

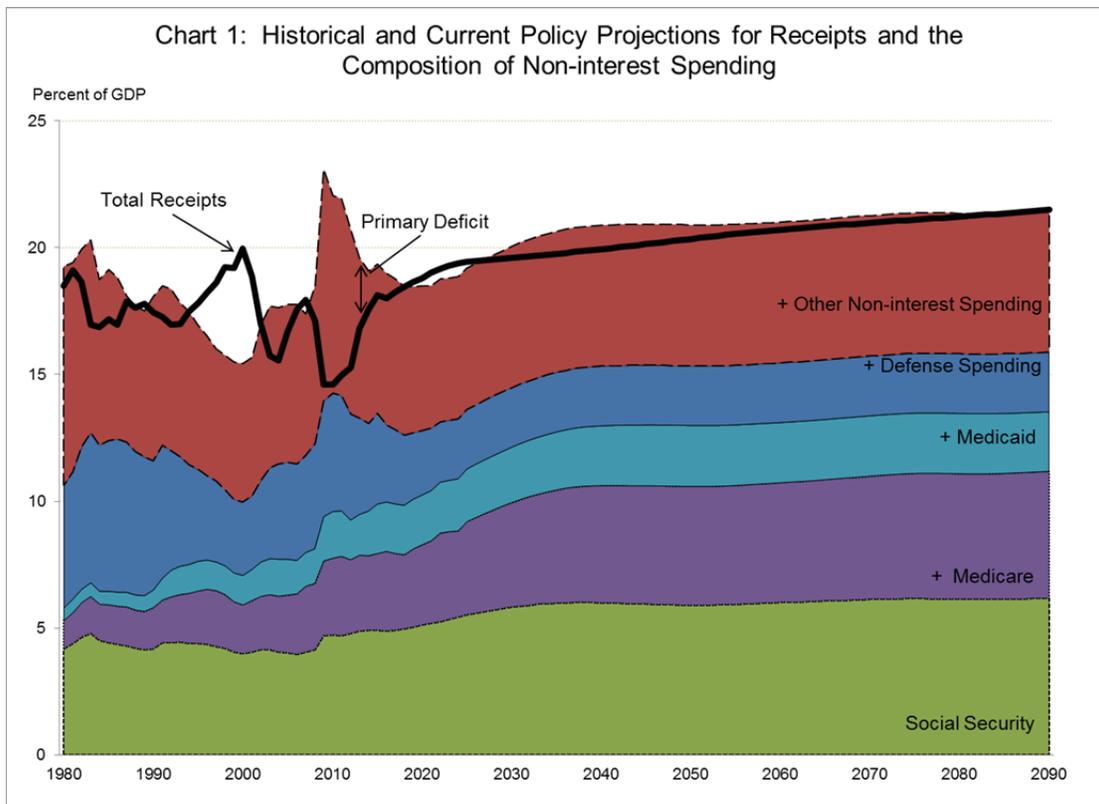
United States Government Required Supplementary Information (Unaudited) For the Years Ended September 30, 2015, and 2014

The Sustainability of Fiscal Policy

One of the important purposes of the *Financial Report* is to help citizens and policymakers assess whether current fiscal policy is sustainable and, if it is not, the urgency and magnitude of policy reforms necessary to make fiscal policy sustainable. A sustainable policy is one where the ratio of debt held by the public to GDP (the debt-to-GDP ratio) is ultimately stable or declining.

As discussed below, the projections in this report indicate that current policy is not sustainable. If current policy is left unchanged, the projections show the debt-to-GDP ratio will fall about 6 percentage points between 2015 and 2025 before commencing a steady rise, exceeding its 2015 level (74 percent) by 2031, exceeding 100 percent by 2043, and reaching 223 percent in 2090.

These conclusions are rooted in the projected trends in receipts, spending, and surpluses/deficits in the context of current law and policy, although, as described in the following pages, there is considerable uncertainty surrounding these projections. The projections are on the basis of policies currently in place and are neither forecasts nor predictions. For comparison, under the 2014 projections, the debt-to-GDP ratio fell about 4 percentage points between 2014 and 2024 before commencing a steady rise, exceeding the 2014 level (74 percent) by 2028, exceeding 100 percent by 2039, and reaching 321 percent in 2089.



Current Policy Projections for Primary Deficits

A key determinant of growth in the debt-to-GDP ratio and hence fiscal sustainability is the primary deficit-to-GDP ratio. The primary deficit is the difference between non-interest spending and receipts, and the primary deficit-to-GDP ratio is the primary deficit expressed as a percent of GDP. As shown in Chart 1, the primary deficit-to-GDP ratio grew rapidly in 2009 due to the financial crisis and the recession and the policies pursued to combat both. The ratio remained high from 2010 to 2012 despite shrinking in each successive year, and fell significantly in 2013 and 2014. The primary deficit is projected to shrink in the next few years as the discretionary spending limits called for in the *Budget Control Act of 2011 (BCA)* remain in effect and the economy continues to recover. Starting in 2019, receipts are projected to exceed non-interest spending, and this primary surplus is projected to peak at 0.5 percent of GDP in 2024. After 2025, however, increased spending for Social Security and health programs due to the continued retirement of the baby boom generation is expected to cause the primary surplus to steadily deteriorate and become a primary deficit in 2028 that reaches 1.0 percent of GDP in 2038. The primary deficit gradually decreases beyond that point as the aging of the population continues at a slower pace, and becomes a primary surplus in 2085 that reaches 0.1 percent of GDP in 2090.

The receipt share of GDP fell substantially in 2009 and 2010 and remained low in 2011 and 2012 because of the recession and tax reductions enacted as part of the *2009 American Recovery and Reinvestment Act (ARRA)* and the *Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010*. The share rose to 18.1 percent in 2015, exceeding its 30-year average of 17.2 percent due to continued economic growth and the higher tax rates enacted under the *American Tax Relief Act (ATRA) of 2012*. Receipts are projected to grow slightly more rapidly than GDP as increases in real (i.e., inflation-adjusted) incomes cause more taxpayers and a larger share of income to fall into the higher individual income tax brackets. Other possible paths for the receipts-to-GDP ratio and the implications for projected debt are analyzed in the “Alternative Scenarios” section.

