections is that the Administration anticipates a gradual restoration of a yield curve spread between long-term and short-term interest rates that is closer to the historical average.

Changes in Economic Assumptions

The economic assumptions underlying this Budget have changed compared with those used by the previous Administration for the 2009 Budget, although more in the short run than in the long run, as shown in Table 12-3. The previous Administration's final Budget did not anticipate the 2008-2009 recession. Consequently, the projected growth rates for 2008-2009 turned out to be far above those in the current Budget. For the same reason, the strong economic recovery projected for 2010-2013 was not anticipated in the previous Budget and real growth rates for those years are lower than in the current Budget. Finally, the long-run growth trend was pegged at 2.7 percent per year in the previous Budget and that has been revised down slightly to 2.6 percent per year in the current Budget.

The long-run unemployment rate projection is raised from 4.8 percent in the previous Budget to 5.0 percent in the current Budget, while near-term unemployment has been increased substantially as a result of the recession. Inflation was projected to be quite stable in the 2009 Budget at 2.0 percent for the GDP price index and 2.3 percent in most years for the CPI. In the current Budget, inflation is more subdued in 2009, but it rises subsequently reaching its long-run levels in 2013. These long-run stable values for inflation have been marked down by 0.2 percentage point for both the GDP price index and the CPI. Interest rates were much lower in 2008 than expected in the previous Budget and the current forecast has rates for several years that are below those projected in the 2009 Budget. The long-term values, however, for the 3-month Treasury bill rate and the 10-year Treasury note are close to those in the previous Budget.

Sensitivity of the Budget to Economic Assumptions

Both receipts and outlays are affected by changes in economic conditions. This sensitivity complicates budget planning because errors in economic assumptions lead to errors in the budget projections. It is therefore useful to examine the implications of possible changes in economic assumptions. Many of the budgetary effects of such changes are fairly predictable, and a set of rules of thumb

Table 12-3. COMPARISON OF ECONOMIC ASSUMPTIONS IN THE 2009 AND 2010 BUDGETS
(Calendar years; dollar amounts in billions)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Nominal GDP:											
2009 Budget Assumptions ¹	14,456	15,190	15,961	16,754	17,574	18,432	19,320	20,241	21,206	22,220	23,288
2010 Budget Assumptions	14,281	14,291	14,902	15,728	16,731	17,739	18,588	19,415	20,279	21,181	22,124
Real GDP (2000 dollars):											
2009 Budget Assumptions ¹	11,846	12,203	12,572	12,938	13,305	13,681	14,059	14,440	14,831	15,236	15,653
2010 Budget Assumptions	11,671	11,527	11,893	12,372	12,937	13,474	13,870	14,231	14,601	14,981	15,371
Real GDP (percent change):²											
2009 Budget Assumptions	2.7	3.0	3.0	2.9	2.8	2.8	2.8	2.7	2.7	2.7	2.7
2010 Budget Assumptions	1.3	-1.2	3.2	4.0	4.6	4.2	2.9	2.6	2.6	2.6	2.6
GDP Price Index (percent change):²											
2009 Budget Assumptions	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
2010 Budget Assumptions	2.2	1.2	1.1	1.5	1.7	1.8	1.8	1.8	1.8	1.8	1.8
Consumer Price Index (all-urban; percent change):²											
2009 Budget Assumptions	2.1	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
2010 Budget Assumptions	1.5	0.8	1.6	1.8	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Civilian Unemployment Rate (percent):³											
2009 Budget Assumptions	4.9	4.9	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
2010 Budget Assumptions	5.8	8.1	7.9	7.1	6.0	5.2	5.0	5.0	5.0	5.0	5.0
91-day Treasury bill rate (percent):³											
2009 Budget Assumptions	3.7	3.8	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
2010 Budget Assumptions	1.4	0.2	1.6	3.4	3.9	4.0	4.0	4.0	4.0	4.0	4.0
10-year Treasury note rate (percent):³											
2009 Budget Assumptions	4.6	4.9	5.1	5.2	5.3	5.3	5.3	5.3	5.3	5.3	5.3
2010 Budget Assumptions	3.7	2.8	4.0	4.8	5.1	5.2	5.2	5.2	5.2	5.2	5.2

¹ Adjusted for July 2008 NIPA revisions.

² Year-over-year.

³ Calendar year average.

embodying these relationships can aid in estimating how changes in the economic assumptions would alter outlays, receipts, and the surplus or deficit. These rules of thumb should be understood as suggesting orders of magnitude; they ignore a long list of secondary effects that are not captured in the estimates.

The rules of thumb show how the changes in economic variables affect Administration estimates for receipts and outlays; they are not a forecast of how receipts or outlays would actually change if there were a change in economic conditions. The rules of thumb are based on a fixed budget policy that is not always a good predictor of what might actually happen to the budget should the economic outlook change. This is especially true for inflation. Spending for indexed programs, like Social Security, does respond to changes in inflation, but only with a lag. Annually appropriated (“discretionary”) spending is specified in nominal dollars, and therefore does not vary when there is a change in the projected rate of inflation. Congress would have to act to maintain unchanged purchasing power in discretionary appropriations. Also, the rules of thumb for receipts changes reported here reflect

how Treasury’s receipts estimates would shift with certain economic changes, but they do not capture associated “technical” changes that often accompany a shift in the economic outlook. There is, for example, no rule of thumb for the receipts effect of large changes in capital gains tax realizations that often occur when the economic outlook changes.

Economic variables that affect the budget do not usually change independently of one another. Output and employment tend to move together in the short run: a high rate of real GDP growth is generally associated with a declining rate of unemployment, while slow or negative growth is usually accompanied by rising unemployment. This is the Okun’s Law relationship discussed above. In the long run, however, changes in the average rate of growth of real GDP are mainly due to changes in the rates of growth of productivity and the labor force, and are not necessarily associated with changes in the average rate of unemployment. Inflation and interest rates are also closely interrelated: a higher expected rate of inflation increases interest rates, while lower expected inflation reduces interest rates.

Changes in real GDP growth or inflation have a much greater cumulative effect on the budget if they are sustained for several years than if they last for only one year. However, even one-time changes can have permanent effects if they permanently raise the level of the tax base or the level of Government spending. Highlights of the budgetary effects of these rules of thumb are shown in Table 12–4.

For real growth and employment:

- The first block shows the effect of a temporary reduction in real GDP growth by one percentage point sustained for one year, followed by a recovery of GDP to the base-case level (the Budget assumptions) over the ensuing two years. In this case, the unemployment rate is assumed to rise by one-half percentage point relative to the Budget assumptions by the end of the first year, then return to the base case rate over the ensuing two years. After real GDP and the unemployment rate have returned to their base case levels, most budget effects vanish except for persistent out-year interest costs associated with larger near-term deficits.
- The second block shows the effect of a temporary reduction in real GDP growth by one percentage point sustained for one year along with a permanent increase in the unemployment rate of one-half percentage point relative to Budget assumptions. In this scenario, the level of GDP and taxable incomes are permanently lowered by the reduced growth rate in the first year. For that reason and because unemployment is permanently higher, the budget effects (including growing interest costs associated with larger deficits) continue to grow slightly in each successive year.
- The budgetary effects are much larger if the growth rate of real GDP is permanently reduced by one percentage point even leaving the unemployment rate unchanged as might result from a shock to productivity growth. These effects are shown in the third block. In this example, the cumulative increase in the budget deficit is many times larger than the effects in the first and second blocks.

For inflation and interest rates:

- The fourth block shows the effect of a one percentage point higher rate of inflation and one percentage point higher interest rates maintained for the first year only. In subsequent years, the price level and nominal GDP would both be one percentage point higher than in the base case, but interest rates and future inflation rates are assumed to return to their base levels. Receipts increase by about twice as much as outlays. This is partly due to the fact that outlays for annually appropriated spending are assumed to remain constant when projected inflation changes. Despite the apparent implication of these

estimates, inflation cannot be relied upon to lower the budget deficit, mainly because Congress is not likely to allow inflation to erode the real value of spending permanently.

- In the fifth block, the rate of inflation and the level of interest rates are higher by one percentage point in all years. As a result, the price level and nominal GDP rise by a cumulatively growing percentage above their base levels. In this case, again the effect on receipts is about double the effect on outlays.
- The effects of a one percentage point increase in interest rates alone are shown in the sixth block. The outlay effect mainly reflects higher interest costs for Federal debt. The receipts portion of this rule-of-thumb is due to the Federal Reserve's deposit of earnings on its securities portfolio and the effect of interest rate changes on both individuals' income (and taxes) and financial corporations' profits (and taxes).
- The seventh block shows that a sustained one percentage point increase in the GDP price index and in CPI inflation decreases cumulative deficits substantially. The separate effects of higher inflation and higher interest rates do not sum to the effects for simultaneous changes in both. The gains in budget receipts due to higher inflation result in higher debt service savings when interest rates are also assumed to be higher (the combined case) than when interest rates are assumed to be unchanged (the separate case).
- The last entry in the table shows rules of thumb for the added interest cost associated with changes in the budget deficit, holding interest rates and other economic assumptions constant.

The effects of changes in economic assumptions in the opposite direction are approximately symmetric to those shown in the table. The impact of a one percentage point lower rate of inflation or higher real growth would have about the same magnitude as the effects shown in the table, but with the opposite sign.

Alternative Scenarios

The economic outlook is always uncertain, but it is especially uncertain at present. The rules-of-thumb described above can be used in combination to show the effect on the budget of alternative economic projections. Alternative scenarios can be used to gauge some of the risks to the current budget projections. For example, since the budget assumptions were formulated in late January, there has been further deterioration in economic conditions making a deeper recession a likely possibility. That possibility is explored in the two alternative scenarios presented in this section. Both alternatives allow for the same pattern of growth over the course of 2009-2010 as in the latest Blue Chip forecast (April). The only difference in these scenarios is how strong the recovery is.

Table 12-4. SENSITIVITY OF THE BUDGET TO ECONOMIC ASSUMPTIONS
(In billions of dollars)

Budget effect	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total of Effects, 2009-2019
Real Growth and Employment												
Budgetary effects of 1 percent lower real GDP growth:												
(1) For calendar year 2009 only, with real GDP recovery in 2010-11: ¹												
Receipts	-14.1	-21.9	-10.3	-1.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	-45.8
Outlays	2.7	6.3	5.0	2.8	2.6	2.6	2.7	2.8	2.8	3.0	3.1	36.4
Increase in deficit (+)	16.7	28.2	15.3	4.0	2.4	2.4	2.5	2.5	2.6	2.7	2.8	82.2
(2) For calendar year 2009 only, with no subsequent recovery: ¹												
Receipts	-14.1	-29.3	-34.7	-37.8	-40.0	-41.9	-44.2	-46.5	-48.7	-51.0	-53.5	-441.6
Outlays	2.7	7.6	10.1	13.2	16.4	19.0	21.6	24.5	27.6	31.0	34.5	208.3
Increase in deficit (+)	16.8	36.9	44.8	50.9	56.4	60.9	65.8	71.0	76.3	82.0	88.0	649.9
(3) Sustained during 2009 - 2019, with no change in unemployment:												
Receipts	-14.2	-44.8	-84.8	-130.7	-180.4	-233.8	-291.9	-353.7	-418.4	-488.0	-562.6	-2,803.3
Outlays	-0.4	-0.8	1.9	6.5	12.8	20.6	30.4	42.5	57.0	74.3	94.4	339.2
Increase in deficit (+)	13.8	44.0	86.7	137.2	193.2	254.4	322.4	396.1	475.4	562.3	657.1	3,142.5
Inflation and Interest Rates												
Budgetary effects of 1 percentage point higher rate of:												
(4) Inflation and interest rates during calendar year 2009 only:												
Receipts	17.6	37.6	38.0	37.0	39.7	42.1	44.5	47.0	49.3	51.7	54.1	458.4
Outlays	13.1	26.7	16.0	19.8	20.2	20.4	18.5	18.2	16.2	15.6	15.2	199.8
Decrease in deficit (-)	-4.5	-10.9	-22.0	-17.2	-19.4	-21.7	-26.1	-28.8	-33.1	-36.1	-38.9	-258.6
(5) Inflation and interest rates, sustained during 2009 - 2019:												
Receipts	17.6	58.9	107.2	164.0	212.1	261.9	322.9	388.5	457.9	533.7	615.8	3,140.6
Outlays	13.5	54.1	78.4	111.1	137.3	162.0	185.0	210.0	232.9	254.9	283.1	1,722.2
Decrease in deficit (-)	-4.0	-4.9	-28.8	-53.0	-74.8	-99.9	-137.9	-178.4	-225.1	-278.8	-332.7	-1,418.3
(6) Interest rates only, sustained during 2009 - 2019:												
Receipts	3.9	15.3	24.7	37.1	36.3	33.1	35.6	37.9	40.2	42.4	44.6	351.2
Outlays	8.8	42.6	63.1	77.6	87.9	98.8	108.8	119.1	129.7	140.5	152.5	1,029.4
Increase in deficit (+)	4.9	27.4	38.3	40.5	51.5	65.7	73.2	81.1	89.5	98.0	107.9	678.2
(7) Inflation only, sustained during 2009 - 2019:												
Receipts	13.6	43.6	82.4	126.8	175.6	228.5	287.0	350.1	417.2	490.6	570.4	2,785.7
Outlays	4.7	11.7	16.3	35.3	52.6	67.9	83.2	100.7	116.3	131.8	152.9	773.4
Decrease in deficit (-)	-8.9	-31.9	-66.1	-91.5	-123.0	-160.6	-203.8	-249.4	-300.9	-358.8	-417.4	-2,012.3
Interest Cost of Higher Federal Borrowing												
(8) Outlay effect of \$100 billion increase in borrowing in 2009	0.2	1.0	3.1	4.3	4.7	4.9	5.1	5.3	5.6	5.8	6.0	45.9

* \$50 million or less.

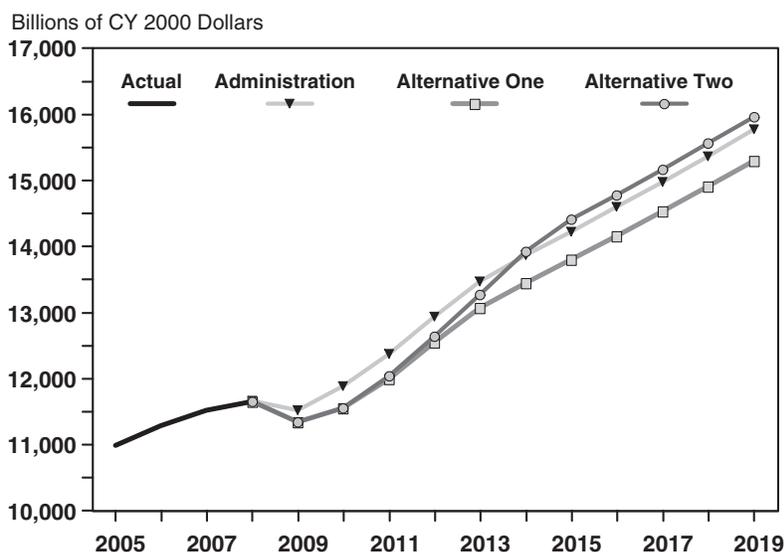
¹ The unemployment rate is assumed to be 0.5 percentage point higher per 1.0 percent shortfall in the level of real GDP.

In the first scenario, growth in 2011-2014 is the same as in the current Administration forecast. In this case, there is a permanent loss of output from the recession that is never made up in the subsequent recovery. The loss is less than in the latest Blue Chip projections, which only show a modest and very partial recovery from the

recession, but there is a substantial loss compared with the Budget as shown in Chart 12-7.

The second alternative scenario makes a different assumption about the recovery period. It assumes that over the five years from 2009 through 2014, growth is equal to the average growth rate achieved in the ex-

Chart 12-7. Alternative Scenarios for Real GDP



pansions that followed most of the recessions since the Great Depression as reflected in Chart 12-7. The average real growth rate following the trough of these recessions has been 4.2 percent. With that type of recovery, the level of real GDP would be higher in 2014 than in the Administration projections and budget deficits after 2014 would be lower than under the Administration’s projections as shown in Table 12-5.

Many other scenarios are possible of course, but the point is that the most important influence on the budget projections beyond the next year or two is the rate of growth achieved once the recession has ended and the expansion has begun.

Structural and Cyclical Deficits

An alternative measure of the budget deficit is called the adjusted structural deficit. It provides a useful perspective on the stance of fiscal policy compared with the unadjusted unified budget deficit. The unadjusted deficit is affected by the business cycle. When the economy is operating below its potential and the unemployment rate

exceeds the level consistent with price stability, receipts are lower, outlays for programs such as unemployment compensation are higher, and the deficit is larger (or the surplus smaller) than it would be otherwise.

The portion of the deficit (or surplus) traceable to the automatic effects of the business cycle is called the cyclical component. The remaining portion of the deficit is called the structural deficit (or structural surplus). Further adjustments are made to remove the effects of transitory financial transactions, such as outlays for bank closings under deposit insurance and the outlays made through the Troubled Asset Relief Program (TARP). Other financial stabilization outlays have also been removed from this adjusted structural deficit including GSE equity purchase programs. The adjusted structural deficit is a better gauge of the underlying stance of fiscal policy than the unadjusted unified deficit because it removes most of the effects of the business cycle and temporary financial transactions.

Estimates of the structural deficit are based on the historical relationship between changes in the unemployment rate and real GDP growth, known as “Okun’s Law,”

Table 12-5. BUDGET EFFECTS OF ALTERNATIVE SCENARIOS
(In billions of dollars)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Alternative Budget Deficit Projections:											
Administration Economic Assumptions	1,841	1,258	929	557	512	536	528	645	675	688	779
Percent of GDP	12.9	8.9	6.5	3.7	3.2	3.1	2.9	3.5	3.5	3.4	3.7
Alternative Scenario 1	1,879	1,346	1,014	670	640	673	678	810	852	879	985
Percent of GDP	13.2	9.6	7.1	4.4	4.0	3.9	3.8	4.3	4.4	4.3	4.6
Alternative Scenario 2	1,879	1,346	1,006	651	593	542	470	574	597	605	689
Percent of GDP	13.2	9.6	7.0	4.3	3.7	3.1	2.5	2.9	2.9	2.8	3.1

which has been discussed above, as well as relationships of unemployment and real GDP growth with receipts and outlays. These estimated relationships take account of the major cyclical changes in the economy and their effects on the budget, but they do not reflect all the possible cyclical effects on the budget, because economists have not been able to identify the cyclical factor in some of these other effects. For example, the recent decline in the stock market will pull down capital gains-related receipts and increase the deficit. Some of this decline is cyclical in nature, but economists have not pinned down the cyclical component of the stock market exactly, and for that reason, all of the stock market's contribution to receipts is counted in the structural deficit.