On the spending side, the non-interest spending share of GDP is projected to stay at or below its current level of about 19 percent until shortly before 2030, and to then rise gradually to 20.9 percent of GDP by 2040 and 21.4 percent of GDP by 2090. The reductions in the non-interest spending share of GDP over the next few years are mostly due to the expected reductions in spending for overseas contingency operations (OCO), caps on discretionary spending and the automatic spending cuts mandated by the BCA, and the subsequent increases are principally due to faster growth in Medicare, Medicaid, and Social Security spending (see Chart 1). The aging of the baby boom generation over the next 25 years is projected to increase the Social Security, Medicare, and Medicaid spending shares of GDP by about 1.1 percentage points, 1.6 percentage points, and 0.4 percentage points, respectively. After 2040, the Social Security spending share of GDP gradually declines, returns to 2040 levels in 2060 and then increases slightly, while the combined Medicare and Medicaid spending share of GDP continues to increase, albeit at a slower rate, due to projected increases in health care costs.

The *Patient Protection and Affordable Care Act*, as amended by the *Health Care and Education Reconciliation Act of 2010 (ACA)* significantly affects projected spending for both Medicare and Medicaid. That legislation expands health insurance coverage, including Medicaid, includes many measures designed to reduce health care cost growth, and significantly reduces Medicare payment rates. On net, the ACA is projected to substantially reduce the annual increases in Medicare payment rates over the next 75 years. The Medicare spending projections in the long-term fiscal projections are based on the projections in the 2015 Medicare trustees’ report, and those projections show a substantial slowdown in Medicare cost growth. The projections assume that Medicaid enrollment increases and that Medicaid cost per beneficiary grows at the same reduced rate as Medicare cost growth per beneficiary. As discussed in Note 23 to the U.S. Government’s Financial Statements, these projections are subject to much uncertainty about the ultimate effects of the ACA’s provisions to reduce health care cost growth. Even if those provisions work as intended and as assumed in this projection, Chart 1 shows that there is still a long-term gap between projected receipts and projected total non-interest spending.

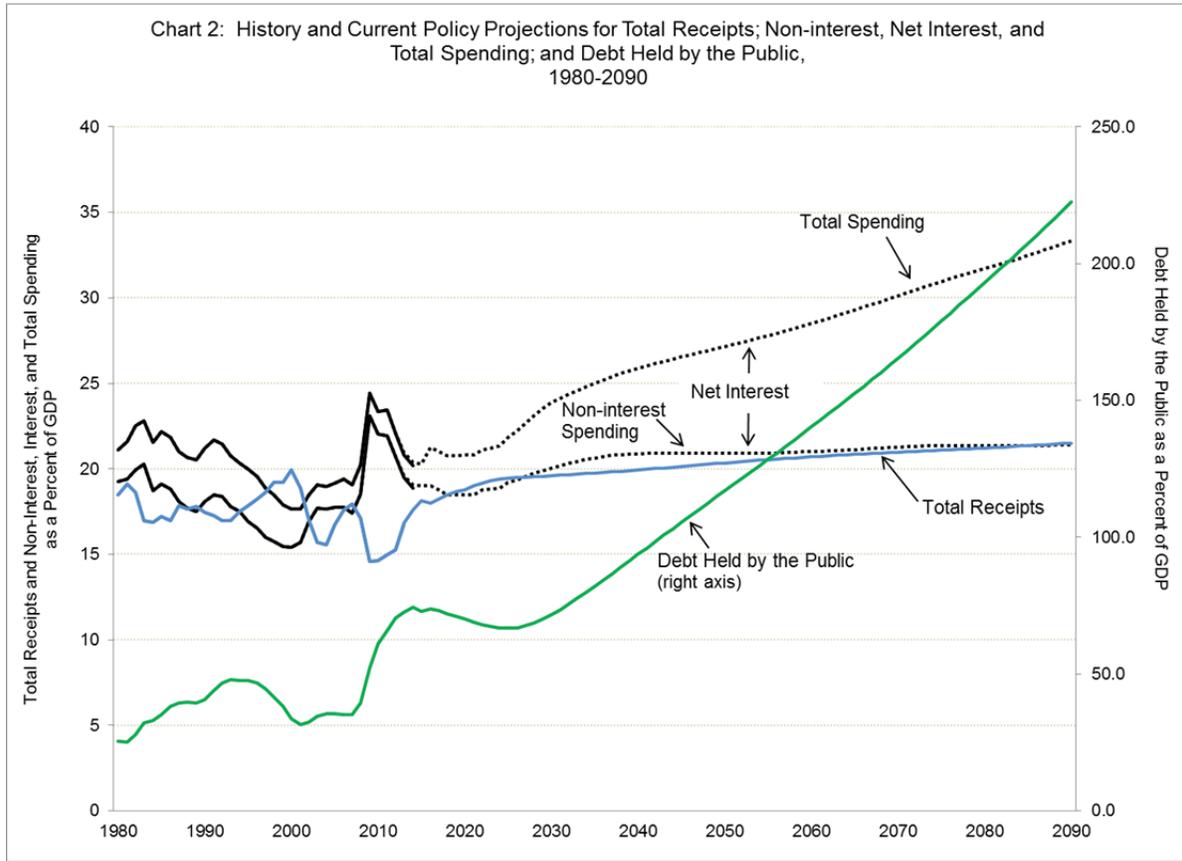
Current Policy Projections for Debt and Interest Payments

The primary deficit projections in Chart 1, along with projections for interest rates and GDP, determine the projections for the debt-to-GDP ratio that are shown in Chart 2 (right axis). That ratio was 74 percent at the end of fiscal year 2015, and under current policy is projected to be 67 percent in 2025, 106 percent in 2045, and 223 percent in 2090. The continuous rise of the debt-to-GDP ratio after 2025 indicates that current policy is unsustainable.

The change in debt held by the public from one year to the next is approximately equal to the unified budget deficit, the difference between total spending and total receipts.¹ Total spending is non-interest spending plus interest spending. Chart 2 (left axis) shows that the rapid rise in total spending and the unified deficit is almost entirely due to projected interest

¹ The change in debt each year is also affected by certain transactions not included in the unified budget deficit, such as changes in Treasury’s cash balances and the non-budgetary activity of Federal credit financing accounts. These transactions are assumed to hold constant at about 0.4 percent of GDP each year, with the same effect on debt as if the primary deficit was higher by that amount.

payments on the debt. As a percent of GDP, interest spending was 1.2 percent in 2015, and under current policy is projected to reach 4.4 percent in 2035 and 12.0 percent in 2090.



Another way of viewing the change in the financial outlook in this year’s report relative to previous years’ reports is in terms of the projected debt-to-GDP ratio in 2088, the last year of the projection period in the FY 2013 report. This ratio is projected to reach 217 percent in the fiscal year 2015 projections, which compares with 315 percent projected in the fiscal year 2014 projections and 277 percent projected in the fiscal year 2013 projections.²

The Cost of Delay in Closing the 75-Year Fiscal Gap

The longer policy action to close the fiscal gap is delayed, the larger the post reform primary surpluses must be to achieve the target debt-to-GDP ratio at the end of the 75-year period. This can be illustrated by varying the years in which reforms closing the fiscal gap are initiated while holding the target ratio of debt to GDP in 2090 equal to the 2015 ratio (74 percent). Three reforms are considered, each one beginning in a different year, and each one increasing the primary surplus relative to current policy by a fixed percent of GDP starting in the reform year. The analysis shows that the longer policy action is delayed, the larger the post-reform primary surplus must be to bring the debt-to-GDP ratio to 74 percent of GDP in 2090. Future generations are harmed by delays in policy changes because delay necessitates higher primary surpluses during their lifetimes, and those higher primary surpluses must be achieved through some combination of lower spending and higher taxes and other receipts.

As previously shown in Chart 1, under current policy, primary deficits occur in much of the projection period. Table 1 shows primary surplus changes necessary to make the debt-to-GDP ratio in 2090 equal to its level in 2015 under each of the three policies. If reform begins in 2016, then it is sufficient to raise the primary surplus share of GDP by 1.2 percentage points in every year between 2016 and 2090 in order for the debt-to-GDP ratio in 2090 to equal its level in 2015 (74 percent). This policy raises the average 2016-2090 primary surplus-to-GDP ratio from -0.3 percent to +0.9 percent.

² For further information on changes from the 2013 projections, see the Required Supplementary Information in the 2014 *Financial Report*.

Table 1
Costs of Delaying Fiscal Reform

Timing of Reforms	Required Change in Average Primary Surplus
Reform in 2016 (No Delay)	1.2 percent of GDP between 2016 and 2090
Reform in 2026 (Ten-Year Delay)	1.5 percent of GDP between 2026 and 2090
Reform in 2036 (Twenty-Year Delay) ...	1.9 percent of GDP between 2036 and 2090

Note: Reforms taking place in 2015, 2025, and 2035 from the 2014 Financial Report were 2.1, 2.5, and 3.1 percent of GDP, respectively.

In contrast to a reform that begins immediately, if reform begins in 2026 or 2036, then the primary surpluses must be raised by 1.5 percent and 1.9 percent of GDP, respectively, in order for the debt-to-GDP ratio in 2090 to equal 74 percent. The difference between the primary surplus increase necessary if reform begins in 2026 and 2036 (1.5 and 1.9 percent of GDP, respectively) and the increase necessary if reform begins in 2016 (1.2 percent of GDP) is a measure of the additional burden policy delay would impose on future generations. The costs of delay are due to the additional debt that accumulates between 2015 and the year reform is initiated, in comparison to the scenario in which reform begins immediately.

These projections likely understate the cost of lengthy policy delays because they assume interest rates will not rise as the debt-to-GDP ratio grows. Under the current projections, the debt-to-GDP ratio is stable through 2030 and then grows rapidly. If a higher debt-to-GDP ratio causes the interest rate on government borrowing to rise, thus making it more costly for the government to service its debt and simultaneously slowing private investment, then the primary surplus required to return the debt-to-GDP ratio to its 2015 level would also increase. This dynamic may accelerate with higher ratios of debt to GDP, potentially resulting in there being no feasible level of taxes and spending that would reduce the debt-to-GDP ratio to its 2015 level. The potential impact on the projections of interest rates rising as the debt-to-GDP ratio rises is explored in the “Alternative Scenarios” section.

Alternative Scenarios

The long-run outlook for the budget is extremely uncertain. This section illustrates this inherent uncertainty by presenting alternative scenarios for the growth rate of health care costs, interest rates, discretionary spending, and receipts. (Not considered here are the effects of alternative assumptions for long-run trends in birth rates, mortality, and immigration.)

The population is aging rapidly and will continue to do so over the next several decades, which puts pressure on programs such as Social Security, Medicare, and Medicaid. A shift in projected fertility, mortality, or immigration rates could have important effects on the long-run projections. Higher-than-projected immigration, fertility, or mortality rates would improve the long-term fiscal outlook. Conversely, lower-than-projected immigration, fertility, or mortality rates would result in deterioration in the long-term fiscal outlook.