Another factor that can affect the deficit and is related to the business cycle is labor force participation. Since the official unemployment rate does not include workers who have left the labor force, the conventional measures of potential GDP, incomes, and Government receipts underestimate the extent to which potential work hours are under-utilized because of a decline in labor force participation. The key unresolved question here is to what extent changes in labor force participation are cyclical and to what extent they are structural. By convention, in estimating the structural budget deficit, all changes in labor force participation are treated as structural.

There are also lags in the collection of tax revenue that can delay the impact of cyclical effects beyond the year in which they occur. The result is that even after the unemployment rate has fallen, receipts may remain cyclically depressed for some time until these lagged effects have dissipated. The current recession has added substan-

tially to the cyclical component of the deficit, but for the reasons stated here, the cyclical component is probably understated. As the economy recovers, the cyclical deficit is projected to decline and when unemployment reaches 5 percent, the level assumed to be consistent with stable inflation, the cyclical component vanishes leaving only the structural deficit, although some cyclical effects would arguably still be present.

Despite these limitations, the distinction between cyclical and structural deficits is helpful in understanding the path of fiscal policy. The large increase in the deficit in 2009 and 2010 is due to combination of all three components of the deficit. There is a large increase in the cyclical component because of the rise in unemployment. That is what would be expected considering the severity of the current recession, but that is not the only reason for the increase in the deficit. There is also a large increase in the temporary financial component because of the financial stabilization measures undertaken by the Federal Government. Finally, there is a large increase in the adjusted structural deficit because of the policy measures taken to combat the recession. This reflects the Government's decision to make an active use of fiscal policy to hasten economic recovery. In 2011-2014, the cyclical component declines sharply as the economy recovers. The temporary financial measures lead to an expected inflow of funds and the adjusted structural deficit shrinks as the temporary spending and tax measures in the Recovery Act end.

Table 12-6. ADJUSTED STRUCTURAL BALANCE

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
In billions of dollars:												
Unadjusted deficit	377.6	412.7	318.3	248.2	162.0	458.6	1,841.2	1,258.4	929.4	557.4	512.3	535.9
Less cyclical component	106.4	61.8	14.7	-23.5	-10.5	49.2	297.8	350.9	300.8	185.5	57.9	1.7
Structural deficit	271.2	350.9	303.7	271.7	172.5	409.4	1,543.4	907.6	628.6	372.0	454.4	534.2
Less financial stabilization and deposit insurance	-1.4	-2.0	-1.4	-1.1	-1.5	18.7	727.0	68.9	9.6	-42.5	-53.1	-58.5
Adjusted structural deficit	272.6	352.9	305.0	272.8	174.0	390.7	816.4	838.7	619.0	414.4	507.6	592.7
As a percent of GDP:												
Unadjusted deficit	3.5	3.6	2.6	1.9	1.2	3.2	12.9	8.5	6.0	3.4	2.9	2.9
Less cyclical component	1.0	0.5	0.1	-0.2	-0.1	0.3	2.1	2.4	1.9	1.1	0.3	0.0
Structural deficit	2.5	3.1	2.5	2.1	1.3	2.9	10.8	6.2	4.1	2.3	2.6	2.9
Less financial stabilization and deposit insurance	-0.0	-0.0	-0.0	-0.0	-0.0	0.1	5.1	0.5	0.1	-0.3	-0.3	-0.3
Adjusted structural deficit	2.5	3.1	2.5	2.1	1.3	2.7	5.7	5.7	4.0	2.5	2.9	3.2

NOTE: The NAIRU is assumed to be 5.0%.

13. STEWARDSHIP

Introduction

The budget is an essential tool for allocating resources within the Federal Government and between the public and private sectors, but current outlays, receipts, and the deficit give only a partial picture of the Government's financial condition. For example, the temporary shift from annual deficits to surpluses in the late 1990s did little to slow the long-term growth rate of the Government's major health programs, which is a major reason for the long-run shortfall in Federal finances. As important as the current budget surplus or deficit is, other indicators are also needed to judge the Government's fiscal condition.

For the Federal Government, there is no single number that corresponds to the bottom line in a business balance sheet. The Government is judged by how its actions affect the country's well-being over time, and that cannot easily be summed up with a single statistic. Furthermore, the Government is not expected to earn a profit, so its financial performance cannot be directly compared to that of a business.

One measure of the Government's financial performance is the extent to which it collects the taxes that are owed to it, and another is whether it delivers value in spending the taxes that it collects. Both of those questions are addressed below. In general, the Government's financial status is best evaluated using a broad range of data and several complementary perspectives. This chapter presents a framework for such analysis. Because there are serious limitations on the available data and the fu-

ture is uncertain, this chapter's findings and conclusions should be interpreted as tentative and subject to revision.

The chapter consists of four parts:

- Part I explains how the separate pieces of analysis link together. Chart 13–1 is a schematic diagram showing the linkages.
- Part II presents estimates of the Government's assets and liabilities, which are shown in Table 13–1. This table is similar to a business balance sheet, but for that reason it cannot reveal some of the Government's unique financial features and is necessarily supplemented by the information in Parts III and IV.
- Part III shows a number of long-run paths for the Federal budget. These projections depend on alternative assumptions. The projections are summarized in Table 13–2 and in a related set of charts. Table 13–3 presents the financial outlook for Medicare and Social Security. All these data provide information concerning the scope of the Government's future responsibilities and the resources it will have available to discharge them.
- Part IV presents a summary of national wealth and a small sample of statistical indicators of economic and social conditions. These various measures reflect the outcomes of Government policies, among other factors. It also analyzes tax compliance.

PART I—A FRAMEWORK TO EVALUATE FEDERAL FINANCES

No single framework can encompass all of the factors that affect the financial condition of the Federal Government, but the framework presented here is comprehensive. It includes information about Government assets and liabilities as well as long-run projections of the entire budget showing where future fiscal strains are most likely to appear. The framework includes an analysis of the Government's potential revenue derivable from today's tax structure and what can be done realistically, through better education and more rigorous enforcement of the tax law, to reach that potential. Measures of national wealth, which support future income and tax receipts, are presented along with an array of economic and social indicators.

The Government's binding obligations—its liabilities—include Treasury debt. Accrued obligations for Government insurance policies and the estimated present value of failed loan guarantees and deposit insurance claims also have analogues in the private sector. The

pensions and medical benefits owed to retired Federal employees and veterans are sometimes considered binding liabilities as well. These employee obligations can be thought of as a form of deferred compensation; they have counterparts in the business world and would appear as liabilities on a business balance sheet.¹ These Government liabilities are discussed in Part II along with the Government's financial and physical assets. These liabilities are only a subset of the Government's overall financial responsibilities. Indeed, the full extent of the Government's fiscal exposure through programmatic commitments dwarfs the outstanding total of Federal liabilities. The present value of commitments to Medicare,

¹ The benefits promised to federal retirees and veterans are a step removed from legally enforceable liabilities such as debt and also a step removed from private-sector retiree and health commitments, which are frequently contractual and so legally enforceable. In contrast, the promises to federal retirees and veterans can be, and occasionally have been, reduced by statute. Thus, the analogy to debt, insurance contracts, loan guarantee contracts, and private-sector deferred compensation contracts is not exact.

Medicaid, and Social Security, for example, amount to many times the value of Federal debt held by the public.

The Government offers a broad range of programs that dispense cash and other benefits to individual recipients. In addition to Medicare, Medicaid, and Social Security there are supplemental nutrition assistance program benefits (formerly food stamps), veterans' benefits, unemployment insurance, and Head Start among many others. The Government also provides a wide range of public services that must be financed through the tax system. These programs may be modified or even ended at any time by the Congress and the President, and changes in the laws governing these programs are a regular part of the legislative cycle. For this reason, these programmatic commitments do not constitute "liabilities." They are Federal responsibilities, however, and will have a claim on budgetary resources for the foreseeable future unless the law is changed. Moreover, federal responsibilities that are not cash or in-kind benefits to individuals – such as the need for a Department of Justice, Defense, or State – will surely have a claim on budgetary resources for the foreseeable future. All of the Government's existing programs are reflected in the long-run budget projections in Part III.

The Federal Government has many assets that would also appear on a business balance sheet. These include financial assets, such as loans and mortgages which have been acquired through various credit programs. In recent months, the Government has acquired a wide variety of new financial assets as a result of the programs created to address the current financial crisis. Most of these assets were acquired in 2009, so they do not show up on the table of net assets, which ends in 2008. Other Federal assets include the plant and equipment used to produce Government services. The Government also owns a substantial amount of land. All these assets would be expected to appear on a conventional balance sheet. The Government has other resources in addition to these. These additional resources include most importantly the Government's sovereign power to tax, which would not normally appear on a balance sheet but may be of greater value than all the balance-sheet items combined.

Because of its unique responsibilities and resources, the most revealing way to analyze the future strains on the Government's fiscal position is to make a long-run projection of the entire Federal budget. Part III of this chapter presents a set of such projections under different assumptions. Over long periods of time, the spending of the Government must be financed by the taxes and other receipts it collects. Although the Government can borrow for temporary periods, it must pay interest on any such borrowing, which adds to future spending. In the long run, a solvent Government must pay for its programmatic spending out of its receipts. This is not a normative statement but rather a simple economic fact. The projections in Part III show that under current policies, long-run balance in this sense is not achieved, mostly or entirely because projected spending for Medicare and Medicaid grows faster than the Federal tax base.

The table of assets and liabilities and the long-run budget projections are silent on the questions of whether the

Government is collecting the full amount of taxes owed, whether the public is receiving value for its taxes paid, and whether Federal resources are being used effectively. Information on those points requires performance measures for Government programs supplemented by appropriate information about the condition of the economy and society. This Stewardship chapter complements the detailed exploration of Government performance discussed in Chapter 2 with general measures of economic and social well-being as shown in Table 13–6.

Relationship with FASAB Objectives

The framework presented here meets the stewardship objective for Federal financial reporting recommended by the Federal Accounting Standards Advisory Board (FASAB) and adopted for use by the Federal Government in September 1993.²

Federal financial reporting should assist report users in assessing the impact on the country of the government's operations and investments for the period and how, as a result, the government's and the Nation's financial conditions have changed and may change in the future. Federal financial reporting should provide information that helps the reader to determine:

- 3a. *Whether the government's financial position improved or deteriorated over the period.*
- 3b. *Whether future budgetary resources will likely be sufficient to sustain public services and to meet obligations as they come due.*
- 3c. *Whether government operations have contributed to the nation's current and future well-being.*

The presentation in this chapter shows one way to meet this objective at the Government-wide level. It is intended for economists and others interested in evaluating trends over time. The annual *Financial Report of the United States Government* presents related information from an accounting perspective. The *Financial Report* includes a balance sheet for the Federal Government. The assets and liabilities on that balance sheet are all based on transactions and other events that have already occurred. (For example, the cost of future retiree and health benefits for federal employees is based on employment that has already occurred.) In some cases, the assets and liabilities in the *Financial Report* are evaluated differently than those reported in this chapter. This chapter's estimates rely more on the replacement cost value of assets instead of historical cost. The *Financial Report* also includes a statement of social insurance that reviews information on the condition and sustainability of some of the Government's largest benefit programs. This year, for the second time, the *Financial Report* includes a brief discussion of the long-run budget outlook for the Government as

² Statement of Federal Financial Accounting Concepts, Number 1, Objectives of Federal Financial Reporting, September 2, 1993. Other objectives are budgetary integrity, operating performance, and systems and controls.

a whole, which is similar to the long-run budget projections discussed in this chapter.

Connecting the Dots: The presentation that follows is constructed around a series of tables and charts. The schematic diagram, Chart 13-1, shows how the different pieces fit together. The tables and charts should be viewed as an ensemble, the main elements of which are grouped in two broad categories—assets/resources and liabilities/responsibilities.

- The left-hand side of Chart 13-1 shows the full range of Federal resources, including assets the Government owns, tax receipts it can expect to collect based on current and proposed laws, the tax gap,

and national wealth, including the trained skills of the national work force, that provide the base for Government revenues.

- The right-hand side reveals the full range of Federal obligations and responsibilities, beginning with the Government's acknowledged liabilities arising from past actions, but also including projected budget outlays needed to maintain present policies and trends. This column ends with a set of indicators highlighting areas where Government activity affects society or the economy.

Chart 13-1. The Financial Condition of the Federal Government and the Nation

Assets/Resources		Liabilities/Responsibilities	
Federal Assets Financial Assets Monetary Assets Mortgages and Other Loans Other Financial Assets Less Expected Loan Losses Physical Assets Fixed Reproducible Capital Defense Nondefense Inventories Non-reproducible Capital Land Mineral Rights	Federal Government Assets and Liabilities (Table 13-1)	Federal Liabilities Financial Liabilities Debt Held by the Public Guarantees and Insurance Deposit Insurance Pension Benefit Guarantees Loan Guarantees Other Insurance Federal Retiree Pension and Health Insurance Liabilities Miscellaneous Net Balance	
Resources/Receipts Projected Receipts	Long-Run Federal Budget Projections (Table 13-2)	Responsibilities/Outlays Projected Outlays Surplus/Deficit Actuarial Deficiencies in Social Security and Medicare	Actuarial Deficiencies in Social Security and Medicare (Table 13-3)
The Federal Tax Gap	Sources of the Tax Gap Table 13.4	National Needs/Conditions Indicators of economic, social, educational, and environmental conditions	
National Assets/Resources Federally Owned Physical Assets State & Local Govt. Physical Assets Federal Contribution Privately Owned Physical Assets Education Capital R&D Capital	National Wealth (Table 13-5)		Social Indicators (Table 13-6)

QUESTIONS AND ANSWERS ABOUT THE GOVERNMENT'S STEWARDSHIP

1. According to Table 13-1, the Government's liabilities exceed its assets. No business could operate in such a fashion. Why does the Government not manage its finances more like a business?

The Federal Government has different objectives from a business firm. For the vast bulk of the Federal Government's operations, it would be difficult or impossible to charge prices that would cover expenses. The Government undertakes these activities not to improve its balance sheet, but to benefit the Nation.

For example, the Government invests in education and research, but it earns no direct return from these investments. People are enriched by these investments, but the returns do not show up as an increase in Government assets but rather as an increase in the general state of knowledge and in the capacity of the country's citizens to earn a living and lead a fuller life. Business investment motives are quite different; business invests to earn a profit for itself, not others, and if its investments are successful, their value will be reflected in its balance sheet. Because the Federal Government's objectives are different, its balance sheet behaves differently, and should be interpreted differently.

The test of the Government's solvency is not the bottom line of a table like Table 13-1, but whether it can meet its ongoing responsibilities and deal with future emergencies or other needs that might arise.

2. Table 13–1 seems to imply that the Government is insolvent. Is it?

No. Just as the Federal Government's responsibilities are different from those of private business, so are its resources. Government solvency must be evaluated in different terms.

What Table 13–1 shows is that those Federal obligations that are most comparable to the liabilities of a business corporation exceed the estimated value of the assets actually owned by the Federal Government. The Government, however, has access to other resources through its sovereign powers. These powers, which include taxation, will allow the Government to meet its present obligations and those that are anticipated from future operations even though the Government's current assets are less than its current liabilities.

Private financial markets clearly recognize this reality. Lenders are willing to lend considerable amounts of money to the Government at interest rates substantially below those charged to private borrowers. In effect, government bonds are extremely highly rated; they are often referred to as "risk free." This would not be true if the Government were really insolvent or likely to become so in the future. Where governments totter on the brink of insolvency, lenders are either unwilling to lend them money, or do so only in return for a substantial interest premium.

Market participants seem to expect that the Federal Government will eventually address the long-run fiscal problems addressed in this chapter and preserve its high credit rating.

3. Why are Medicare, Medicaid, and Social Security not shown as Government liabilities in Table 13–1?

Future Medicare, Medicaid, and Social Security benefits may be considered as obligations of the Federal Government, but these benefits are not a liability in a legal or accounting sense. The Government has unilaterally decreased as well as increased these benefits in the past, and future reforms could alter them again. These benefits are reflected in this presentation of the Government's finances in two ways: as part of the overall budget projections in Table 13–2, and, for the two programs with dedicated income streams, in the actuarial estimates in Table 13–3.

The government has many other long-term fiscal responsibilities – for example to continue to spend sufficient resources on national security. Few have suggested counting future defense spending as Federal liabilities; yet there is no logical justification for a different accounting treatment for them. There is no bright line dividing Medicare, Medicaid, and Social Security from other programs that promise benefits to people, and all the Government programs that do so should be accounted for similarly.

Another reason for not counting future Medicare and Social Security benefits as liabilities is that doing so would imply that payroll tax receipts earmarked to finance those benefits ought to be treated as assets. This treatment would be essential to gauge the size of the future claim. Tax receipts, however, are not generally considered to be Government assets, and for good reason: the Government does not own the wealth on which future taxes depend. Including taxes on the balance sheet would be wrong for this reason, but excluding taxes from the balance sheet would overstate the drain on net assets from Medicare and Social Security benefits. Treating taxes for Medicare and Social Security differently from other taxes would be highly questionable.

Finally, under Generally Accepted Accounting Principles (GAAP), Social Security is not considered to be a liability, so not counting it as such in this chapter is consistent with accounting standards.

4. Why doesn't the Federal Government follow normal business practice in its bookkeeping?

The Government is not a business, and accounting standards designed to illuminate how much a business earns and how much equity it has could provide misleading information if applied naively to the Government. The Government does not have a "bottom line" comparable to that of a business corporation, but the Federal Accounting Standards Advisory Board (FASAB) has developed, and the Government has adopted, a conceptual accounting framework that reflects the Government's distinct functions and answers many of the questions for which Government should be accountable. This framework addresses budgetary integrity, operating performance, stewardship, and systems and controls. FASAB has also developed, and the Government has adopted, a full set of accounting standards. Federal agencies now issue audited financial reports that follow these standards, and an audited Government-wide financial report is issued as well. In short, the Federal Government does follow generally accepted accounting principles (GAAP) just as businesses and State and local governments do, although the relevant principles differ depending on the circumstances. This chapter is intended to address the "stewardship objective"—assessing the inter-related condition of the Federal Government and the Nation.