Effect of Changes in Health Care Cost Growth

One of the most important assumptions underlying the projections is the projected growth of health care costs. Enactment of the ACA in 2010 reduced the projected long-run growth rates of health care costs, but these growth rates are still highly uncertain. As an illustration of the dramatic effect of variations in health care cost growth rates, Table 2 shows the effect on the size of reforms necessary to close the fiscal gap of per capita health care cost growth rates that are one percentage point higher or two percentage points higher than the growth rates in the base projection, as well as the effect of delaying closure of the fiscal gap.³ As indicated earlier, if reform is initiated in 2016, eliminating the fiscal gap requires that the 2016-2090 primary surplus increase by an average of 1.2 percent of GDP in the base case. However, that figure increases to 4.0 percent of GDP if per capita health cost growth is assumed to be 1 percentage point higher, and 8.5 percent of GDP if per capita health cost growth is 2 percentage points higher. The cost of delaying reform is also increased if health care cost growth is higher, due to the fact that debt accumulates more rapidly during the period of inaction. For example, the lower part of Table 2 shows that delaying reform initiation from 2016 to 2026 requires that 2026-2090 primary surpluses be higher by an average of 0.3 percent of GDP in the base case, 0.8 percent of GDP if per capita health cost growth is 1 percentage point

³ The base case health cost growth rates are derived from the projections in the 2015 Medicare trustees’ report. These projections are summarized and discussed in Note 23 (see Table 1B in particular) and the “Medicare Projections” section of the RSI for the SOSI.

higher, and 1.7 percent of GDP if per capita health cost growth is 2 percentage points higher. The dramatic deterioration of the long-run fiscal outlook caused by higher health care cost growth shows the critical importance of managing health care cost growth, including through effective implementation of the ACA.

Table 2			
Impact of Alternative Health Cost Scenarios on Cost of Delaying Fiscal Reform			
Scenario	Primary Surplus Increase (% of GDP)		
	Starting in:		
	2016	2026	2036
Base Case.....	1.2	1.5	1.9
1% pt. higher per person health cost growth.....	4.0	4.8	6.1
2% pt. higher per person health cost growth.....	8.5	10.2	12.8
	Change in Primary Surplus Increase if Reform is Delayed From 2016 to:		
	2026		2036
Base Case.....		0.3	0.6
1% pt. higher per person health cost growth.....		0.8	2.1
2% pt. higher per person health cost growth.....		1.7	4.4

NOTE: Increments may not equal the subtracted difference of the components due to rounding.

Effects of Changes in Interest Rates

A higher debt-to-GDP ratio is likely to increase the interest rate on Government debt, making it more costly for the Government to service its debt. Table 3 displays the effect of several alternative scenarios using different nominal (and real) interest rates than assumed in the base case on the size of reforms to close the fiscal gap as well as the effect of delaying closure of the fiscal gap. If reform is initiated in 2016, eliminating the fiscal gap requires that the 2016-2090 primary surplus increase by an average of 1.2 percent of GDP in the base case, 1.5 percent of GDP if the interest rate is 0.5 percentage point higher in every year, and 0.9 percent of GDP if the interest rate is 0.5 percentage point lower in every year. The cost of delaying reform is also increased if interest rates are higher, due to the fact that interest paid on debt accumulates more rapidly during the period of inaction. For example, the lower part of Table 3 shows that delaying reform initiation from 2016 to 2026 requires that 2026-2090 primary surpluses be higher by an average of 0.3 percent of GDP in the base case, 0.4 percent of GDP if the interest rate is 0.5 percentage point higher in every year, and 0.2 percent of GDP if the interest rate is 0.5 percentage point lower in every year.

Table 3			
Impact of Alternative Interest Rate Scenarios on Cost of Delaying Fiscal Reform			
	Primary Surplus Increase (% of GDP)		
	Starting in:		
Scenario	2016	2026	2036
Base Case: Average of 5.4 percent over 75 years.....	1.2	1.5	1.9
0.5 percent higher interest rate in each year.....	1.5	1.9	2.5
0.5 percent lower interest rate in each year.....	0.9	1.1	1.4
	Change in Primary Surplus Increase if Reform is Delayed From 2016 to:		
		2026	2036
Base Case: Average of 5.4 percent over 75 years.....		0.3	0.6
0.5 percent higher interest rate in each year.....		0.4	0.9
0.5 percent lower interest rate in each year.....		0.2	0.4

NOTE: Increments may not equal the subtracted difference of the components due to rounding.

Effects of Changes in Discretionary Spending Growth

The growth of discretionary spending has a large impact on long-term fiscal sustainability. The current base projection for discretionary spending assumes that after 2021, discretionary spending keeps pace with the economy and grows with GDP. The implications of two alternative scenarios are shown in Table 4. The first alternative scenario allows discretionary spending to grow with inflation and population after 2021 so as to hold discretionary spending constant on a real per capita basis. (This growth rate assumption is still larger than the standard 10-year budget baseline assumption, which assumes that discretionary spending grows with inflation but not with population.) The second alternative scenario sets discretionary spending in 2022 to levels consistent with the path established prior to the sequestration required by the failure of the Joint Select Committee on Deficit Reduction, and then grows discretionary spending with GDP from that point forward. As shown in Table 4, the fiscal gap decreases significantly if discretionary spending grows with inflation and population, from 1.2 percent of GDP to -0.3 percent of GDP. Conversely, if discretionary spending rises to the levels prior to Joint Committee sequestration in 2022 and then grows with GDP, the fiscal gap increases from 1.2 percent of GDP to 1.6 percent of GDP. The cost of delaying reform is greater when discretionary spending levels are higher. Initiating reforms in 2026 requires that the primary surplus increase by an average of 0.3 percent of GDP per year in the base case, and also increase by 0.3 percent of GDP if discretionary levels return to pre-Joint Committee sequestration levels. If delayed until 2036, the primary surplus must increase by an average of 0.6 percent of GDP in the base case, and increase by 0.8 percent of GDP at pre-sequestration levels.

Table 4

Impact of Alternative Discretionary Spending Growth Scenarios on Cost of Delaying Fiscal Reform

Scenario	Primary Surplus Increase (% of GDP) Starting in:		
	2016	2026	2036
Base Case: Discretionary spending growth with GDP after 2021.....	1.2	1.5	1.9
Growth with inflation and population after 2021.....	(0.3)	(0.3)	(0.4)
Reversion in 2022 to pre-Joint Committee sequester levels and growth with GDP.....	1.6	1.9	2.4
	Change in Primary Surplus Increase if Reform is Delayed From 2016 to:		
	2026	2036	
Base Case: Discretionary spending growth with GDP after 2021.....		0.3	0.6
Growth with inflation and population after 2021.....		(0.1)	(0.1)
Reversion in 2022 to pre-Joint Committee sequester levels and growth with GDP.....		0.3	0.8

NOTE: Increments may not equal the subtracted difference of the components due to rounding.