PART II—THE FEDERAL GOVERNMENT’S ASSETS AND LIABILITIES

Table 13-1 provides a retrospective summary of the Government’s assets and liabilities, showing what it owes as a result of past operations and what it owns as of the end of 2008. The table provides perspective by showing those figures for a number of years going back to 1960. To assure comparability across time, the assets and liabilities are measured in terms of constant 2008 dollars and the balance of net liabilities is shown as a percentage of GDP. Government liabilities have exceeded the value of assets over this entire period, but there was a substantial increase in net liabilities in the 1980s and early 1990s as a result of the large budget deficits in those years (see chart 13-2). In the late 1990s, there was a marked decline in the ratio of net liabilities to GDP as the budget temporarily went into surplus and debt held by the public was reduced. Since 2001, the ratio has increased again, and in 2008 it reached a new high surpassing slightly the previous peak level reached in 1993. The ratio will increase further over the next few years because of the deep recession the nation is currently experiencing, the corresponding need to increase aggregate demand through the Recovery Act, and the costs associated with financial stabilization. Partially offsetting the direct costs of the Recovery Act and financial stabilization will be the relative improvement in GDP they help cause.

Currently, the total real value of Federal assets is estimated to be 83 percent greater than it was in 1960. Meanwhile, Federal liabilities have increased by 292 percent in real terms. The decline in the Federal net asset position has been partly due to persistent Federal budget deficits that have boosted debt held by the public in most years since 1960. Other factors have also been important, such as large increases in the cost of health benefits promised for Federal retirees and the sharp rise

in veterans’ disability compensation. The relatively slow growth in most Federal asset values has also reduced the Government’s net asset position.

The net excess of liabilities over assets reached 58.3 percent of GDP last year, an all-time high that reversed a small decline from 2005. The average since 1960 has been 45 percent (see Table 13–1).

Assets

Table 13–1 offers a comprehensive list of the financial and physical resources owned by the Federal Government.

Financial Assets: The Federal Government’s holdings of financial assets as reported in the Federal Reserve’s Flow-of-Funds Accounts amounted to over \$1 trillion at the end of 2008. There was a large jump in Treasury’s operating cash balance last year that added over \$300 billion to this total. The increase was mainly due to the Supplementary Financing Program, which was created to assist the Federal Reserve in its efforts to stabilize financial markets (for more about this program and its effect on Federal finances see Chapter 16, “Federal Borrowing and Debt”). Government holdings of loans and mortgages have been relatively stable (measured in constant dollars) since the mid-1990s following the end of the Savings and Loan crisis. The face value of Government loans overstates their economic worth. OMB estimates that the discounted present value of future losses and interest subsidies on these loans was around \$49 billion as of year-end 2008. These estimated losses are subtracted from the face value of outstanding loans to obtain a better estimate of their economic worth. The net value of loans and monetary assets was \$957 billion.

Chart 13-2. Net Federal Liabilities

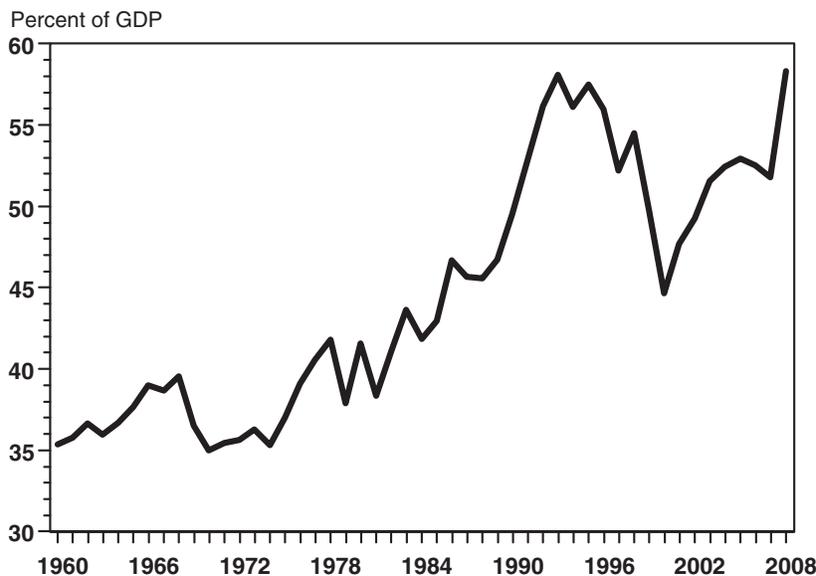


Table 13–1. GOVERNMENT ASSETS AND LIABILITIES*
(As of the end of the fiscal year, in billions of 2008 dollars)

	1960	1965	1970	1975	1980	1985	1990	1995	2000	2005	2006	2007	2008
ASSETS													
Financial Assets:													
Cash and Checking Deposits	51	73	46	37	57	37	50	52	68	38	54	79	372
Other Monetary Assets	2	1	1	2	2	2	2	1	8	2	5	1	3
Mortgages	33	31	47	49	91	93	119	82	94	83	85	85	85
Other Loans	121	166	208	210	270	351	249	201	230	216	211	211	211
less Expected Loan Losses	-1	-3	-5	-11	-21	-20	-23	-29	-45	-44	-49	-45	-49
Other Treasury Financial Assets	73	91	80	72	102	150	239	288	307	327	318	319	336
Subtotal	278	361	377	359	501	612	635	594	662	622	623	651	957
Nonfinancial Assets:													
Fixed Reproducible Capital	1,218	1,208	1,257	1,219	1,069	1,242	1,292	1,350	1,185	1,139	1,156	1,179	1,173
Defense	1,050	986	997	910	768	901	930	958	789	717	729	747	747
Nondefense	168	222	260	309	300	341	362	392	396	422	427	433	426
Inventories	318	276	257	230	284	325	288	222	227	295	296	284	290
Nonreproducible Capital	157	208	248	404	588	686	583	439	736	1,356	1,386	1,382	1,188
Land	112	155	195	309	395	410	422	315	518	998	1,025	1,025	767
Mineral Rights	45	53	53	95	193	275	160	124	219	358	361	357	421
Subtotal	1,693	1,692	1,762	1,853	1,941	2,253	2,162	2,011	2,148	2,790	2,838	2,846	2,650
Total Assets	1,971	2,052	2,138	2,212	2,442	2,865	2,798	2,604	2,810	3,412	3,461	3,497	3,607
LIABILITIES													
Debt held by the Public	1,389	1,428	1,271	1,292	1,606	2,656	3,619	4,809	4,189	4,983	5,077	5,167	5,803
Insurance and Guarantee Liabilities:													
Deposit Insurance	0	0	0	0	2	11	87	24	1	1	1	2	34
Pension Benefit Guarantee	0	0	0	52	38	53	53	25	50	89	78	85	74
Loan Guarantees	0	1	3	8	15	13	19	36	45	52	50	71	74
Other Insurance	38	34	27	24	33	20	24	21	20	44	21	17	25
Subtotal	38	35	29	84	88	97	183	106	116	186	150	175	207
Pension and Post-Employment Health Liabilities:													
Civilian and Military Pensions	1,049	1,319	1,577	1,787	2,197	2,179	2,130	2,066	2,165	2,354	2,435	2,479	2,609
Retiree Health Insurance Benefits	215	270	323	366	450	446	436	432	480	1,220	1,191	1,178	1,162
Veterans Disability Compensation	231	290	347	384	394	325	293	356	679	1,218	1,213	1,157	1,467
Subtotal	1,494	1,879	2,246	2,536	3,041	2,951	2,860	2,853	3,323	4,792	4,839	4,813	5,238
Environmental and Disposal Liabilities	82	101	122	138	166	197	232	303	370	282	321	351	343
Other Liabilities:													
Trade Payables and Miscellaneous	33	41	52	64	99	131	179	148	128	245	253	267	277
Benefits Due and Payable	25	30	40	42	54	60	72	83	96	127	136	137	144
Subtotal	58	70	92	106	153	190	251	232	224	372	389	405	421
Total Liabilities	3,062	3,514	3,760	4,156	5,055	6,091	7,144	8,304	8,222	10,614	10,776	10,911	12,012
Net Liabilities (Liabilities Minus Assets)	1,091	1,461	1,622	1,944	2,613	3,226	4,347	5,700	5,412	7,202	7,315	7,414	8,404
Addenda:													
Net Liabilities Per Capita (in 2008 dollars)	6,048	7,533	7,922	9,016	11,455	13,508	17,346	21,347	19,137	24,302	24,452	24,543	27,567
Ratio to GDP (in percent)	35.3	37.7	35.0	37.0	41.6	43.0	49.5	57.5	44.7	52.9	52.5	51.8	58.3

Reproducible Capital: The Federal Government is a major investor in physical capital and computer software. Government-owned stocks of such capital have remained fairly stable measured in constant (year 2008) dollars for most of the last 45 years (OMB estimate) at around \$1.2 trillion. This capital consists of defense equipment and structures, including weapons systems, as well as nonde-

fense capital goods. Currently, 64 percent of the capital is defense equipment or structures. In 1960, defense capital was 86 percent of the total. In the 1970s, there was a substantial decline in the real value of U.S. defense capital and there was another large decline in the 1990s after the end of the Cold War. Meanwhile, nondefense Federal capital has increased at an average annual rate of around

2.0 percent. The Government also holds inventories of defense goods and other items that in 2008 amounted to about 25 percent of the value of its fixed reproducible capital.

Nonreproducible Capital: The Government owns significant amounts of land and mineral deposits. There are no official estimates of the market value of these holdings (and of course, in a realistic sense, many of these resources would never be sold). After rising rapidly for several years, private land values fell 23 percent in 2008. It is assumed here that Federal land shared in the previous increase and the recent decline. Oil prices have been on a roller coaster since the mid-1990s. They declined sharply in 1997–1998, rebounded in 1999–2000, fell again in 2001, rose substantially from 2002 through mid-year 2008, and then they tumbled. These fluctuations have caused the estimated market value of Federally owned proved reserves of oil and natural gas to fluctuate as well. In 2009, as estimated here, the combined real value of Federal land and mineral rights was \$1.2 trillion compared with \$1.5 trillion in Federal fixed capital and inventories.

These estimates omit some valuable assets owned by the Federal Government—such as works of art and historical artifacts—partly because there is no comprehensive inventory or realistic basis for valuing them.

Total Assets: The total value of Government assets measured in constant dollars has risen substantially in the past ten years, and reached an all-time high in 2008. The Government's asset holdings are vast. As of the end of 2008, Government assets were estimated to be worth about \$3.6 trillion or 25 percent of GDP.

Liabilities

Table 13–1 includes all Federal liabilities that would normally be listed on a balance sheet. All the various forms of publicly held Federal debt are counted. So are Federal pension and health insurance obligations to civilian and military retirees including the disability compensation that is owed the Nation's veterans, although these are not strictly binding in a contractual sense. These pension and health insurance liabilities can be thought of as a form of deferred compensation. The estimated liabilities stemming from Federal insurance programs and loan guarantees are shown. The benefits that are due and payable under various Federal programs are also included, but these liabilities reflect only binding short-term obligations, not the Government's full commitment under these programs. The Government also has a responsibility to repair environmental damage that resulted primarily from nuclear weapons production, and that cost has been included in the Table as well.

Future benefit payments that are promised through Social Security and other Federal income transfer programs are not Federal liabilities in a legal or accounting sense. They are Federal responsibilities, and it is important to gauge their size, but they are not binding in the same way as a legally enforceable claim would be. The budget projections and other data in Part III are designed

to provide a sense of these broader responsibilities and their claim on future budgets.

Debt Held by the Public: The Federal Government's largest single financial liability is the debt owed to the public. It amounted to about \$5.8 trillion at the end of 2008. Publicly held debt declined for several years in the late 1990s to a recent low of \$3.3 trillion because of the unified budget surpluses at that time, but as deficits returned, publicly held debt began to increase again, and it increased very substantially in 2008 as Government borrowed to obtain the financial resources needed to address the worldwide financial crisis.

Insurance and Guarantee Liabilities: The Federal Government has contingent liabilities arising from the loan guarantees it has made and from its insurance programs. When the Government guarantees a loan or offers insurance, cash disbursements are often small initially, and if a fee is charged the Government may even collect money; but the risk of future cash payments associated with such commitments can be large. The figures reported in Table 13–1 are estimates of the current discounted value of prospective future losses on outstanding guarantees and insurance contracts. The single largest insurance obligation is for veterans' life insurance. Flood and crop insurance are also included as is Federal terrorism insurance. The present value of all such insurance liabilities taken together is about \$200 billion. As is true elsewhere in this chapter, this estimate does not incorporate the market value of the risk associated with these contingent liabilities; it merely reflects the present value of expected losses. Although individually many of these programs are large and potential losses are a serious concern, these insurance and guarantee liabilities are fairly small relative to total Federal liabilities or even the total debt held by the public. They were less than 2 percent of total liabilities in 2008.

Pension and Post-Employment Health Liabilities: The Federal Government owes pension benefits as a form of deferred compensation to retired workers and to current employees who will eventually retire. It also provides civilian retirees with subsidized health insurance through the Federal Employees Health Benefits program and military retirees receive similar benefits. Veterans are owed compensation for their service-related disabilities. While the Government's employee pension obligations have risen slowly, there has been a sharp increase in the liability for future health benefits and veterans compensation. The discounted present value of all these benefits was estimated to be around \$5.2 trillion at the end of 2008, up from \$3.3 trillion in 2000 (a large expansion in Federal military retiree health benefits was legislated in 2001).

Environmental and Disposal Liabilities: During World War II and the Cold War, the Federal Government constructed a vast industrial complex to study, produce, and test nuclear weapons. Environmental contamination occurred at these sites. The estimated liability shown here is based on the cleanup costs required by Federal, State, and local laws and regulations reported in the 2008 *Financial Report of the United States Government*. The Department of Energy is responsible for managing this

cleanup. The Department of Defense is also charged with cleaning up contamination from its waste disposal practices, leaks, spills, and other risky activities. Together the cleanup costs are estimated to amount to around \$340 billion in present value.

The Balance of Net Liabilities

The Government need not maintain a positive balance of net assets to assure its fiscal solvency, and the buildup in net liabilities since 1960 has not significantly affected Federal creditworthiness. Long-term Government interest rates in late 2008 reached their lowest levels in 50

years. Despite historically low interest rates, there are limits to how much debt the Government can assume without putting its finances in jeopardy. Over an extended time horizon, the Federal Government must take in enough revenue to cover all of its noninterest spending and also cover enough of its interest expenses to keep the deficit and debt from growing faster than the economy. The Government's ability to service its debt in the long run cannot be gauged from a balance sheet alone. It is necessary to project the budget and the size of the economy into the future to judge the prospects for long-run solvency. That is the subject of the next section.

PART III—THE LONG-RUN BUDGET OUTLOOK

A balance sheet, with its focus on obligations arising from past transactions, can show only so much information. For the Government, it is also important to anticipate what future budgetary requirements might flow from current laws and policies. Despite the uncertainty surrounding the assumptions needed for such estimates, very long-run budget projections can be useful in drawing attention to potential problems. Federal responsibilities extend well beyond the next five or ten years, and problems that may be small in that time frame can become much larger if allowed to grow. To assess the overall financial condition of the Government, it is necessary to examine the future prospects for all Government programs and for the revenue sources that support Government spending.

The long-run budget projections in this section extend the particular policies proposed in the 2010 Budget, but do not reflect the long-term impacts from slowing health care cost growth. Although the Budget offers major initiatives in many areas that are needed to put the economy on a sounder long-run footing, the Administration recognizes that not all of the needed policy initiatives have been formulated. In particular, the Administration's plans for health reform are still under development in consultation with Congress. The budget projections in this chapter reflect the fact that simply extending current laws and policies would leave the budget in an unsustainable position. Reforms are also needed to make sure that programs like Social Security, which are expected to be financed from dedicated revenue sources, remain self-sustaining. The Administration intends to work with Congress to develop policies that will prevent the outcomes shown in many of the charts below.

The key drivers of the long-range deficit are the Government's major health and retirement programs: Medicare, Medicaid, and Social Security.

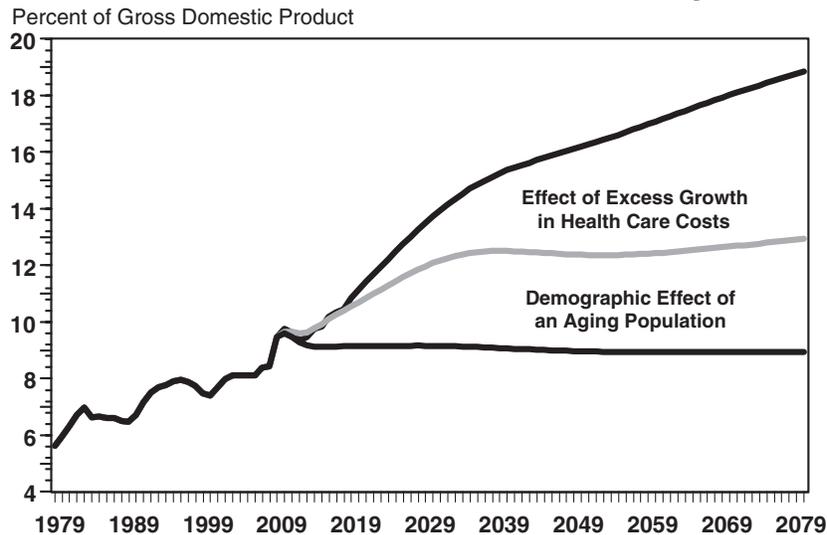
- Medicare finances health insurance for most of the Nation's seniors and many individuals with disabilities. Medicare's growth has exceeded that of other Federal spending for decades, tracking the rapid growth in overall health care costs. If anything like this growth trend were to continue for several more decades, the budgetary strain would be insupportable.

- Medicaid provides medical assistance, including acute and long-term care to low-income persons including families with dependent children, as well as the aged, the blind, and persons with disabilities. It has grown more rapidly than the economy for several decades, and if that growth were to continue indefinitely it would put unsustainable pressure on future budget deficits for State Governments as well as the Federal Government.
- Social Security provides retirement benefits, disability benefits, and survivors' insurance for the Nation's workers. Social Security benefits will outpace the growth of its dedicated revenue stream over the next quarter century, putting some pressure on the budget.