Effects of Changes in Individual Income Receipt Growth

The growth rate of receipts, specifically individual income taxes, is another key determinant of long-term sustainability. The base projections assume growth in individual income taxes over time to account primarily for the slow shift of individuals into higher tax brackets due to real wage growth (“real bracket creep”). This assumption approximates the long-term historical growth in individual income taxes relative to wages and salaries and is consistent with current tax code policy without change, as future legislation would be required to prevent real bracket creep. As an illustration of the effect of variations in individual income tax growth, Table 5 shows the effect on the size of reforms necessary to close the fiscal gap and the effect of delaying closure of the fiscal gap if long-term receipt growth as a share of wages and salaries is 0.1 percentage point higher, than the base case, as well as 0.1 percentage point lower than the base case. If reform is initiated in 2016, eliminating the fiscal gap requires that the 2016-2090 primary surplus increase by an average of 1.2 percent of GDP in the base case, only 0.2 percent of GDP if receipt growth is higher, but 2.3 percent of GDP if receipt growth is lower. The cost of delaying reform is also affected if receipt growth assumptions change, much as was the case in the previous alternative scenarios.

Table 5
Impact of Alternative Revenue Growth Scenarios on Cost of Delaying Fiscal Reform

Scenario	Primary Surplus Increase (% of GDP) Starting in:		
	2016	2026	2036
Base Case: Individual income tax bracket creep of 0.1% of wages and salaries per year....	1.2	1.5	1.9
0.2% of wages and salaries per year after 2025.....	0.2	0.2	0.3
0.0% of wages and salaries per year after 2025 (no bracket creep).....	2.3	2.7	3.5
	Change in Primary Surplus Increase if Reform is Delayed From 2016 to:		
	2026	2036	
Base Case: Individual income tax bracket creep of 0.1% of wages and salaries per year....		0.3	0.6
0.2% of wages and salaries per year after 2025.....		0.0	0.1
0.0% of wages and salaries per year after 2025 (no bracket creep).....		0.5	1.2

NOTE: Increments may not equal the subtracted difference of the components due to rounding.

Fiscal Projections in Context

In this report, a sustainable policy has been defined as one where the Federal debt-to-GDP ratio is stable or declining. However, this definition does not indicate what a sustainable debt-to-GDP ratio might be. Any particular debt ratio is not the ultimate goal of fiscal policy. Rather, the goals of fiscal policy are many, including: financing public goods, such as infrastructure and government services; a strong and growing economy; and managing the national debt so that it is not a burden to future generations. These goals are interrelated, and readers should consider how policies intended to affect one might depend on or affect another.

This report shows that current policy is not sustainable. In evaluating policies that could alter that trajectory, note that national debt may play roles in both facilitating and hindering a healthy economy. For example, Government deficit spending may support demand and allow economies to emerge from recessions more quickly. Debt may also be a cost-effective means of financing capital investment, promoting economic growth, which may in turn make debt levels more manageable in the future. However, economic theory also suggests that high levels of national debt may contribute to higher interest rates, leading to lower investment and a smaller capital stock which the economy can use to grow. Unfortunately, it is unclear what debt ratio would be sufficiently high to produce these negative outcomes, or whether the key concern is the level of debt per se, or a trend that shows debt increasing over time.

Whether the actual experience of countries supports a relationship between national debt and economic growth remains an open research question. It is not possible to perform randomized experiments on economies, and historical experience, while valuable, is filled with confounding events and circumstances. Some countries with high debt-to-GDP ratios have been observed to experience lower-than-average growth, while other countries with similarly high debt ratios continue to enjoy robust growth. Analogously, low debt-to-GDP ratios are no guarantee of strong economic growth. Moreover, the direction of causality is unclear. High debt may undermine growth; low growth may contribute to high debt.