Each of these programs is expected to continue indefinitely. Long-range projections for Medicare and Social Security have been prepared for decades, and Medicaid is planning to produce such projections in the near future. Budget projections for individual programs, however, even important ones such as Medicare and Social Security, cannot reveal the Government's overall budgetary position, which is why the projections in this chapter are a useful complement to the long-run projections of the individual programs.

Future budget outcomes depend on a host of unknowns—changing economic conditions, unforeseen international developments, unexpected demographic shifts, the unpredictable forces of technological advance, and evolving political preferences to name a few. These uncertainties make even short-run budget forecasting quite difficult, and the uncertainties increase the further into the future projections are extended. While uncertainty makes forecast accuracy difficult to achieve, it does not detract from the importance of long-run budget projections, because future problems are often best addressed in the present. A full treatment of all the relevant risks is beyond the scope of this chapter, but the chapter does show how long-run budget projections respond to changes in some of key economic and demographic assumptions.

Chart 13-3. Sources of Projected Growth in Medicare, Medicaid, and Social Security



An Unsustainable Path

Increasing health costs and the aging of the population will place the budget on an unsustainable course without changes in policy to address these challenges. Medicare and Medicaid have grown faster than the economy for decades, and if they continue to do so will exert tremendous pressures on the budget. Additionally, the first members of the huge generation born after World War II, the so-called baby boomers, reached age 62 in 2008 and became eligible for early retirement under Social Security. In 2011, they turn 65 and become eligible for Medicare. In the years that follow, the elderly population will steadily increase, putting serious strains on the budget.

Sources of Increased Spending for Medicare, Medicaid, and Social Security: The most important factor driving the long-run budget outlook is the excess growth of health care costs. Health care spending in the United States has been outpacing the growth in total output since the 1950s (detailed national health expenditure data extend back to 1960). In the long-run projections in this chapter, the growth rate of health care costs slows, but it still exceeds the rate of growth in GDP, so that spending on the Federal health programs continues to rise as a share of GDP. These projections follow the Medicare trustees' projections for future obligations under the Medicare program, adjusted for the Administration's different projected path for general price inflation and GDP.

Population aging also poses a long-run budgetary challenge. The Social Security actuaries project that the ratio of workers to Social Security beneficiaries will fall from around 3.3 currently to a little over 2 by the time most of the baby boomers have retired. From that point forward, because of lower fertility and improved longevity, the ratio is expected to continue to decline slowly. With fewer workers to pay the taxes needed to support the retired

population, budgetary pressures will continue to grow without reforms to the programs

The chart above shows how these assumptions affect the growth of the three major entitlement programs: Medicare, Medicaid, and Social Security. Over the next two decades both increasing numbers of beneficiaries and rapid health cost growth contribute to the increase in the share of GDP devoted to these programs.³ In the very long run, without successful health care cost reform, the continued rise in health care costs would be the main contributor to the continued rise in the share of GDP devoted to these programs.

Long-Run Budget Projections: In 2008, the three major entitlement programs—Social Security, Medicare, and Medicaid—accounted for 44 percent of non-interest Federal spending, up from 30 percent in 1980. By 2030, when the surviving baby boomers will all be 65 or older, these three programs could account for more than 60 percent of non-interest Federal spending unless there is a break in the trend of health care costs or other major changes to the programs. At the end of the projection period, in 2080, the figure could rise to 70 percent of non-interest spending, again assuming current trends were to continue. In other words, without reforms, most of the budget, aside from interest, would go to these three programs alone. That would severely reduce the flexibility of the budget and the Government's ability to respond to new challenges.

The overall budget cannot sustain the projected increase in these major programs without policy changes. The budget projections shown in Table 13–2 illustrate that point. The budget deficit is expected to stabilize at around 3 percent of GDP in 2013 and to remain close to that ratio through 2019, but without changes in the health programs and Social Security, the deficit is pro-

³ In this chart, the interactive effect of higher health care costs on an increased population is shown as a health care effect.

Table 13–2. LONG-RUN BUDGET PROJECTIONS
(Receipts, Outlays, Surplus or Deficit, and Debt as a Percent of GDP)

	1980	1990	2000	2010	2020	2030	2040	2060	2080
Receipts	19.0	18.0	20.9	15.8	19.4	19.9	20.3	21.5	22.6
Outlays:									
Discretionary	10.1	8.7	6.3	9.6	6.2	6.2	6.2	6.2	6.2
Mandatory:									
Social Security	4.3	4.3	4.2	4.7	5.1	5.8	5.8	5.7	6.0
Medicare	1.1	1.7	2.0	3.1	4.0	5.6	6.8	8.3	9.6
Medicaid	0.5	0.7	1.2	2.0	2.1	2.4	2.8	3.1	3.3
Other	3.7	3.2	2.4	4.1	2.7	2.4	2.2	2.0	2.0
Subtotal, mandatory	9.6	9.9	9.8	13.9	13.8	16.2	17.6	19.1	20.8
Net Interest	1.9	3.2	2.3	0.9	2.9	3.5	4.8	7.7	11.2
Total outlays	21.7	21.8	18.4	24.4	22.9	25.9	28.5	33.0	38.2
Surplus or Deficit (+)	2.7	3.9	-2.4	8.5	3.5	6.0	8.2	11.5	15.5
Primary Surplus or Deficit (+)	0.8	0.6	-4.7	7.6	0.6	2.5	3.5	3.8	4.4
Federal Debt Held by the Public	26.1	42.0	35.1	67.1	70.7	87.5	118.7	191.0	275.0

Note: The figures shown in this table for 2020 and beyond are the product of a long-range forecasting model maintained by the Office of Management and Budget. The model extends the Budget policy beyond the normal 10-year budget horizon. This model is separate from models and capabilities used to produce detailed programmatic estimates in the Budget. The model is based on additional assumptions regarding growth of the population and economy, the long-range evolution of specific programs and the demographic and economic forces affecting those programs. The model, its assumptions, and sensitivity testing of those assumptions are presented in this chapter. The projections in this table do not reflect the likely effects of health reform on future program costs for Medicare, Medicaid and other programs. The health assumptions are derived from the 2008 Medicare trustees' report assumptions.

jected to resume a steady increase. These rising deficits would drive publicly held Federal debt as a ratio to GDP to levels well above the previous peak level reached at the end of World War II and beyond. Before the debt reaches the levels shown in the table, there would likely be a financial crisis that would force budgetary changes, although the timing of such a crisis and its resolution are impossible to predict. Timely reforms, especially those that lowered the trend of health care costs, could go far to avoid such a crisis.

Projected revenues in these long-run budget projections start with the estimated receipts under the Administration's proposals in the 2010 Budget. In the absence of further policy changes, the ratio of taxes to GDP is assumed to increase somewhat over time. There is a tendency for individual income taxes to rise because the assumed rate of real income growth implies some "real bracket creep." The tax code is indexed for inflation, but not for increases in real income. Eventually, a larger percentage of taxpayers will be in higher tax brackets and this will raise the ratio of taxes to income. The projections assume that the Alternative Minimum Tax (AMT) is indexed, so the AMT is not a reason for the rise in the ratio of receipts to GDP. Some Federal taxes tend to decline in real terms in the absence of policy changes. Many excise taxes are set in nominal terms, so collections decline as a share of GDP when there is inflation. Overall, Federal receipts are projected to rise by about 3 percentage point of GDP in the very long run.

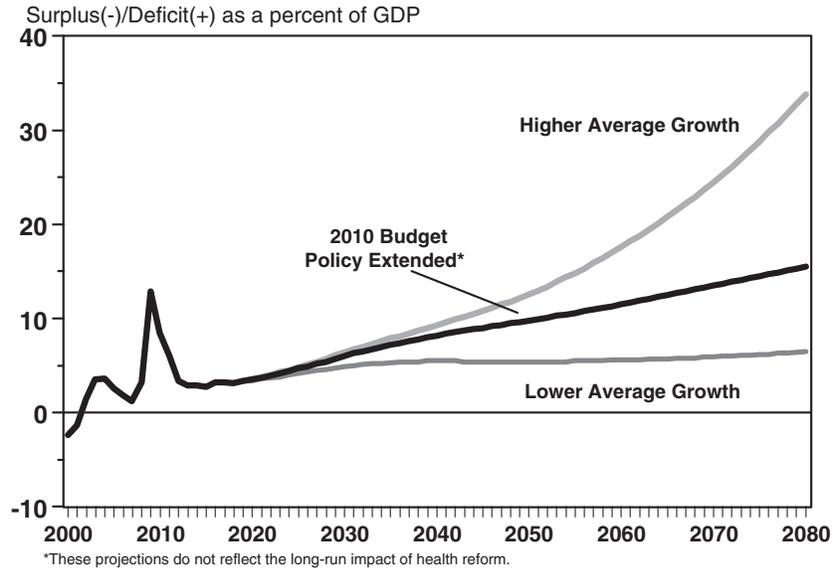
There is no simple natural assumption for projecting discretionary spending, because discretionary spending is determined annually through the legislative process, and no simple formula can anticipate the direction of future legislation. Different assumptions have been used in past budgets. Holding discretion-

ary spending unchanged in real terms is the "current services" assumption used for baseline budget projections when there is no legislative guidance on future spending levels. Extending this assumption over many decades, however, is not realistic. When the population and economy grow, as assumed in these projections, the demand for public services is very likely to expand as well. The current base projection assumes that discretionary spending keeps pace with the growth in GDP in the long run, so that spending increases in inflation-adjusted terms whenever there is real economic growth. Under this assumption, discretionary spending grows faster than if it only kept pace with inflation and a growing population.

The long-run budget outlook is highly uncertain. With pessimistic assumptions, the fiscal picture deteriorates even sooner than in the base projection. More optimistic assumptions imply a longer period before the pressures of rising health care spending overwhelm the budget. But despite the uncertainty, these projections show that under a wide range of forecasting assumptions, overall budgetary resources will not be sufficient to support all future projected needs. These projections highlight the need for future policy action to address the main drivers of future budgetary costs, especially health reform. (For a further discussion of the forecasting assumptions used to make these budget projections, see the technical note at the end of this chapter.)

Alternative Policy, Economic, and Technical Assumptions

The quantitative results discussed above are sensitive to changes in underlying policy, economic, and technical assumptions. Some of the most important of these assumptions and their effects on the budget outlook are dis-

Chart 13-4. Health Care Cost Alternatives

cussed below. Mounting deficits result for most plausible projections of the budget.

1. Health Spending: The projections for Medicare over the next 75 years are based on an extension of the Budget's estimates for Medicare and Medicaid. For Medicare, the extension relies on the actuarial projections in the 2008 Medicare trustees' report. After a transition period, the Medicare trustees assume that growth in spending per beneficiary begins to slow in the early 2030s, but that it will continue to grow faster than GDP per capita. The year-by-year growth assumptions are determined such that the 75-year actuarial balance for the HI trust fund is consistent with that generated by a "GDP plus 1 percent" assumption. Medicaid growth also holds to the GDP plus 1 percent assumption. Although rising faster than GDP, under these assumptions, Medicare and Medicaid grow less rapidly than they have historically, so that even without explicit reforms the programs' growth is assumed to be reduced. An alternative approach would be to assume that these programs grow at a rate more similar to their historic growth rates.

Eventually, the rising trend in health care costs will have to end, but it is hard to know when and how that will happen. Improved health and increased longevity are highly valued, and society has shown that as its income rises, it is willing to spend a larger share of income on them than it did in the past. The alternatives highlight the effect of raising or lowering the projected growth rate in per capita health care costs. The higher alternative would show excess cost growth of 2 percent per year in the outyears, which is closer to the historical average of 2.4 percent for Medicare. The low alternative shows the effects of even more effective cost control than assumed in the base projections, holding the excess cost growth to 0.5 percent per year on average. The low alternative would still allow for some increase in health costs relative to

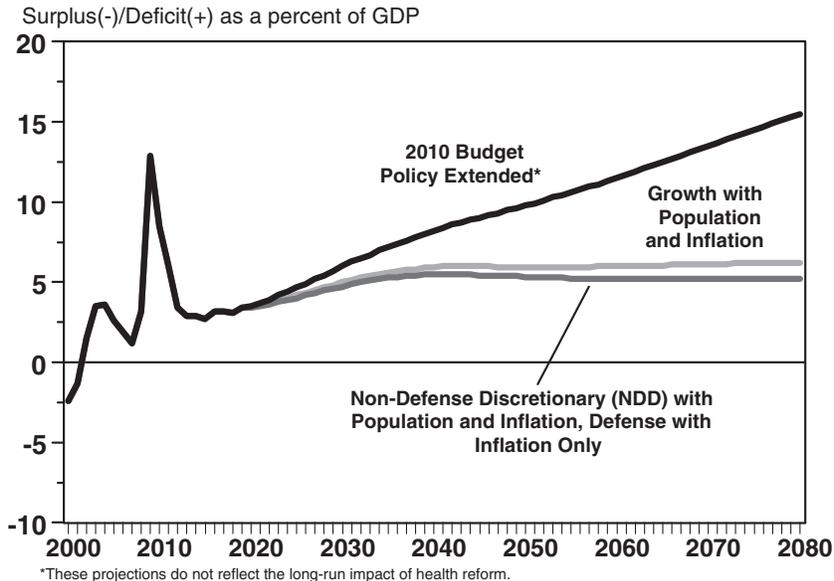
other goods, reflecting the strong demand for health improvements.

2. Discretionary Spending: Discretionary spending is determined annually through the legislative process, and no formula can dictate future spending in the absence of legislation. While discretionary spending is sure to continue, its magnitude is free to vary. Alternative assumptions have been made for discretionary spending in past budgets. Holding discretionary spending unchanged in real terms is the "current services" assumption used for baseline budget projections when there is no legislative guidance on future spending levels. Extending this assumption over many decades is not realistic. When the population and economy are expected to grow, as assumed in these projections, the demand for public services will expand. The current base projection assumes that after 2019, discretionary spending keeps pace with the growth in GDP. An alternative assumption would be to allow discretionary spending to increase only for inflation and population growth. In this case, discretionary spending would remain constant in inflation adjusted per capita terms. Yet another possible assumption is to allow non-defense discretionary spending to grow with population and inflation, but to increase defense spending only for inflation. Defense needs are not necessarily proportional to population in the same way that many other public services are.

3. Alternative Revenue Shares: In the base projection, tax receipts rise relative to GDP, reflecting "real bracket creep." The chart below shows alternative receipts assumptions. Allowing receipts to rise over time by 1 percentage point of GDP more than in the base case would lower the long-run budget deficit, while reducing taxes by 1 percentage point of GDP would have the opposite effect.

4. Productivity: The rate of future productivity growth has a major effect on the long-run budget outlook. It is also highly uncertain. Over the next few decades, an

Chart 13-5. Alternative Discretionary Projections



increase in productivity growth would reduce projected budget deficits appreciably. Higher productivity growth adds directly to the growth of the major tax bases, while it has a smaller immediate effect on outlay growth even assuming that discretionary spending rises with GDP. In the latter half of the 1990s, after two decades of much slower growth, the rate of productivity growth increased markedly. How permanent that increase in productivity growth will be remains uncertain, but these projections assume that real GDP per hour worked grows at an aver-

age annual rate of 2.0 percent per year. This is higher than in the 1970s and 1980s, but not as high as in the 1950s and 1960s. The alternatives highlight the effect of raising and lowering the projected productivity growth rate by 1/2 percentage point.

5. *Population:* The key assumptions for projecting long-run demographic developments are fertility, immigration, and mortality.

- The demographic projections assume that fertility will average about 2.0 total lifetime births per wom-

Chart 13-6. Alternative Revenue Projections

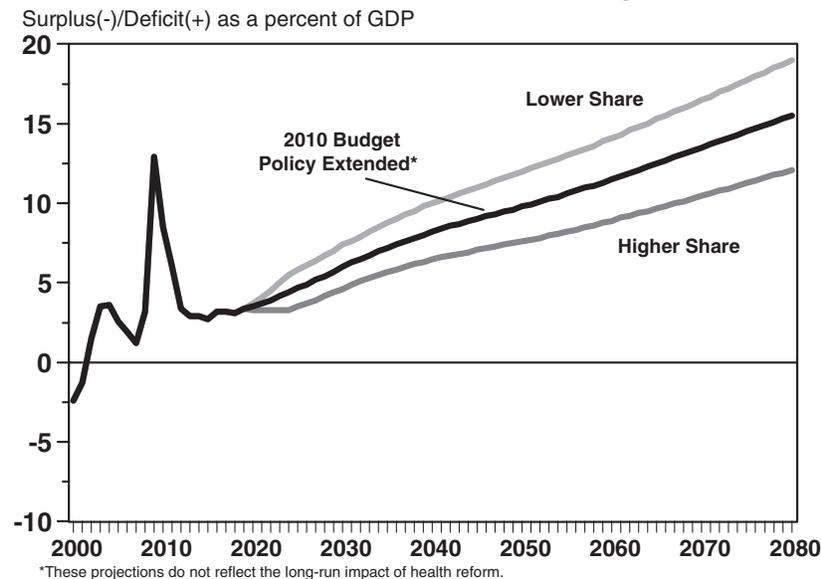
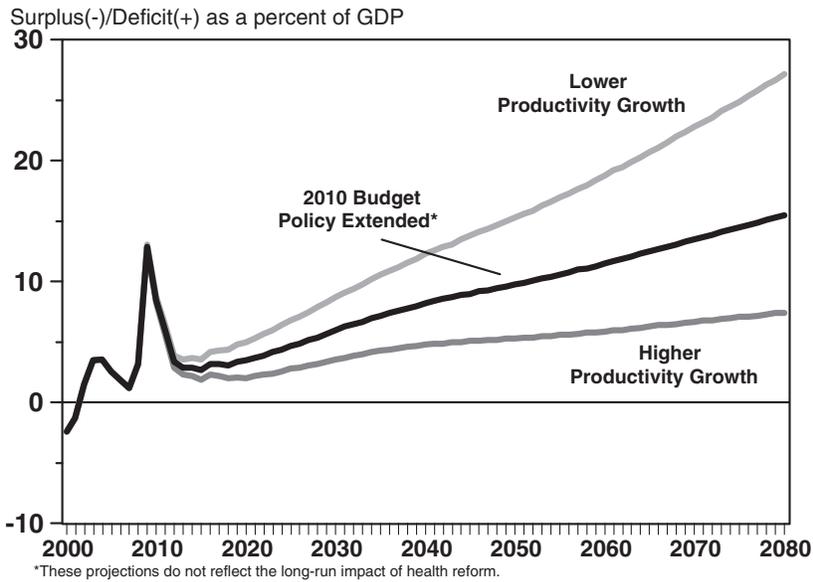


Chart 13-7. Alternative Productivity Assumptions



an in the future, just slightly below the replacement rate needed to maintain a constant population in the absence of immigration—2.1 births per woman. The alternatives are those in the latest Social Security trustees’ report (1.7 and 2.3 births per woman).

- The rate of immigration is assumed to average around 1 million immigrants per year in these projections. Higher immigration relieves some of the downward pressure on population growth from low fertility and allows total population to expand

throughout the projection period, although at a much slower rate than has prevailed historically. The alternatives are taken from the Social Security trustees’ Report (0.8 million and 1.375 million immigrants per year).

- Mortality is projected to decline as people live longer in the future. The average female lifespan is projected to rise from 79.9 years in 2007 to 85.6 years in 2080, and the average male lifespan is expected to increase from 75.2 years in 2007 to 82.4 years in 2080. A tech-

Chart 13-8. Alternative Fertility Assumptions

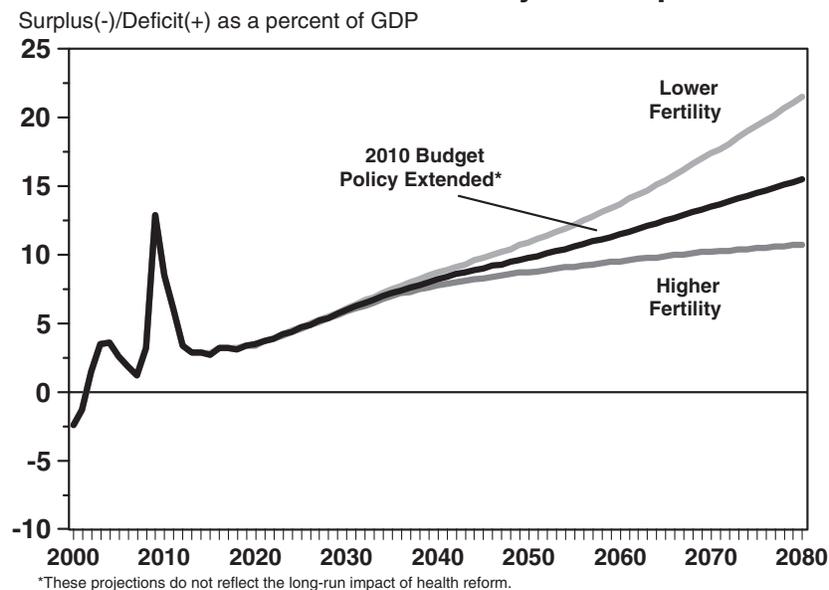
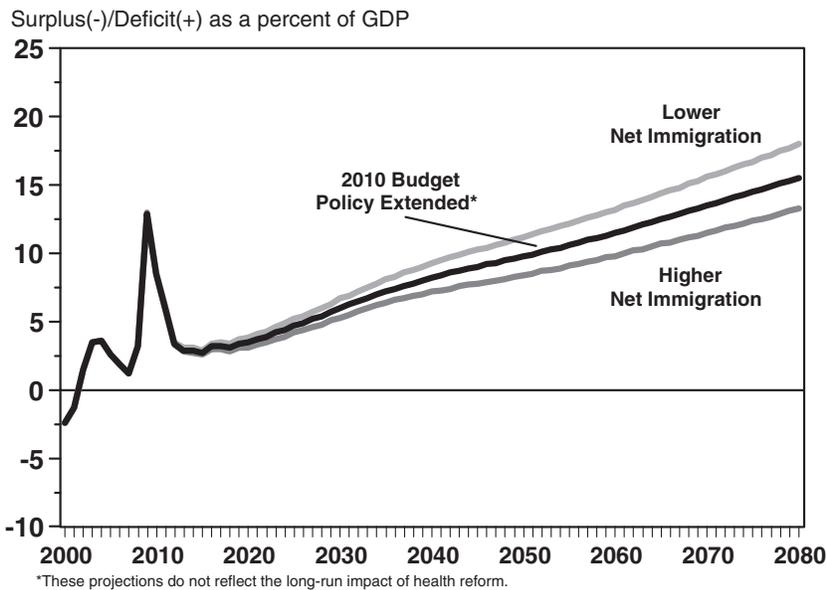


Chart 13-9. Alternative Immigration Assumptions

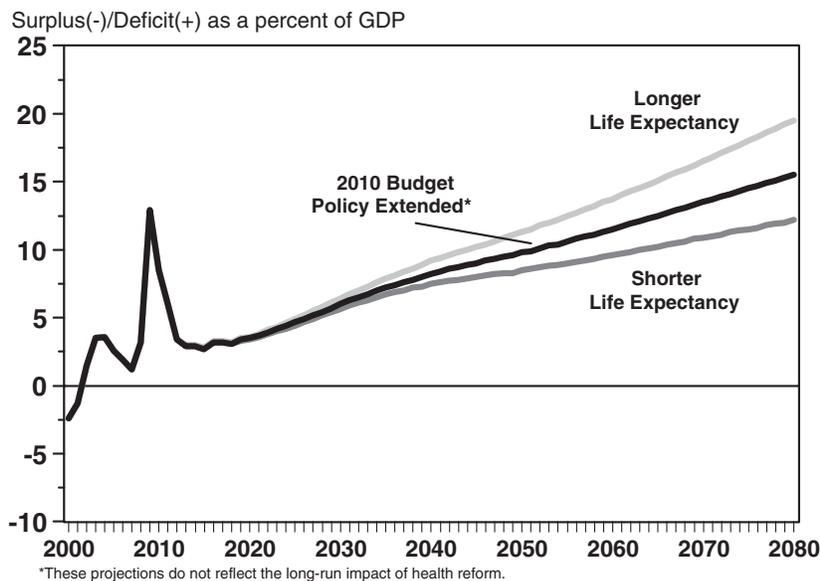


nical panel advising the Social Security trustees has reported that the improvement in longevity might even be greater than assumed here. The variations show the high and low alternatives from the latest trustees' report (average female and male life expectancy reaching 82.3 and 78.7 in the low cost alternative and 89.0 and 86.3 in the high cost alternative).

Actuarial Projections for Medicare and Social Security

The Trustees for the Hospital Insurance and Social Security trust funds issue annual reports that include projections of income and outgo for these funds over a 75-year period. These projections are based on different

Chart 13-10. Alternative Mortality Assumptions



methods and assumptions than the long-run budget projections presented above. Even with these differences, the message is similar: the retirement of the baby-boom generation coupled with expected high rates of growth in per capita health care costs will exhaust the trust funds unless further remedial action is taken.

The trustees' reports feature the actuarial balance of the trust funds as a summary measure of their financial status. For each trust fund, the balance is calculated as the change in receipts or program benefits (expressed as a percentage of taxable payroll) that would be needed to preserve a small positive balance in the trust fund at the end of a specified time period. The estimates cover periods ranging in length from 10 to 75 years. It is important to interpret these actuarial estimates carefully. They show what it would take to achieve a positive trust fund balance at the end of a specified period of time, but not necessarily what it would take to maintain a positive balance indefinitely. To maintain a positive balance forever requires a larger adjustment than is needed to maintain a positive balance over 75 years or any shorter interval when the annual balance in the program is negative at the end of the time period, as it is expected to be for Medicare and Social Security without future programmatic reforms.

Table 13-3 shows the projected income rate, cost rate, and annual balance for the Medicare and OASDI Trust Funds at selected dates under the Trustees' intermediate assumptions. Costs as a percentage of Medicare covered payroll are projected to rise from 3.3 percent today to 5.8 percent of projected payroll in 2030 and 11.6 percent of payroll in 2085. Income rises only slightly, from 3.1 percent of payroll today to 3.4 percent of payroll in 2080. Thus the annual balance moves from a small 0.2 percent of payroll deficit today to 2.5 percent in 2030 and 8.2 percent in 2085. On a 75-year basis, the HI actuarial deficit is 3.5 percent of payroll, more than twice that of Social Security.

Social Security is currently running a surplus, with income exceeding costs. Over time, as the ratio of workers to retirees falls, costs are projected to rise from 11.4

percent of Social Security covered payroll today to 14.1 percent of payroll in 2020, 16.5 percent of payroll in 2050, and 17.6 percent of payroll in 2085. Revenues are projected to rise only slightly, from 12.8 percent of payroll today to 13.3 percent in 2085. Thus the annual balance is projected to switch from surplus to deficit in 2017, with the deficit rising to 1.1 percent of payroll in 2020, 3.2 percent of payroll in 2040, and 4.3 percent of payroll in 2085. On a 75-year basis, the actuarial deficit is projected to be 1.7 percent of payroll.

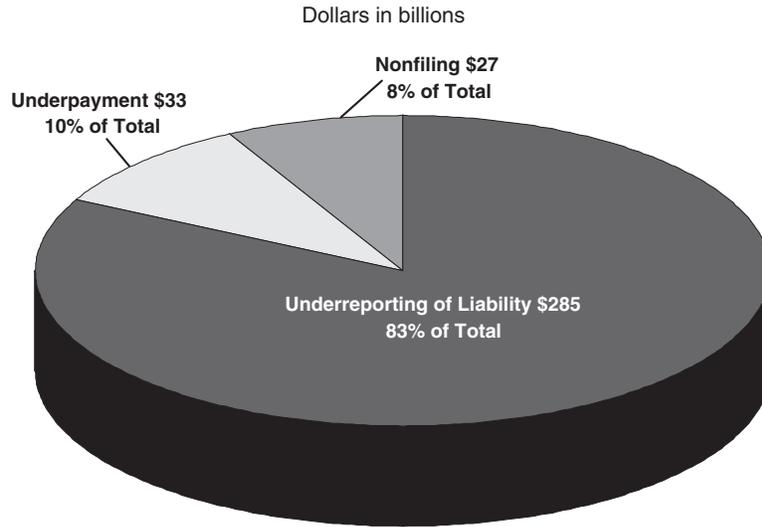
Medicare Funding Warning: Under the Medicare Modernization Act (MMA) of 2003, the Medicare Trustees must issue a "warning" when, in two consecutive Trustees reports, they project that the share of Medicare funded by general revenues will exceed 45 percent in the current year or any of the subsequent six years. General revenue funding is defined as total Medicare outlays minus Medicare payroll taxes, taxes on Social Security benefits, beneficiary premiums, and state transfers under the prescription drug program. In 2008, the Trustees projected that the general revenue share of Medicare funding will exceed 45 percent in 2014 and issued a funding warning.

When a warning is issued, the MMA requires that the President submit legislation, within 15 days of submitting the Budget, which will reduce general revenue funding to 45 percent of overall Medicare outlays or lower in the immediate seven-fiscal-year window. In accordance with the Recommendations Clause of the Constitution, the President considers this requirement to be advisory and not binding. Nevertheless, the President has put forth Budget proposals that would save Medicare \$92.3 billion over five years and \$287.5 billion over ten years. They would also save about \$49.9 billion in 2014 and bring the share of Medicare funded by general revenues below 45 percent. These savings would be set aside in a reserve fund that will finance fundamental health care reform; the proposals would also encourage high-quality and efficient care and reduce excessive payments in Medicare.

Table 13-3. INTERMEDIATE ACTUARIAL PROJECTIONS FOR HI AND OASDI

	2010	2020	2030	2050	2085
	Percent of Payroll				
Medicare Hospital Insurance (HI):					
Income Rate	3.1	3.3	3.3	3.3	3.4
Cost Rate	3.3	4.2	5.8	8.4	11.6
Annual Balance	-0.2	-1.0	-2.5	-5.0	-8.2
Projection Interval:			25 years	50 years	75 years
Actuarial Balance			-1.2	-2.5	-3.5
	Percent of Payroll				
Old Age Survivors and Disability Insurance (OASDI):					
Income Rate	12.8	13.0	13.2	13.2	13.3
Cost Rate	11.4	14.1	16.4	16.5	17.6
Annual Balance	1.5	-1.1	-3.2	-3.3	-4.3
Projection Interval:			25 years	50 years	75 years
Actuarial Balance			0.4	-1.1	-1.7

Chart 13-11. Sources of the Gross Tax Gap



The President believes that enactment of these submitted measures would address the warning conditions.

There are a number of limitations to the measure of Medicare’s budgetary effects stipulated under the MMA. First, the Medicare funding warning uses a metric for Medicare that misleadingly frames the program’s problems in terms of the share of Medicare funded by par-

ticular funding sources. A more significant measure than the share of funding sources would be the overall financial burden of the program on the U.S. economy. Likewise, more meaningful metrics may be the number of workers for each Medicare beneficiary or Medicare spending as a percentage of GDP, as used in this chapter.

PART IV—TAX COMPLIANCE, NATIONAL WEALTH, AND SOCIAL INDICATORS

To obtain a full picture of the Government’s financial condition, it is necessary to examine a broad range of additional information beyond the narrow list of Government-owned assets and liabilities. It is even necessary to consider more information than is contained in the long-term projections of the budget. This final section presents a sample of such additional information. It is intended to provide insight into the full range of resources the Government can draw upon to meet its long-term obligations and also to indicate in a summary way what the

Nation obtains in exchange for the resources it provides the Government.

The first piece of additional information is analysis of compliance with the nation’s tax laws, the so-called “tax gap.” The Government does not collect in a timely manner all of the taxes it is legally owed, as explained in detail below (along with some proposals to narrow the gap). That discussion is followed by an investigation of national wealth and the contributions the Federal Government has made to the wealth of private persons and other lev-

Table 13-4. SOURCES OF THE TAX GAP FROM INCOME UNDERREPORTING

	Contribution to the Tax Gap in billions of dollars	Percent Share of the Overall Tax Gap
Business income underreported by individuals	148	43
Non-business income underreporting and improper deductions and credits.	88	26
Corporate income underreporting.	30	9
Other underreporting.	19	6
Total underreporting	285	83

els of government. The final section discusses a range of economic and social indicators.

Improving Tax Fairness and Federal Finances through Better Tax Compliance

The Internal Revenue Service (IRS) collects over 95 percent of total Federal receipts, including \$2.5 trillion in 2008. However, not every dollar of tax legally owed is actually paid. The great majority of taxpayers comply with the law by filing returns and paying their taxes on time, but some do not comply, either because they do not understand their obligations due to the complexity of the tax law or because they seek to avoid those obligations.

Tax Compliance: In 2006, the IRS released updated results of its first large study in two decades of the difference between taxes owed and taxes actually paid—the “tax gap.” The IRS estimated that taxpayers initially underpaid by \$345 billion in 2001. This equates to a voluntary compliance rate of 84 percent. Late payments and IRS enforcement action reduced this to a net tax gap of \$290 billion, raising the net compliance rate to 86 percent. The Department of the Treasury does not have es-

timates of the tax gap for the years after 2001, though current efforts are underway to provide a new estimate and subsequently update it annually.

Due to changes in methodologies, comparisons between the 2001 estimates and those from earlier studies should be made cautiously. However, it does appear that the voluntary compliance rate has not changed much since the 1980s. The IRS previously reported voluntary compliance rates of 87 percent in 1988, 86 percent in 1985, and 84 percent in 1983. While the overall compliance rate seems to have moved relatively little over time, each one percentage point change significantly impacts revenue. A one percentage point improvement would increase revenue by nearly \$30 billion per year, based on recent revenue numbers.

The IRS compliance estimates, primarily based on random audits of individuals and businesses, are not precise, but give a good general sense of the size of the tax gap and patterns in compliance. This sort of information is critical for effectively targeting IRS enforcement programs to yield the greatest improvement with the smallest cost and burden on taxpayers. The IRS’ estimates are most accurate for underpayments of known taxes as recorded

Table 13-5. NATIONAL WEALTH
(As of the end of the fiscal year, in trillions of 2008 dollars)

	1960	1965	1970	1975	1980	1985	1990	1995	2000	2005	2006	2007	2008
ASSETS													
Publicly Owned Physical Assets:													
Structures and Equipment	2.4	2.7	3.4	4.1	4.3	4.6	5.0	5.6	6.4	7.7	8.2	8.7	8.7
Federally Owned or Financed	1.4	1.5	1.6	1.8	1.7	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8
Federally Owned	1.2	1.2	1.3	1.2	1.1	1.2	1.3	1.4	1.2	1.1	1.2	1.2	1.2
Grants to State & Local Gov'ts	0.2	0.3	0.4	0.6	0.6	0.8	0.9	1.0	1.2	1.4	1.4	1.5	1.6
Funded by State & Local Gov'ts	1.0	1.3	1.7	2.3	2.6	2.5	2.8	3.2	4.0	5.2	5.6	6.0	5.9
Other Federal Assets	0.5	0.5	0.5	0.6	0.9	1.0	0.9	0.7	1.0	1.7	1.7	1.7	1.5
Subtotal	2.9	3.2	3.9	4.8	5.2	5.6	5.9	6.2	7.3	9.4	9.9	10.4	10.2
Privately Owned Physical Assets:													
Reproducible Assets	8.1	9.3	11.4	14.7	19.1	20.3	23.1	25.6	31.1	38.0	39.6	40.2	40.2
Residential Structures	3.2	3.7	4.4	5.6	7.7	7.9	9.1	10.3	12.9	17.4	18.2	18.3	17.6
Nonresidential Plant & Equipment	3.2	3.6	4.6	6.1	7.8	8.6	9.6	10.5	12.7	14.6	15.3	15.7	16.1
Inventories	0.8	0.9	1.0	1.3	1.6	1.5	1.6	1.7	1.9	2.0	2.0	2.1	2.2
Consumer Durables	1.0	1.1	1.4	1.7	2.0	2.2	2.8	3.1	3.6	4.0	4.1	4.1	4.1
Land	2.4	2.9	3.3	4.3	6.6	7.5	7.8	5.8	9.5	18.3	18.8	18.8	14.1
Subtotal	10.6	12.2	14.8	19.0	25.7	27.8	30.9	31.4	40.6	56.3	58.4	59.0	54.2
Education Capital:													
Federally Financed	0.1	0.1	0.3	0.4	0.6	0.7	0.9	1.1	1.4	1.7	1.8	1.9	1.9
Financed from Other Sources	6.7	9.1	12.2	15.5	19.8	23.1	28.5	33.6	43.0	48.6	50.5	52.9	55.2
Subtotal	6.8	9.2	12.5	15.9	20.3	23.8	29.4	34.7	44.4	50.3	52.2	54.8	57.2
Research and Development Capital:													
Federally Financed R&D	0.2	0.4	0.6	0.7	0.7	0.8	1.0	1.1	1.2	1.3	1.4	1.4	1.5
R&D Financed from Other Sources	0.2	0.2	0.3	0.5	0.6	0.8	1.0	1.3	1.8	2.2	2.3	2.4	2.5
Subtotal	0.4	0.6	0.9	1.1	1.3	1.6	2.0	2.4	2.9	3.5	3.7	3.8	3.9
Total Assets	20.6	25.3	32.0	40.8	52.6	58.8	68.2	74.7	95.3	119.5	124.3	128.0	125.5
Net Claims of Foreigners on U.S. (+)	-0.1	-0.2	-0.2	-0.1	-0.4	0.0	0.9	1.7	3.4	6.1	6.4	8.2	7.2
Net Wealth	20.7	25.5	32.2	40.9	53.0	58.7	67.3	73.0	91.9	113.4	117.8	119.8	118.3
ADDENDA:													
Per Capita Wealth (thousands of 2008 dollars)	114.9	131.3	157.4	189.7	232.3	246.0	268.4	273.3	324.9	382.6	393.9	396.5	388.1
Ratio of Wealth to GDP (in percent)	671.3	656.6	694.8	778.5	842.6	782.2	766.2	735.8	758.5	833.6	845.8	836.7	821.0
Total Federally Funded Capital (trillions of 2008 dollars)	2.1	2.5	3.0	3.5	3.9	4.6	4.9	5.2	5.9	7.1	7.4	7.7	7.7
Percent of National Wealth	10.3	9.7	9.3	8.6	7.3	7.8	7.3	7.1	6.4	6.3	6.3	6.4	6.5

in IRS financial systems, and for individual income tax compliance studied through the recent National Research Program (NRP) random study. Non-filing estimates come from studies of census data and are somewhat less precise. The weakest portions of the IRS' estimates are in areas where no recent studies have been completed and the IRS is relying on older data (e.g., for partnerships and corporations).