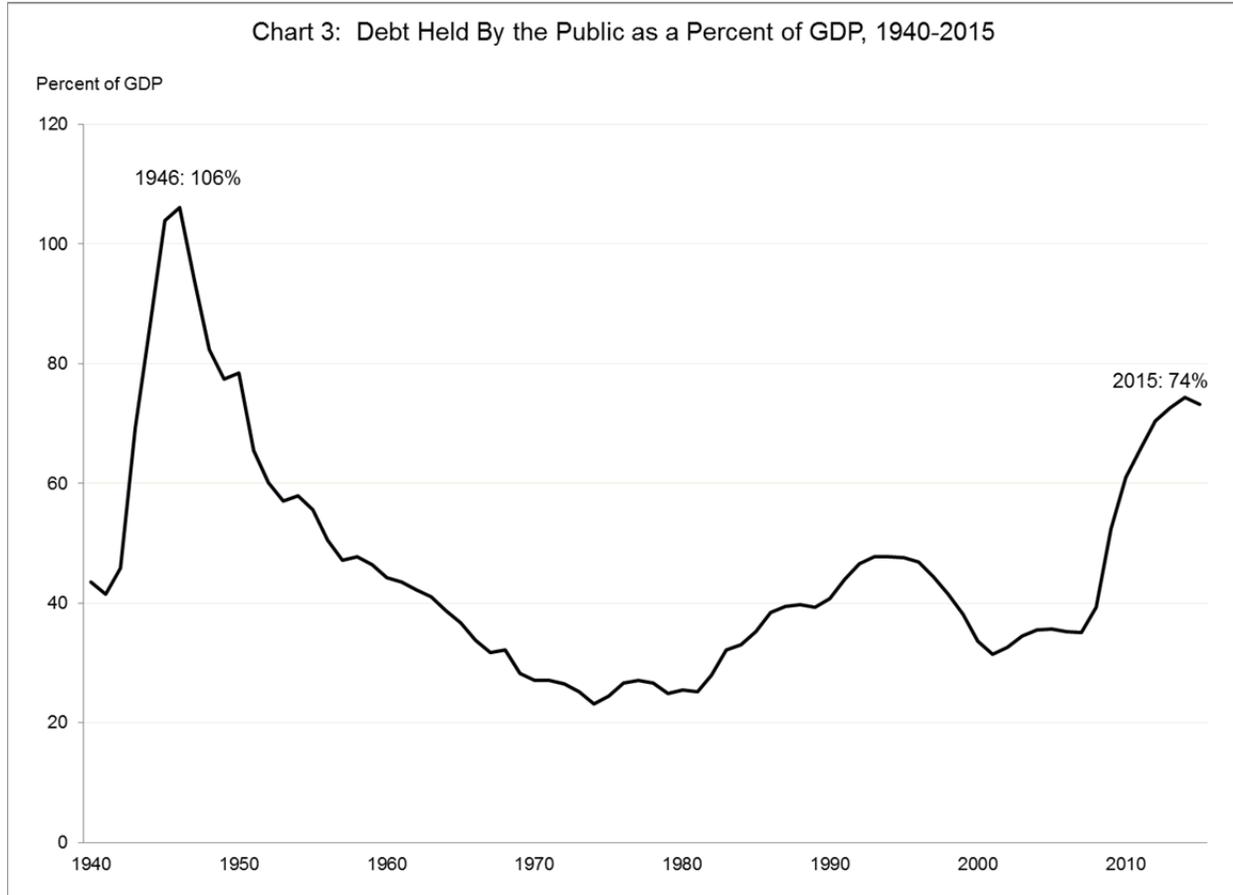
Nevertheless, to put the current and projected debt-to-GDP ratios in context, it is instructive to examine the experiences of other countries as well as that of the United States. The United States Government's debt as a percentage of GDP is relatively large compared with central government debt of other countries, but far from the largest among developed countries. Based on historical data as reported by the International Monetary Fund (IMF) for 24 select countries, the debt-to-GDP ratio in 2013 ranged from 7 percent of GDP to 174 percent of GDP.⁴ The United States is not included in this set of statistics, which underscores the difficulty in calculating debt ratios under consistent definitions, but the IMF does report a

⁴ Government Finance Statistics Yearbook, Main Aggregates and Balances, available at <http://data.imf.org>. Data is for D1 debt liabilities for the central government, excluding social security funds.

similar debt statistic for the United States as 82 percent of GDP.⁵ Despite using consistent definitions where available, these debt measures are not strictly comparable due to differences in the share of government debt that is debt of the central government, how government responsibilities are shared between central and local governments, how current policies compare with the past policies that determine the current level of debt, and how robustly each economy grows.

The historical experience of the U.S. may also provide some perspective. As Chart 3 shows, the debt-to-GDP ratio was highest in the 1940s, following the debt buildup during World War II. In the projections in this report, the U.S. would reach the previous peak debt ratio in 2045. However, the origins of current and future Federal debt are quite different from the wartime debt of the 1940s, which limits the pertinence of past experience.

As the cross-country and historical comparisons suggest, there is a very imperfect relationship between the current level of central government debt and the sustainability of overall government policy. Past accrual of debt is certainly important, but current policies and their implications for future debt accumulation are as well.



Conclusion

The United States took a potentially significant step towards fiscal sustainability in 2010 by reforming its system of health insurance through enactment of the ACA. The legislated changes for Medicare, Medicaid, and other health coverage hold the prospect of lowering the long-term growth trend for health care costs and significantly reducing the long-term fiscal gap. Furthermore, enactment of the BCA in August 2011 placed limits on future discretionary spending, while enactment of ATRA in January 2013 increased receipts under current policy. But even with these laws, the projections in this *Financial*

⁵ Data is for D1 debt liabilities for the central government, including social security funds. For the few countries where both central government debt ratios (excluding and including social security funds) are reported, the values are similar.

Report indicate that if policy remains unchanged the debt-to-GDP ratio will continually increase over the next 75 years and beyond, which implies current policies are not sustainable and must ultimately change. Subject to the important caveat that policy changes are not so abrupt that they slow continued economic growth, the sooner policies are put in place to avert these trends, the smaller are the receipt increases and/or spending decreases necessary to return the Nation to a sustainable fiscal path, and the lower the burden of the national debt will be to future generations.

Social Insurance

The social insurance programs consisting of Social Security, Medicare, Railroad Retirement, and Black Lung were developed to provide income security and health care coverage to citizens under specific circumstances as a responsibility of the Government. Because taxpayers rely on these programs in their long-term planning, social insurance program information should indicate whether the current statutory provisions of the programs can be sustained, and more generally what effect these provisions likely have on the Government's financial condition. The resources needed to run these programs are raised through taxes and fees. Eligibility for benefits depends in part on earnings and time worked by the individuals. Social Security benefits are generally redistributed intentionally toward lower-wage workers (i.e., benefits are progressive). In addition, each social insurance program has a uniform set of eligibility events and schedules that apply to all participants.

Social Security and Medicare

Social Security

The OASI Trust Fund was established on January 1, 1940, as a separate account in the Treasury. The DI Trust Fund, another separate account in the Treasury, was established on August 1, 1956. OASI pays cash retirement benefits to eligible retirees and their eligible dependents and survivors, and the much smaller DI fund pays cash benefits to eligible individuals who are unable to work because of medical conditions and certain family members of such eligible individuals. Though the events that trigger benefit payments are quite different, both trust funds have the same dedicated financing structure: primarily payroll taxes and income taxes on benefits. All financial operations of the OASI and DI Programs are handled through these respective funds. The two funds are often referred to as the combined OASDI Trust Funds. At the end of calendar year 2014, OASDI benefits were paid to approximately 59 million beneficiaries.