Of the total tax gap, 83 percent comes from underreporting of tax liability (see chart). A significant portion of the gap also comes from underpayment of known tax debts and people who fail to file returns. Individual income taxes, the largest source of Federal receipts, account for 71 percent of the tax gap.

The highest compliance rates come in areas where the IRS has good information about income because it is reported by third parties (e.g., Form W-2, which reports wage income from employers, and Form 1099, which reports various third-party payments, including interest from banks). The IRS estimates that 95 percent of income with third-party reporting but no tax withholding (e.g., interest income, dividends) is declared on taxpayer returns. Where there is tax withholding, as in the case of most wages, nearly 99 percent of the amounts reported by payers is declared on taxpayer returns.

Conversely, the rate of underpaid taxes is high for income with little or no third-party reporting. For example, an estimated 43 percent of the tax gap comes from business income that should be reported on individual returns (Forms 1040) but goes unreported to the IRS (see Table 13-4).

Improving Tax Compliance: While the tax gap can likely never be entirely eliminated, reducing the gap by improving compliance is important because non-compliant taxpayers impose unacceptable burdens on other taxpayers and on Federal finances, as well as undermine the integrity of the tax system.

The Administration proposes to reduce U.S. tax evasion and avoidance through a series of legislative reforms and enforcement actions. In addition to the legislative reforms described in Chapter 17, the 2010 Budget provides \$332 million for a robust set of IRS initiatives to implement more vigorously this key compliance strategy, particularly in the international tax area. These targeted investments will help IRS enforce the law to ensure everyone meets the obligation to pay taxes, as well as reduce the tax gap. With these resources, IRS will pursue four key initiatives: 1) Reduce the tax gap attributable to international activities; 2) Improve reporting compliance of small business and high income taxpayers; 3) Expand document matching for business taxpayers; and 4) Address nonfiling/underpayment and collection coverage. Together, these compliance initiatives will bring in over \$2 billion in additional revenues once the resources reach full potential in 2012. The legislative reforms would bring in much more.

Though there have been targeted compliance investments in past Budgets, the 2010 Budget goes further than before to address the wide array of international tax compliance challenges. We have witnessed unprec-

edented growth in international entities, transactions, and complexity over the past two decades and IRS will now be able to catch up to the challenges it faces. Over \$128 million of the initiative total will specifically address international issues, and will generate an estimated \$740 million in additional revenues in 2012, when the newly hired staff reaches its full capacity.

Collectively these efforts will reduce the tax gap and improve the fiscal situation of the Government. Equally important, better compliance will improve the fairness of the tax system by ensuring all taxpayers pay their fair share. Implementation depends on effective IRS leadership to improve factors such as technology investments and reengineering processes, as well as on the active support of the Congress to implement tax law changes and provide needed funding for these improvements.

National Wealth

The Government relies on private wealth to support its activities. It also contributes to that wealth. Unlike a private corporation, the Federal Government routinely invests in ways that do not add directly to its assets. For example, Federal grants are frequently used to fund capital projects by State or local governments for highways and other purposes. Such investments are valuable, but they are not owned by the Federal Government and would not show up on a balance sheet for the Federal Government. It is true, of course, that to the extent these investments encourage economic growth, they augment future tax receipts. The return on investment that comes back to the Government in the form of higher taxes, however, is far less than what a private investor would require before undertaking a similar investment.

The Federal Government also supports education and research and development (R&D). These investments contribute to future productivity and are analogous to investments in physical capital. Indeed, economists have computed stocks of human and knowledge capital to reflect the accumulation of such investments. Nonetheless, such hypothetical capital stocks are obviously not owned by the Federal Government, nor would they appear on a balance sheet.

To show the importance of these kinds of issues, Table 13-5 presents a national balance sheet. It includes estimates of national wealth classified into three categories: physical assets, education capital, and R&D capital. The Federal Government has made contributions to each of these types of capital, and these contributions are shown separately in the table. At the same time, the private wealth shown in Table 13-5 generates future income and tax receipts, which finance future public activities. The Nation's wealth sets the ultimate limit on the resources available to the Government.

The table shows that Federal investments are responsible for about 6 percent of total national wealth, including education and research and development. This may seem like a small fraction, but it represents a large volume of capital: \$7.7 trillion. The Federal contribution is down from 10 percent in 1960. Much of this decline re-

fects the relative shrinkage in the stock of defense capital, which has fallen from around 35 percent of GDP in 1960 to about 5 percent in 2008.

Physical Assets: The physical assets in the table include private stocks of plant and equipment, office buildings, residential structures, land, and the Government's physical assets such as military hardware and highways. Automobiles and consumer appliances are also included in this category. The total amount of such capital is vast, \$64 trillion in 2008, consisting of \$54 trillion in private physical capital and \$10 trillion in public physical capital (including capital funded by State and local governments); by comparison, GDP was around \$14 trillion in 2008. There was a drop in the value of physical capital in 2008 because of a decline in estimated land values. This is further fallout from the bursting of the housing bubble. In the table, land is valued at market prices.

The Federal Government's contribution to this stock of capital includes its own investment in structures and equipment of \$1.2 trillion plus \$1.6 trillion in accumulated grants to State and local governments for capital projects. The Federal Government has financed over 20 percent of all the physical capital held by other levels of government. The Federal Government is also estimated to own \$1.5 trillion worth of inventories, mineral rights, and land.

Education Capital: Economists have developed the concept of human capital to reflect the notion that individuals and society invest in people as well as in physical assets. Investment in education is a good example of how human capital is accumulated. Table 13–5 includes an estimate of the stock of capital represented by the Nation's investment in formal education and training. The estimate is based on the cost of replacing the years of schooling embodied in the U.S. population aged 15 and over; in other words, the goal is to measure how much it would cost to reeducate the U.S. workforce at today's prices (rather than at the original cost). This is more meaningful economically than the historical cost of schooling, and is comparable to the methods used to estimate the physical capital stocks presented earlier.

Although this is a relatively crude measure, it does provide a rough order of magnitude for the current value of the investment in education. According to this measure, the stock of education capital amounted to \$55 trillion in 2008, of which about 3 percent was financed by the Federal Government. The total stock of education capital was slightly larger in value than the Nation's private stock of physical capital. The main investors in education capital have been State and local governments, parents, and students themselves.

Even broader concepts of human capital have been proposed. Not all useful training occurs in a schoolroom or in formal training programs at work. Much informal learning occurs within families or on the job, but measuring its value is very difficult. Labor compensation, however, amounts to about two-thirds of national income, with the other third attributed to capital. Viewing total labor income as the product of human capital suggests that the total value of human capital would be twice the value of

physical capital, assuming that human capital earns a similar rate of return. Thus, the estimates offered here are in a sense conservative, because they reflect only the costs of acquiring formal education and training, which is why they are referred to as education capital rather than human capital. They constitute that part of total human capital that can be attributed to formal education and training.

Research and Development Capital: Research and development can also be thought of as an investment, because R&D represents a current expenditure that is made in the expectation of earning a future return. After adjusting for depreciation, the flow of R&D investment can be added up to provide an estimate of the current R&D stock.⁴ That stock is estimated to have totaled \$3.9 trillion in 2008. Although this represents a large amount of research, it is a relatively small portion of total National wealth. Of this stock, 37 percent was funded by the Federal Government.

Liabilities: When considering how much the United States owes as a Nation, the debts that Americans owe to one another cancel out. Table 13–5 only shows net totals for the Nation. Gross debt is important even though it does not appear in Table 13–5. The amount of debt owed by Americans to other Americans can exert both positive and negative effects on the economy. Americans' willingness and ability to borrow have made possible consumption and housing purchases that would not have been possible without access to credit. The unsound lending practices of recent years and the decline in housing prices, however, have combined to produce a worldwide credit crisis in which many traditional sources of credit have dried up for American consumers and investors. The Government and the Federal Reserve System have taken aggressive action to restore liquidity to the Nation's credit markets, and these measures have helped stabilize financial markets (for more detail about the financial crisis and the economic outlook, see Chapter 12, "Economic Assumptions.")

Because internal debts net out, the only debts that show up in Table 13–5 are the debts Americans owe to foreigners as a result of investments that foreigners have made in the United States. America's net foreign debt has been increasing rapidly in recent years because of the imbalance in the U.S. current account. The current account deficit, however, has declined from a maximum of 6.6 percent in the fourth quarter of 2005 to 3.7 percent in the fourth quarter of 2008. It remains high relative to historical experience, but it ended the year lower than at any time since 2001. The size of the net foreign debt remains relatively small compared with the total stock of U.S. assets. In 2008, it amounted to 6 percent of total assets including education and R&D capital.

Federal debt does not appear explicitly in Table 13–5 because much of it consists of claims held by Americans; only that portion of the Federal debt held by foreign-

⁴ R&D depreciates in the sense that the economic value of applied research and development tends to decline with the passage of time, as still newer ideas move the technological frontier.

Table 13-6. ECONOMIC AND SOCIAL INDICATORS

Calendar Years	1960	1970	1980	1990	1995	2000	2006	2007	2008
Economic:									
Living Standards:									
Real GDP per person (2000 dollars)	13,840	18,392	22,666	28,429	30,128	34,761	37,798	38,192	38,265
average annual percent change (5-year trend)	0.6	2.3	2.6	2.3	1.2	2.9	1.7	1.8	1.6
Real Disposable Income Per Capita Average (2000 dollars)	9,735	13,563	16,940	21,281	22,153	25,473	28,134	28,648	28,754
average annual percent change (5-year trend)	1.2	3.2	2.1	1.8	0.8	2.8	1.8	1.8	1.6
Median Income: All Households (2007 dollars)	NA	41,620	42,429	46,049	46,034	50,557	49,568	50,233	NA
average annual percent change (5-year trend)	NA	NA	0.5	1.2	-0.0	1.9	0.0	0.5	NA
Poverty Rate (%) (a)	22.2	12.6	13.0	13.5	13.8	11.3	12.3	12.5	NA
Income Inequality:									
Income Share of top 1% of All Taxpayers	8.4	7.8	8.2	13.0	13.5	16.5	18.0	NA	NA
Income Share of Lower 60% of All Households	31.8	32.3	31.2	29.3	28.0	27.3	26.5	26.9	NA
Economic Security:									
Civilian Unemployment (%)	5.5	4.9	7.1	5.5	5.6	4.0	4.6	4.6	5.8
CPI-U (% Change)	1.7	5.9	13.5	5.4	2.8	3.4	3.2	2.9	3.8
Payroll Employment Increase (millions)	-0.4	-0.4	0.3	0.3	2.2	2.0	2.1	1.2	-3.1
Managerial or Professional Jobs (% of civilian employment)	NA	NA	NA	29.2	32.0	33.8	34.9	35.5	36.3
Wealth Creation:									
Net National Saving Rate (% of GDP) (b)	10.6	8.3	7.4	4.4	4.1	5.9	3.1	1.7	-0.9
Innovation:									
Patents Issued to U.S. Residents (thousands)	42.3	50.6	40.8	52.8	64.4	96.9	102.2	93.7	NA
Multifactor Productivity (average 5 year percent change)	1.0	0.8	0.8	0.6	0.5	1.1	1.7	1.5	NA
Nonfarm Output per Hour (average 5 year percent change)	1.8	2.1	1.1	1.6	1.5	2.5	2.6	2.1	1.9
Environment:									
Air Quality:									
Nitrogen Oxide Emissions (millions of tons)	18.2	26.9	27.1	25.5	25.0	22.6	17.7	17.0	NA
Sulfur Dioxide Emissions (millions of tons)	22.3	31.2	25.9	23.1	18.6	16.3	13.5	12.9	NA
Carbon Monoxide (millions of tons)	NA	204.0	185.4	154.2	126.8	114.5	92.1	88.3	NA
Lead Emissions (thousands of tons)	NA	220.9	74.2	5.0	3.9	2.8	1.0	1.0	NA
Greenhouse Gas Emissions (tetragrams CO2 equivalent)	NA	NA	NA	5,202.2	5,625.4	6,227.2	5,963.0	6,047.6	NA
Water Quality:									
Population Served by Secondary Treatment or Better (mils) (c)	57.2	85.7	117.9	146.5	161.1	189.1	NA	NA	NA
Social:									
Families:									
Children Living with Mother Only (% of all children)	9.2	11.6	18.6	21.6	24.0	22.3	24.0	24.1	NA
Safe Communities:									
Violent Crime Rate (per 100,000 population) (d)	160.0	364.0	597.0	729.6	684.5	506.5	473.6	466.9	NA
Murder Rate (per 100,000 population) (d)	5.1	7.8	10.2	9.4	8.2	5.5	5.7	5.6	NA
Murders (per 100,000 Persons Age 14 to 17) (d)	NA	NA	5.9	9.8	11.0	4.8	NA	NA	NA
Health:									
Infant Mortality (per 1000 Live Births)	26.0	20.0	12.6	9.2	7.6	6.9	6.6	6.6	NA
Low Birthweight [<2,500 gms] Babies (%)	7.7	7.9	6.8	7.0	7.3	7.6	8.3	8.2	NA
Life Expectancy at birth (years)	69.7	70.8	73.7	75.4	75.8	77.0	78.1	NA	NA
Cigarette Smokers (% population 18 and older) (e)	NA	39.2	33.0	25.3	24.6	23.2	20.8	19.7	20.8
Overweight (% population with Body-Mass Index>25.0)	NA	NA	NA	NA	52.1	56.9	61.8	63.0	NA
Learning:									
High School Graduates (% of population 25 and older)	44.6	55.2	68.6	77.6	81.7	84.1	85.5	85.7	NA
College Graduates (% of population 25 and older)	8.4	11.0	17.0	21.3	23.0	25.6	28.0	28.7	NA
National Assessment of Educational Progress (c)									
Reading 17-year olds	NA	NA	285.0	290.0	288.0	287.4	NA	NA	NA
Mathematics 17-year olds	NA	NA	299.0	305.0	306.5	307.8	NA	NA	NA
Participation:									
Individual Charitable Giving per Capita (2007 dollars)	294.7	421.4	449.9	514.1	486.7	744.0	767.3	759.0	NA
(by election year)	(1960)	(1972)	(1980)	(1988)	(1992)	(1996)	(2000)	(2004)	(2008)
Voting for President (% eligible population) (f)	63.8	56.2	54.2	52.8	58.1	51.7	54.2	60.1	61.7

(a) The poverty rate does not reflect noncash government transfers.

(b) 2008 through Q3 only.

(c) Data interpolated in some years.

(d) Not all crimes are reported, and the fraction that go unreported may have varied over time, preliminary data for 2006.

(e) Data for 2008 covers only January-June.

(f) As computed by Professor Michael McDonald, George Mason University, after adjusting the population for those not eligible to vote in Presidential elections.

ers is included, along with the other debts to foreigners. Comparing the Federal Government's net liabilities with total national wealth, however, does provide another indication of the relative magnitude of the imbalance in the Government's accounts. Federal net liabilities, as reported in Table 13-1, amounted to 7 percent of net U.S. wealth, as shown in Table 13-5. Prospectively, however, Federal liabilities are a much larger share of national wealth, as indicated by the long-run projections in Part III.

Social Indicators

There are certain broad responsibilities that are unique to the Federal Government. Especially important are preserving national security, fostering healthy economic conditions including sound economic growth, promoting health and social welfare, and protecting the environment. Table 13-6 offers a rough cut of information that can be useful in assessing how well the Federal Government has been doing in promoting the domestic portion of these general objectives.

The indicators shown in Table 13-6 are only a subset drawn from the vast array of available data on conditions in the United States. In choosing indicators for this table, priority is given to measures that are consistently available over an extended period. Such indicators make it easier to draw comparisons and establish trends. In some cases, however, this means choosing indicators with significant limitations.

The individual measures in this table are influenced to varying degrees by many Government policies and programs, as well as by external factors beyond the Government's control. They do not measure the outcomes of Government policies, because they generally do not show the direct results of Government activities, but they do provide a quantitative measure of the progress or

lack of progress toward some of the ultimate goals that Government policy is intended to promote.

Such a table can serve two functions. First, it highlights areas where the Federal Government might need to modify its current practices or consider new approaches. Where there are clear signs of deteriorating conditions, corrective action might be appropriate. Second, the table provides a context for evaluating other data on Government activities. For example, Government actions that weaken its own financial position may be appropriate when they promote a broader social objective. The Government cannot avoid making such trade-offs because of its size and the broad-ranging effects of its actions. Monitoring these effects and incorporating them in the Government's policy making is a major challenge.

Despite a general pattern of progress in economic and social conditions since the 1960s, not all of the indicators in the table show improvement. The poverty rate fell sharply from 1960 to 1970 but since then the poverty rate has shown no further sustained improvement. Income inequality, which was unchanging in the 1960s, began to rise in the 1970s and by the early years of this century had reached levels not seen since before the Great Depression. Some of the trends in these indicators turned around in the 1990s. Perhaps most notable has been the turnaround in the crime rate. After reaching a peak in the early 1990s, violent crime fell by a third. The turnaround was especially dramatic in the murder rate, which has been lower since 1998 than at any time since the 1960s, although the last three years have seen an uptick. The current recession has had a negative effect on some of these indicators: the unemployment rate has increased, and real GDP has declined. Further deterioration is expected in 2009, but the Government has acted decisively to address the economic and financial crisis.

TECHNICAL NOTE: SOURCES OF DATA AND METHODS OF ESTIMATING

Long-Range Budget Projections

The long-range budget projections are based on demographic and economic assumptions. A simplified model of the Federal budget, developed at OMB, is used to compute the budgetary implications of these assumptions.

Demographic and Economic Assumptions: For the years 2009-2019, the assumptions are drawn from the Administration's economic projections used for the 2010 Budget. These budget assumptions reflect the President's policy proposals. The economic assumptions are extended beyond this interval by holding inflation, interest rates, and the unemployment rate constant at the levels assumed in the final year of the budget forecast. Population growth and labor force growth are extended using the intermediate assumptions from the 2008 Social Security trustees' report. The projected rate of growth for real GDP

is built up from the labor force assumptions and an assumed rate of productivity growth. Productivity growth is assumed to equal the average rate of growth in the Budget's economic assumptions. Over the long term—

- CPI inflation holds stable at 2.1 percent per year; the unemployment rate is constant at 5.0 percent; and the yield on 10-year Treasury notes is steady at 5.2 percent.
- Real GDP per hour, a measure of productivity, grows at the same average rate as in the Administration's medium-term projections—2.0 percent per year.
- Consistent with the demographic assumptions in the trustees' reports, U.S. population growth slows from around 1 percent per year to about two-thirds that rate by 2030, and slower rates of growth beyond that point. By the end of the projection period it is as low as 0.4 percent per year.

- Real GDP growth declines because of the slowdown in population growth and the increase in the population over age 65, who supply less work effort than younger people do. Historically, real GDP has grown at an average yearly rate of 3.3 percent. In these projections, average real GDP growth declines to around 2.4 percent per year.

The economic and demographic projections described above are set by assumption and do not automatically change in response to changes in the budget outlook. This is unrealistic, but it simplifies comparisons of alternative policies.

Budget Projections: For the period through 2019, receipts follow the budget's policy projections. After 2019, tax receipts rise relative to GDP, reflecting "real bracket creep." Discretionary spending follows the policies in the Budget over the next ten years and grows at the rate of growth in nominal GDP afterwards. Other spending also aligns with the Budget through the budget horizon. Long-run Social Security spending is projected by the Social Security actuaries using this Chapter's long-range assumptions. Medicare benefits are projected based on the estimates in the 2008 Medicare trustees' report, adjusted for differences in the assumed inflation rate and the growth rate in real GDP per capita, and further adjusted for the estimated long-run effects of the Administration's policy proposals. Federal pensions are drawn from the 2008 *Financial Report of the United States Government* and previous reports. Medicaid outlays are based on the economic and demographic projections in the model. Other entitlement programs are projected based on rules of thumb linking program spending to elements of the economic and demographic projections such as the poverty rate.

Federally Owned Assets and Liabilities

Financial Assets: The principal source of data is the Federal Reserve Board's Flow-of-Funds Accounts.

Fixed Reproducible Capital: Estimates were developed from the OMB historical data base for physical capital outlays and software purchases. The data base extends back to 1940 and was supplemented by data from other selected sources for 1915–1939. The source data are in current dollars. To estimate investment flows in constant dollars, it was necessary to deflate the nominal investment series. This was done using chained price indexes for Federal investment from the National Income and Product Accounts. The resulting capital stocks were aggregated into nine categories and depreciated using geometric rates roughly following those used by the Bureau of Economic Analysis in its estimates of physical capital stocks.

Fixed Nonreproducible Capital: Historical estimates for the value of Federal land holdings in the period 1960–1985 were drawn from estimates in Michael J. Boskin, Marc S. Robinson, and Alan M. Huber, "Government Saving, Capital Formation and Wealth in the United States, 1947–1985," published in *The Measurement of Saving, Investment, and Wealth*, edited by Robert E.

Lipsey and Helen Stone Tice (The University of Chicago Press, 1989). Estimates were updated using changes in the value of private land from the Flow-of-Funds Balance Sheets and from the Agriculture Department for farm land. The value of Federal proven reserves of oil and natural gas deposits were based on data from the Department of Energy and valued at contemporary market prices for oil and gas.

Inventories: Recent years' data are from the *Financial Report of the United States Government*. For the period prior to 1995, data are from the Bureau of Economic Analysis.

Debt Held by the Public: Treasury data.

Insurance and Guarantee Liabilities: Sources of data are the OMB Pension Guarantee Model and OMB estimates based on program data. Historical data on liabilities for deposit insurance were also drawn from CBO's study, *The Economic Effects of the Savings and Loan Crisis*, issued January 1992.

Pension and Post-Employment Health Liabilities: The accrued liabilities for Federal retiree pensions and retiree health insurance along with the liability for Veterans disability compensation were derived from the *Financial Report of the United States Government* (and the Consolidated Financial Statement for some earlier years). Prior to 1976, the values were extrapolated.

Other Liabilities: The source of data for trade payables and miscellaneous liabilities is the Federal Reserve's Flow-of-Funds Accounts. The *Financial Report of the United States Government* was the source for benefits due and payable.

Environmental Liabilities: The source of data for environmental liabilities was the *Financial Report of the United States Government*. Prior to 1994, the estimates were extrapolated assuming a constant ratio to GDP.

National Balance Sheet

Publicly Owned Physical Assets: Basic sources of data for the federally owned or financed stocks of capital are the Federal investment flows described in Chapter 6. Federal grants for State and local government capital are added, together with adjustments for inflation and depreciation in the same way as described above for direct Federal investment. Data for total State and local government capital come from the revised capital stock data prepared by the Bureau of Economic Analysis extrapolated for 2008.

Privately Owned Physical Assets: Data are from the Flow-of-Funds national balance sheets and from the private net capital stock estimates prepared by the Bureau of Economic Analysis extrapolated for 2008 using investment data from the National Income and Product Accounts.

Education Capital: The stock of education capital is computed by valuing the cost of replacing the total years of education embodied in the U.S. population 15 years of age and older at the current cost of providing schooling. The estimated cost includes both direct expenditures in the private and public sectors and an estimate of students' forgone earnings, i.e., it reflects the opportunity

cost of education. Estimates of students' forgone earnings are based on the minimum wage for high-school students and year-round, full-time earnings of 18–24 year olds for college students. These year-round earnings are reduced by 25 percent because students are usually out of school three months of the year. Yearly earnings by age and educational attainment are from the Bureau of the Census.

For this presentation, Federal investment in education capital is a portion of the Federal outlays included in the conduct of education and training. This portion includes direct Federal outlays and grants for elementary, secondary, and vocational education and for higher education. The data exclude Federal outlays for physical capital at educational institutions because these outlays are classified elsewhere as investment in physical capital. The data also exclude outlays under the GI Bill; outlays for graduate and post-graduate education spending in HHS, Defense and Agriculture; and most outlays for vocational training. The Federal share of the total education stock in each year is estimated by averaging the prior years' shares of Federal education outlays in total education costs.

Data on investment in education financed from other sources come from educational institution reports on the sources of their funds, published in U.S. Department of Education, Digest of Education Statistics. Nominal expenditures were deflated by the implicit price deflator for GDP to convert them to constant dollar values. Education capital is assumed not to depreciate, but to be retired when a person dies. An education capital stock computed using this method with different source data can be found in Walter McMahon, "Relative Returns to Human and Physical Capital in the U.S. and Efficient Investment Strategies," *Economics of Education Review*, Vol. 10, No. 4, 1991. The method is described in detail in Walter McMahon, *Investment in Higher Education*, Lexington Books, 1974.

Research and Development Capital: The stock of R&D capital financed by the Federal Government was developed from a data base that measures the conduct of R&D. The data exclude Federal outlays for physical capital used in R&D because such outlays are classified elsewhere as investment in federally financed physical capital. Nominal outlays were deflated using the GDP deflator to convert them to constant dollar values.

Federally funded capital stock estimates were prepared using the perpetual inventory method, in which

annual investment flows are cumulated to arrive at a capital stock. This stock was adjusted for depreciation by assuming an annual rate of depreciation of 10 percent on the estimated stock of applied research and development. Basic research is assumed not to depreciate. These are the same assumptions used in a study published by the Bureau of Labor Statistics estimating the R&D stocks financed by private industry (U.S. Department of Labor, Bureau of Labor Statistics, "The Impact of Research and Development on Productivity Growth," Bulletin 2331, September 1989). Chapter 6 of this volume contains additional details on the estimates of the total federally financed R&D stock, as well as its national defense and nondefense components.

A similar method was used to estimate the stock of R&D capital financed from sources other than the Federal Government. The component financed by universities, colleges, and other nonprofit organizations is estimated based on data from the National Science Foundation, Surveys of Science Resources. The industry-financed R&D stock component is estimated from that source and from the U.S. Department of Labor, "The Impact of Research and Development on Productivity Growth," Bulletin 2331, September 1989.

Experimental estimates of R&D capital stocks have been prepared by BEA. The results are described in "A Satellite Account for Research and Development," *Survey of Current Business*, November 1994. These BEA estimates are lower than those presented here primarily because BEA assumes that the stock of basic research depreciates, while the estimates in Table 13–5 assume that basic research does not depreciate. BEA also assumed a slightly higher rate of depreciation for applied research and development, 11 percent, compared with the 10 percent rate used here.

Sources of Data and Assumptions for Estimating Social Indicators

The main sources for the data in this table are the Government statistical agencies. The data are all publicly available, and can be found in such general sources as the annual *Economic Report of the President* and the *Statistical Abstract of the United States* or from the respective agencies' web sites.

14. NATIONAL INCOME AND PRODUCT ACCOUNTS

The National Income and Product Accounts (NIPAs) are an integrated set of statistics prepared by the Department of Commerce that measure aggregate U.S. economic activity. Because the NIPAs include Federal transactions and are widely used in economic analysis, it is important to understand the differences between the NIPAs' distinctive presentation of Federal transactions and that of the budget.

The main purpose of the NIPAs is to measure the Nation's total production of goods and services, known as gross domestic product (GDP), and the incomes generated in its production. GDP excludes intermediate product to avoid double counting. Government consumption expenditures along with government gross investment—State and local as well as Federal—are included in GDP as part of final output, together with personal consumption expenditures, gross private domestic investment, and net exports of goods and services (exports minus imports).

Not all government expenditures are counted in GDP. Benefit payments to individuals, grants to State and local governments, subsidies, and interest payments are not purchases of final output and are therefore not included in GDP. However, these transactions are recorded in the NIPA government account that records current receipts and expenditures (including depreciation on government gross investment) because all of these affect the government's claim on economic resources.

Federal transactions are included in the NIPAs as part of the government sector.¹ The Federal subsector is designed to measure certain important economic effects of Federal transactions in a way that is consistent with the conceptual framework of the entire set of integrated accounts. The NIPA Federal subsector is not itself a budget, because it is not a financial plan for proposing, determining, and controlling the fiscal activities of the Government. For example, it omits from its current receipts and current expenditures certain "capital transfers" (such as estate and gift tax receipts) that are recorded in the budget. NIPA concepts also differ in many other ways from budget concepts, and therefore the NIPA presentation of Federal finances is significantly different from that of the budget.

Differences between the NIPAs and the Budget

Federal transactions in the NIPAs are measured according to NIPA accounting concepts and as a result they differ from the budget in netting and grossing, timing, and coverage. These differences cause current receipts and expenditures in the NIPAs to differ from total receipts and outlays in the budget, albeit by relatively small

amounts.² Differences in timing and coverage also cause the NIPA measure of net Federal Government saving to differ from the budget surplus or deficit. Unlike timing and coverage differences, netting and grossing differences have equal effects on receipts and expenditures and thus have no effect on net Government saving. The NIPAs also combine transactions into different categories from those used in the budget.

Netting and grossing differences arise because the budget records certain transactions as offsets to outlays that are recorded as current receipts in the NIPAs (or vice versa). The budget treats as governmental receipts all income that comes to the Government due to its sovereign powers—mainly, but not exclusively, taxes. The budget offsets against outlays any income that arises from voluntary business-type transactions with the public. The NIPAs generally follow this concept as well, and income to Government revolving accounts (such as the Government Printing Office) is offset against their expenditures. However, the NIPAs have a narrower definition of "business-type transactions" than does the budget. Rents and royalties, and some regulatory or inspection fees, which are classified as offsets to outlays in the budget, are recorded in the NIPAs as Government receipts (income receipts on assets and current transfer receipts, respectively). The NIPAs include Medicare premiums as Government receipts, while the budget classifies them as business-type transactions (offsetting receipts). In addition, the NIPAs treat the net surplus of Government enterprises, such as the Postal Service, as a component of current receipts.

In the budget, any intragovernmental income paid from one account to another is offset against outlays rather than being recorded as a receipt so that total outlays and receipts measure only transactions with the public. For example, Government contributions for Federal employee social insurance (such as Social Security) are offset against outlays. In contrast, the NIPAs treat the Federal Government like any other employer and show contributions for Federal employee social insurance as expenditures by the employing agencies and as current receipts, rather than offsets against outlays. The NIPAs also display certain transactions that are not recorded explicitly in the budget. For example, unemployment benefits for Federal employees are financed by direct appropriations rather than social insurance contributions. The NIPAs impute the social insurance contributions to the expenditures of employing agencies—again, treating the Federal Government like any other employer.

Timing differences for receipts occur because the NIPAs generally record business taxes when they accrue,

¹ The NIPA government sector consists of the Federal subsector and a State and local subsector that is a single set of transactions for all U.S. State and local units of government, treated as a consolidated entity.

² Over the period 1994–2008, NIPA current expenditures averaged 3.6 percent higher than budget outlays, while NIPA current receipts averaged 2.6 percent higher than budget receipts.

while the budget generally records receipts when they are received. Thus the NIPAs attribute corporations' final settlement payments back to the quarter(s) in which the profits that gave rise to the tax liability occurred. The delay between accrual of liability and Treasury receipt of payment can result in significant timing differences between NIPA and budget measures of receipts for any given accounting period.

Timing differences also occur for expenditures. When the first day of a month falls on a weekend or holiday, monthly benefit checks normally deposited on the first day of the month may be deposited a day or two earlier; the budget then reflects two payments in one month and none the next. As a result, the budget totals occasionally reflect 13 monthly payments in one year and only 11 the next. NIPA expenditure figures always reflect 12 benefit payments per year, giving rise to a timing difference compared to the budget.

Coverage differences arise on the expenditure side because of the NIPA treatment of Government investment. The budget includes outlays for Federal investments as they are paid, while the NIPA Federal current account excludes current investments but includes a depreciation charge on past investments ("consumption of general government fixed capital") as part of "current expenditures." The inclusion of depreciation on fixed capital (structures, equipment and software) in current expenditures can be thought of as a proxy for the services that capital renders; i.e., for its contribution to Government output of public services. The depreciation charge is not a full reflection of capital services, however, since it does not include the net return to capital that in a private corporation would appear as interest income or profit. The NIPAs would need to include an imputed interest charge for government capital to assure a fully parallel treatment.

Certain items in the budget are excluded from the NIPA Federal current account because they are related to the acquisition or sale of assets, and not linked to current consumption or income. Examples include Federal grants to State and local governments for capital investment, investment subsidies to business, lump sum payments to amortize the unfunded liability of the Uniformed Services Retiree Health Care Fund and the Postal Service Retiree Health Benefits Fund, and forgiveness of debt owed by foreign governments. Likewise, estate and gift taxes, included in budget receipts, are excluded from NIPA current receipts as being capital transfers. The NIPAs also exclude the proceeds from the sales of nonproduced assets such as land. Bonuses paid on Outer Continental Shelf oil leases and proceeds from broadcast spectrum auctions are shown as offsetting receipts in the budget and are deducted from budget outlays. In the NIPAs these transactions are excluded from the Federal current account as an exchange of assets with no current production involved. The NIPAs are not strictly consistent in this interpretation, however, since they do include in total revenues the taxation of capital

gains. Also unlike the budget, the NIPAs currently exclude transactions with U.S. territories.³

The treatment of Government pension plan income and outgo creates a coverage difference. Whereas the budget treats employee payments to these pension plans as governmental receipts, and employer contributions by agencies as offsets to outlays because they are intragovernmental, the NIPAs treat employer contributions as personal income and employee payments as a transfer of income within the household sector, in the same way as it treats contributions to pension plans in the private (household) sector. Likewise, the budget records a Government check to a retired Government employee as an outlay, but under NIPA concepts, no Government expenditure occurs at that time; the payment is treated (like private pension payments) as a transfer of income within the household sector.

Financial transactions such as loan disbursements, loan repayments, loan asset sales, and loan guarantees are excluded from the NIPA current accounts on the grounds that such transactions simply involve an exchange of assets rather than current production, income, or consumption. In contrast, under the Federal Credit Reform Act of 1990, the budget records the estimated subsidy cost of the direct loan or loan guarantee as an outlay at the time when the loan is disbursed. The cash flows with the public are recorded in nonbudgetary accounts as a means of financing the budget rather than as budgetary transactions. This treatment recognizes that a Federal direct loan is an exchange of assets with equal value after allowing for the subsidy to the borrower implied by the terms of the loan. It also recognizes the subsidy element in loan guarantees. In the NIPAs, these subsidies are not recognized. Exclusion from the NIPA current accounts of asset purchases, direct loans, and loan guarantees under the Troubled Asset Relief Program (TARP) and other financial stabilization measures gives rise to the largest difference between budget and NIPA expenditures totals in 2009.

The NIPAs, like the budget, include all interest transactions with the public, including interest received by and paid to the loan financing accounts; and both the NIPAs and the budget include administrative costs of credit program operations.