The primary financing source for these two funds are taxes paid by workers, their employers, and individuals with self-employment income, based on work covered by the OASDI Program. Since 1990, with the exception of calendar years 2011 and 2012, employers and employees have each paid 6.2 percent of taxable earnings and the self-employed paid 12.4 percent of taxable earnings. In 2011 and 2012, payroll tax rates paid by employees and the self-employed were each reduced by 2 percentage points and the General Fund reimbursed the OASDI Trust Fund for the resulting reduction in payroll tax revenues. Payroll taxes are levied on wages and net earnings from self-employment up to a specified maximum annual amount, referred to as maximum taxable earnings (\$118,500 in 2015), that increases each year with economy-wide average wages.

Legislation passed in 1984 subjected up to half of OASDI benefits to income tax and allocated the revenue to the OASDI Trust Funds. In 1993 legislation increased the potentially taxed portion of benefits to 85 percent and allocated the additional revenue to the Medicare's Hospital Insurance Trust Fund.

Medicare

The Medicare Program, created in 1965, has two separate trust funds: the Hospital Insurance (HI) Trust Fund (otherwise known as Medicare Part A) and the Supplementary Medical Insurance (SMI) Trust Funds (which consists of the Medicare Part B and Part D⁶ accounts). HI pays for inpatient acute hospital services and major alternatives to hospitals (skilled nursing services, for example). SMI pays for hospital outpatient services, physician services, and assorted other services and products through the Part B account and for prescription drugs through the Part D account.

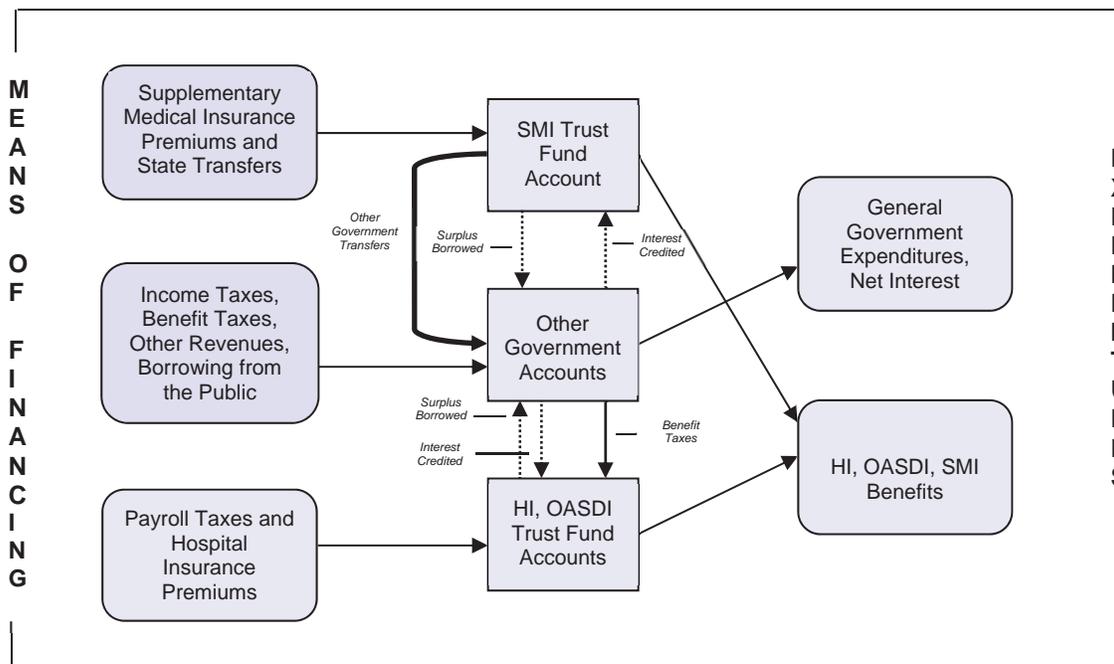
Though the events that trigger benefit payments are similar, HI and SMI have different dedicated financing structures. Similar to OASDI, HI is financed primarily by payroll contributions. Currently, employers and employees each pay 1.45 percent of earnings, while self-employed workers pay 2.9 percent of their net earnings. Beginning in 2013, employees and self-employed individuals with earnings above certain thresholds pay an additional HI tax of 0.9 percent on earnings above those thresholds. Other income to the HI Trust Fund includes a small amount of premium income from voluntary enrollees, a portion of the federal income taxes that beneficiaries pay on Social Security benefits (as explained above), and interest credited on Treasury securities held in the HI Trust Fund. As is explained in the next section, these Treasury securities and

⁶ Medicare legislation in 2003 created the new Part D account in the SMI Trust Fund to track the finances of a new prescription drug benefit that began in 2006. As in the case of Medicare Part B, approximately three-quarters of revenues to the Part D account will come from future transfers from the General Fund. Consequently, the nature of the relationship between the SMI Trust Fund and the Federal Budget described below is largely unaffected by the presence of the Part D account though the magnitude will be greater.

related interest have no effect on the consolidated statement of governmentwide finances.

For SMI, direct transfers from the General Fund financed 75 percent of 2015 program costs for both Parts B and D. Premiums paid by beneficiaries and, for Part D state transfers, generally financed the remainder of expenditures. For beneficiaries dually eligible for Medicare and Medicaid, states must pay the Part D account a portion of their estimated foregone drug costs for this population (referred to as state transfers). As with HI, interest received on Treasury securities held in the SMI Trust Fund is credited to the fund. These Treasury securities and related interest have no effect on the consolidated statement of governmentwide finances. See Note 23—Social Insurance, for additional information on Medicare program financing.