Similarly to loan transactions, deposit insurance outlays for resolving failed banks and thrift institutions are excluded from the NIPAs on the grounds that there are no offsetting current income flows from these transactions. This exclusion creates a particularly large difference in 2009, because of anticipated large outlays to liquidate failed bank deposits. In a similar episode in 1991, this exclusion was the largest difference between the NIPAs and the budget and made NIPA net Government saving a significantly smaller negative number than the budget deficit that year. In subsequent years, as assets acquired from failed financial institutions were sold, these collections tended to make the budget deficit a smaller negative figure than NIPA net Federal Government saving.

³ Beginning with the NIPA comprehensive revisions scheduled for July 2009, government transactions with U.S. territories will be included in transactions with the rest of the world.

TREATMENT OF FINANCIAL STABILIZATION PROGRAMS

U.S. financial stabilization efforts include programs administered by Executive Branch agencies (principally Treasury, the Federal Deposit Insurance Corporation (FDIC), and the National Credit Union Administration (NCUA)) and by the Federal Reserve. The Troubled Assets Relief Program (TARP), administered by Treasury, has injected capital into banks and other financial institutions by purchasing preferred stock, guaranteed assets of financial institutions, and provided loans and other support to the auto industry. Treasury has also provided support for the major Government Sponsored Enterprises (GSEs) in the housing area, the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac), which have been placed under conservatorship by the Federal Housing Finance Administration, including purchasing GSE preferred stock and purchasing mortgage-backed securities issued by GSEs. The FDIC and NCUA have taken steps to provide liquidity to the banking industry.

The Executive Branch actions in support of financial stabilization give rise to a number of differences between the budget and the NIPAs. As mentioned in the main text, all deposit insurance transactions of the FDIC and NCUA are recorded on a cash basis in the budget, but only premiums are included in the NIPAs. Likewise, purchase of GSE preferred stock is recorded in the budget on a cash basis, but is excluded from the NIPA current accounts; GSE preferred stock purchases, however, are scored as capital transfers.

Many of the Treasury's financial stabilization programs, including TARP equity purchases, are recorded in the budget on a credit basis, in which the budget recognizes the estimated subsidy value of direct loans, loan guarantees, and equity purchases at the time the loan or purchase is made. Under the Emergency Economic Stabilization Act of 2008, this credit treatment was extended to equity purchases under the TARP, as well as loans. As mentioned in the text, the NIPAs normally exclude the principal disbursements and repayments of credit transactions as exchanges of assets with no current production involved; the interest and dividend receipts, however, are included in NIPA current receipts as receipts on assets. For certain transactions, the NIPAs recognize the subsidy conveyed by these transactions by recording capital transfers, calculated as the difference between the actual price paid for the financial asset and an estimate of its market value. This capital transfer treatment applies to preferred stock purchases and purchases of warrants for common stock.

Both the budget and the NIPAs treat the Federal Reserve System as if it were a non-Federal entity; thus, those financial stabilization efforts undertaken by the Federal Reserve (assistance to AIG and Bear Stearns, for example) are not scored in either the budget or NIPA current expenditures. Both the budget and the NIPAs treat GSEs in a similar way to their treatment of the Fed, and they continue to treat the two GSEs in conservatorship in the same manner.

Federal Sector Current Receipts

Table 14–1 shows the NIPA classification of Federal current receipts in five major categories and four of the subcategories used to measure taxes, which are similar to the budget categories but with some significant differences.

Current tax receipts is the largest category of current receipts, and its personal current taxes subcategory—composed primarily of the individual income tax—is the largest single subcategory. The NIPAs' taxes on corporate income subcategory differs in classification from the corresponding budget category primarily because the NIPAs include the deposit of earnings of the Federal Reserve System as corporate income taxes, while the budget treats these collections as miscellaneous receipts. (The timing difference between the NIPAs and the budget is especially large for corporate receipts.) The taxes on production and imports subcategory is composed of excise taxes and customs duties.

Contributions for Government social insurance is the second largest category of current receipts. It differs from the corresponding budget category primarily because: (1) the NIPAs include Federal employer contributions for social insurance as a governmental receipt, while the budget offsets these contributions against outlays as undistributed offsetting receipts; (2) the NIPAs include pre-

miums for Parts B and D of Medicare as governmental receipts, while the budget nets them against outlays; (3) the NIPAs treat Government employee contributions to their pension plans as a transfer of personal income within the household sector (as if the pension system were private), while the budget includes them in governmental receipts; and (4) the NIPAs impute employer contributions for Federal employees' unemployment insurance and workers' compensation.

The income receipts on assets category consists mainly of interest payments received on Government direct loans (such as student loans) and rents and royalties on Outer Continental Shelf oil leases. The current transfer receipts category consists primarily of deposit insurance premiums, fees, fines and other receipts from both individuals and businesses, less insurance settlements from the National Flood Insurance Program—virtually all of which are netted against outlays in the budget. The current surplus (or deficit) of Government enterprises category is the profit or loss of "Government enterprises," such as the Postal Service, which are business-type operations of Government that usually appear in the budget as public enterprise revolving funds. Depreciation (consumption of enterprise fixed capital) is netted in calculating the current surplus of Government enterprises.

Table 14–1. FEDERAL TRANSACTIONS IN THE NATIONAL INCOME AND PRODUCT ACCOUNTS, 1999-2010
(In billions of dollars)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Estimate	
											2009	2010
CURRENT RECEIPTS												
Current tax receipts	1165.2	1305.6	1266.9	1089.7	1065.9	1113.8	1344.5	1530.8	1634.5	1553.0	1244.4	1425.8
Personal current taxes	868.5	987.4	993.8	851.1	781.7	778.7	914.8	1033.6	1142.1	1110.0	924.8	1067.5
Taxes on production and imports	82.5	87.8	86.4	86.4	89.1	93.2	98.9	98.3	97.6	100.8	103.8	108.9
Taxes on corporate income	207.9	223.5	179.5	144.7	186.8	232.7	318.8	387.2	380.2	327.5	199.2	232.9
Taxes from the rest of the world	6.2	6.8	7.1	7.4	8.3	9.3	12.0	11.6	14.5	14.8	16.5	16.5
Contributions for Government social insurance	642.2	687.8	713.8	729.6	749.9	795.1	842.1	889.8	934.1	970.4	989.2	1025.8
Income receipts on assets	20.9	24.3	26.4	21.3	21.4	23.7	24.5	24.9	27.9	32.1	130.6	169.8
Current transfer receipts	21.8	24.9	26.5	25.5	24.7	27.7	14.3	35.1	36.8	42.5	73.1	73.0
Current surplus of Government enterprises	0.3	-1.3	-6.5	-1.1	2.5	0.2	-5.5	-4.1	-2.6	-3.1	-7.0	-11.0
Total current receipts	1850.3	2041.2	2027.1	1865.0	1864.4	1960.6	2220.0	2476.6	2630.8	2594.8	2430.4	2683.4
CURRENT EXPENDITURES												
Consumption expenditures	469.5	496.0	519.7	575.5	648.0	706.6	758.4	798.5	837.3	915.0	1025.0	1087.5
Defense	307.2	321.2	335.7	368.4	424.5	470.4	508.9	532.1	566.9	624.1	684.7	712.5
Nondefense	162.3	174.8	184.0	207.1	223.5	236.2	249.5	266.4	270.5	290.9	340.3	375.0
Current transfer payments	976.3	1023.2	1108.0	1216.6	1308.9	1377.5	1459.1	1545.1	1643.4	1783.4	2063.8	2226.2
Government social benefits	733.0	762.7	823.6	900.9	956.3	1005.1	1068.1	1151.7	1240.8	1359.6	1545.8	1622.2
Grants-in-aid to State and local governments	227.7	244.1	268.2	296.7	329.3	347.6	359.4	360.3	370.4	388.2	481.1	558.1
Other transfers to the rest of the world	15.7	16.4	16.3	19.0	23.2	24.7	31.7	33.1	32.2	35.6	36.9	45.9
Interest payments	285.9	283.3	267.9	234.9	214.6	216.8	242.8	284.5	305.2	314.2	357.6	407.0
Subsidies	36.1	49.6	53.7	37.9	46.1	43.5	55.4	53.3	45.6	51.2	56.3	68.6
Wage disbursements less accruals .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total current expenditures	1767.8	1852.0	1949.3	2064.9	2217.6	2344.4	2515.8	2681.4	2831.5	3063.8	3502.7	3789.3
Net Federal Government saving	82.4	189.2	77.8	-199.9	-353.2	-383.8	-295.8	-204.8	-200.7	-469.0	-1072.3	-1105.9
ADDENDUM: TOTAL RECEIPTS AND EXPENDITURES												
Current receipts	1850.3	2041.2	2027.1	1865.0	1864.4	1960.6	2220.0	2476.6	2630.8	2594.8	2430.4	2683.4
Capital transfer receipts	27.6	28.8	28.2	26.4	21.7	24.7	24.6	27.7	25.8	28.6	26.1	19.6
Total receipts	1877.9	2070.1	2055.3	1891.3	1886.1	1985.3	2244.5	2504.3	2656.6	2623.5	2456.5	2703.0
Current expenditures	1767.9	1852.0	1949.3	2064.9	2217.6	2344.4	2515.8	2681.4	2831.5	3063.8	3502.7	3789.3
Net investment:												
Gross government investment:												
Defense	46.5	48.5	49.9	54.5	59.0	65.1	72.2	77.1	81.8	91.2	104.8	107.6
Nondefense	31.9	32.2	30.3	32.6	33.3	33.6	35.2	40.6	40.5	43.8	46.3	49.0
Less: Consumption of fixed capital:												
Defense	59.7	60.2	60.3	60.4	61.4	63.4	67.0	71.2	75.5	80.0	84.3	87.7
Nondefense	24.5	26.5	27.7	28.2	28.7	29.3	30.8	32.8	34.8	37.2	40.1	40.8
Capital transfer payments	31.3	39.3	39.8	44.3	62.0	62.9	66.0	69.7	76.8	90.4	341.6	157.0
Net purchases of nonproduced assets	-1.7	-0.2	-0.9	0.3	*	0.1	-0.7	-0.3	-13.9	-10.2	-17.3	-0.9
Total expenditures	1791.8	1885.1	1980.3	2108.0	2281.9	2413.5	2590.6	2764.5	2906.5	3161.9	3853.7	3973.4
Net lending or net borrowing (-)	86.1	185.0	75.0	-216.7	-395.8	-428.1	-346.1	-260.2	-249.9	-538.4	-1397.3	-1270.5

* \$50 million or less.

Federal Sector Current Expenditures

Table 14–1 shows the five major NIPA categories for current expenditures and five subcategories, which differ greatly from the corresponding budget categories.

Government consumption expenditures consist of goods and services purchased by the Federal Government, including compensation of employees and depreciation on fixed capital. Gross investment (shown among the addendum

items in Table 14–1) is thus excluded from current expenditures and does not figure in computing net Government saving on a NIPA basis, whereas depreciation—charges on federally-owned fixed capital (“consumption of general government fixed capital”)—is included. The NIPAs treat State and local investment and capital consumption in the same way—regardless of the extent to which it is financed with Federal aid (capital transfer payments) or from State and local own-source receipts.

Although gross investment is not included in Government current expenditures, Government gross investment is included in total GDP along with current consumption expenditures (including depreciation), which makes the treatment of the government sector in the NIPAs similar to that of the private sector. Investment includes structures, equipment, and computer software.

The largest expenditure category consists mainly of current transfer payments for Government income security and health benefits, such as Social Security and Medicare. Payment of pension benefits to former Government employees is not included, as explained previously. Grants-in-aid to State and local governments help finance a range of programs, including income security, Medicaid, and education (but capital transfer payments for construction of highways, airports, waste-water treatment plants, and mass transit are excluded). "Current transfer payments to the rest of the world (net)" consists mainly of grants to foreign governments.

Interest payments consist of the interest paid by the Government on its debt (excluding debt held by trust funds, other than Federal employee pension plans; and other Government accounts). Where the budget nets interest received on loans against outlays, the NIPAs treat it as current receipts.

Subsidies consist of subsidy payments for resident businesses (excluding subsidies for investment). NIPA subsidies do not include the imputed credit subsidies

estimated as budget outlays under credit reform. Rather, as explained previously loans and guarantees are excluded from the NIPAs except for associated interest and fees.

Wage disbursements less accruals is an adjustment that is necessary to the extent that the wages paid in a period differ from the amount earned in the period.

Differences in the Estimates

Since the introduction of the unified budget in January 1968, NIPA current receipts have been greater than budget receipts in most years. This is due principally to grossing differences and the fact that estate and gift taxes, which the NIPAs exclude as capital transfers, have been roughly matched by Medicare premiums, which the NIPAs include as a governmental receipt, but the budget treats as an offsetting receipt that is netted against the outlay total. Since 1986, NIPA current expenditures have usually been higher than budget outlays (from which the Medicare premiums and employer retirement contributions are netted out as offsetting receipts), despite the omission from NIPA expenditures of capital transfer grants and pension benefit payments to former Government employees.

Two components of budget outlays, however, are sometimes sufficiently large in combination to exceed the usual netting and grossing adjustments. These are financial transactions and net investment (the difference between

Table 14-2. RELATIONSHIP OF THE BUDGET TO THE FEDERAL SECTOR, NIPAs

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Estimate	
											2009	2010
RECEIPTS												
Budget receipts	1827.6	2025.5	1991.4	1853.4	1782.5	1880.3	2153.9	2407.3	2568.2	2524.3	2156.7	2332.6
Contributions to Government employee retirement plans	-4.5	-4.8	-4.7	-4.6	-4.6	-4.6	-4.5	-4.4	-4.3	-4.2	-4.5	-4.3
Capital transfers received	-27.6	-28.8	-28.2	-26.3	-21.7	-24.7	-24.6	-27.7	-25.8	-28.6	-26.1	-19.6
Other coverage differences	-7.0	-8.0	-7.9	-8.9	-9.0	-10.4	-11.2	-11.8	-11.9	-13.1	-13.3	-13.6
Netting and grossing differences	65.7	70.6	69.9	77.0	85.1	89.7	77.4	108.5	116.5	128.9	259.0	298.2
Timing differences	-3.9	-13.2	6.7	-25.6	32.1	30.3	28.9	4.7	-12.0	-12.6	58.5	90.0
NIPA current receipts	1850.3	2041.2	2027.1	1865.0	1864.4	1960.6	2220.0	2476.6	2630.8	2594.8	2430.4	2683.4
EXPENDITURES												
Budget outlays	1702.0	1789.2	1863.2	2011.2	2160.1	2293.0	2472.2	2655.4	2728.9	2982.9	3997.8	3591.1
Government employee retirement plan transactions	32.1	31.7	31.5	33.7	33.1	33.5	39.8	42.1	40.5	53.0	43.6	69.1
Deposit insurance and other financial transactions	-6.1	-9.0	-6.2	-6.7	2.1	0.4	0.9	-9.1	-12.2	-56.9	-1400.6	-74.8
Capital transfer payments	-31.3	-35.1	-39.8	-44.1	-45.4	-46.4	-47.8	-51.3	-52.8	-55.8	-307.8	-119.9
Net purchases of nonproduced assets	1.7	0.3	0.9	-0.3	*	-0.1	0.7	0.3	13.9	10.2	17.3	0.9
Net investment	5.7	6.0	7.9	1.4	-2.3	-6.1	-9.6	-13.7	-12.1	-17.9	-26.8	-28.1
Other coverage differences	2.7	4.0	7.9	-0.6	-13.5	-21.3	-26.5	-38.3	-6.4	5.4	916.3	46.7
Netting and grossing differences	65.7	70.6	69.9	77.0	85.1	89.7	77.4	108.5	116.5	128.9	259.0	298.2
Timing differences	-4.7	-5.6	14.3	-6.7	-1.6	1.6	8.6	-12.5	15.1	14.1	3.9	6.2
NIPA current expenditures	1767.8	1852.0	1949.3	2064.9	2217.6	2344.4	2515.8	2681.4	2831.5	3063.8	3502.7	3789.3
ADDENDUM												
Budget surplus or deficit (-)	125.6	236.2	128.2	-157.8	-377.6	-412.7	-318.3	-248.2	-160.7	-458.6	-1841.2	-1258.4
NIPA net Federal Government saving	82.4	189.2	77.8	-199.9	-353.2	-383.8	-295.8	-204.8	-200.7	-469.0	-1072.3	-1105.9

* \$50 million or less.

gross investment and depreciation). Large outlays associated with resolving the failed savings and loan associations and banks in 1990 and 1991 caused those year's budget outlays to exceed NIPA current expenditures. With the change in budgetary treatment of direct loans in 1992 under credit reform, the cost of direct loans to the public recorded in the budget has been reduced bringing it closer to the NIPA treatment. Disbursement and repayment of loans made since that time are recorded outside the budget; only credit subsidies are recorded as budget outlays, unlike the NIPAs which do not include this element of government expenditure.

Every year during the period 1976–1992, the budget deficit showed a larger imbalance than the amount of (negative) net Federal Government saving as measured in the NIPAs. The largest difference, \$78.8 billion, occurred in 1991 as a result of resolving failed financial institutions as discussed above; the budget deficit was then \$269.2 billion, while the NIPA net Government saving was \$190.5 billion. Beginning in 1993, deposit insurance and other financial transactions caused the relationship to change, and in 1993–2002, the budget deficit or surplus showed a more positive fiscal picture than the NIPA measure, with NIPA (negative) net Federal Government saving exceeding in magnitude the budget deficit when the budget was in deficit and (positive) net Federal Government saving falling short of the budget surplus during the years the

budget was in surplus. This also was the case in 2007 and 2008 due to unusual swings in timing differences and financial transactions those years, and sales of nonproduced assets. For 2003–2006, and for 2009–2010, however, the NIPA net Federal Government saving is once again smaller than the budget deficit, largely due to timing differences and financial transactions. For 2009, the difference is expected to be historically high, over three-fourths of a trillion dollars, due primarily to differing treatment of the TARP and other financial stabilization measures (see text box); and it is expected to remain high in 2010.

Table 14–1 displays Federal transactions using NIPA concepts with actual data for 1999–2008 and estimates for 2009 and 2010 consistent with the Administration's Budget proposals. Table 14–2 summarizes the reasons for differences between the NIPA and budget measures. Annual NIPA data for 1948–2010 are published in Section 14 of a separate budget volume, *Historical Tables, Budget of the U.S. Government, Fiscal Year 2010*.

Detailed estimates of NIPA current receipts and expenditures consistent with the Budget and including quarterly estimates will be published in a forthcoming issue of the Department of Commerce publication, *Survey of Current Business* and on the Bureau of Economic Analysis website at www.bea.gov.