Figure 1
Social Security, Medicare, and Governmentwide Finances



Social Security, Medicare, and Governmentwide Finances

The current and future financial status of the separate OASDI, HI, and SMI Trust Funds is the focus of the Social Security and Medicare Trustees' Reports, a focus that may appropriately be referred to as the "trust fund perspective." In contrast, the Government primarily uses the *unified budget* concept as the framework for budgetary analysis and presentation. It represents a comprehensive display of all federal activities, regardless of fund type or on- and off-budget status, and has a broader focus than the trust fund perspective that may appropriately be referred to as the "budget perspective" or the "governmentwide perspective." Social Security and Medicare are among the largest expenditure categories of the U.S. federal budget. Together, they now account for more than a third of all federal spending and the percentage is projected to rise dramatically for the reasons discussed below. This section describes in detail the important relationship between the trust fund perspective and the governmentwide perspective.

Figure 1 is a simplified depiction of the interaction of the Social Security and Medicare Trust Funds with the rest of the federal budget.⁷ The boxes on the left show sources of funding, those in the middle represent the trust funds and other Government accounts, which include the General Fund into which that funding flows, and the boxes on the right show simplified expenditure categories. The figure is intended to illustrate how the various sources of program revenue flow through the budget to beneficiaries. The general approach is to group revenues and expenditures that are linked specifically to Social Security and/or Medicare separately from those for other government programs.

⁷ The federal unified budget encompasses all Government financing and is synonymous with a governmentwide perspective.

Each of the trust funds has its own sources and types of revenue. With the exception of General Fund transfers to SMI, each of these revenue sources represents revenue from the public that is dedicated specifically for the respective trust fund and cannot be used for other purposes. In contrast, personal and corporate income taxes as well as other revenue go into the General Fund and are drawn down for any Government program for which Congress has approved spending.⁸ The arrows from the boxes on the left represent the flow of the revenues into the trust funds and other Government accounts.

The heavy line between the top two boxes in the middle of Figure 1 represents intragovernmental transfers to the SMI Trust Fund from other Government accounts. The Medicare SMI Trust Fund is shown separately from the two Social Security Trust Funds (OASI and DI) and the Medicare HI Trust Fund to highlight the unique financing of SMI. Currently, SMI is only one of the programs that is funded through transfers from the General Fund, which is part of the other Government accounts (the SMI Part D account also receives transfers from the states). The direct transfers finance roughly three-fourths of SMI Program expenses. The transfers are automatic; their size depends on how much the program requires, not on how much revenue comes into the Treasury. If General Fund revenues become insufficient to cover both the mandated transfer to SMI and expenditures on other general Government programs, Treasury has to borrow to make up the difference. In the longer run, if transfers to SMI increase beyond growth in general revenues—and as shown in the Medicare Trustees Report and Chart 5 later in this section, they are projected to increase significantly in coming years—then Congress must either raise taxes, cut other Government spending, reduce SMI benefits, or borrow even more.

The dotted lines between the middle boxes of Figure 1 also represent intragovernmental transfers but those transfers arise in the form of “borrowing/lending” between the Government accounts. Interest credited to the trust funds arises when the excess of program income over expenses is loaned to the General Fund. The vertical lines labeled *Surplus Borrowed* represent these flows from the trust funds to the other Government accounts. These loans reduce the amount the General Fund has to borrow from the public to finance a deficit (or likewise increase the amount of debt paid off if there is a surplus). However, the General Fund has to credit interest on the loans from the trust fund programs, just as if it borrowed the money from the public. The credits lead to future obligations for the General Fund (which is part of the other Government accounts). These transactions are indicated in Figure 1 by the vertical arrows labeled *Interest Credited*. The credits increase trust fund income exactly as much as they increase credits (future obligations) in the General Fund. From the governmentwide standpoint, at least in an accounting sense, these interest credits are a wash.

When the trust funds get the receipts that they loan to the General Fund, these receipts provide additional authority to spend on benefits and other program expenses. The General Fund, in turn, has taken on the obligation of paying interest on these loans every year and repaying the principal when trust fund income from other sources falls below expenditures.

How loans from the trust funds to the General Fund and later repayments of those loans affect tax income and expenditures of the General Fund is uncertain. Two extreme cases encompass the possibilities. At one extreme, each dollar the trust funds loan to the General Fund might reduce borrowing from the public by a dollar at the time the loan is extended, in which case the General Fund could repay all trust fund loans by borrowing from the public without raising the level of public debt above the level that would have occurred in the absence of the loans. At the other extreme, each dollar the trust funds loan to the General Fund might result in some combination of higher General Fund spending and lower General Fund revenues amounting to one dollar at the time the loans are extended, in which case General Fund loan repayments to the trust funds might initially be financed with borrowing from the public but must at some point be financed with a combination of higher General Fund taxes and lower General Fund spending than would have occurred in the absence of the loans. In this latter extreme, trust fund loans result in additional largess (i.e., higher spending and/or lower taxes) in General Fund programs at the time the loans are extended, but ultimately that additional largess is financed with additional austerity (i.e., lower spending and/or higher taxes) in General Fund programs at later dates. The actual impact of trust fund loans to the General Fund and their repayment on General Fund programs is at one of these two extremes or somewhere in between.

Actual dollar amounts roughly corresponding to the flows presented in Figure 1 are shown in Table 1 for fiscal year 2015. In Table 1, revenues from the public (left side of Figure 1) and expenditures to the public (right side of Figure 1) are shown separately from transfers between Government accounts (middle of Figure 1). Note that the transfers (\$264.8 billion) and interest credits (\$107.1 billion) received by the trust funds appear as negative entries under “All Other” and are thus offsetting when summed for the total budget column. These two intragovernmental transfers are the key to the differences between the trust fund and budget perspectives.

From the governmentwide perspective, only revenues received from the public (and states in the case of Medicare, Part D) and expenditures made to the public are important for the final balance. Trust fund revenue from the public consists of

⁸ Other programs also have dedicated revenues in the form of taxes and fees (and other forms of receipt) and there are a large number of dedicated trust funds in the federal budget. Total trust fund receipts account for about 40 percent of total Government receipts with the Social Security and Medicare Trust Funds accounting for about two-thirds of trust fund receipts. For further discussion, see the report issued by the Government Accountability Office, *Federal Trust and Other Earmarked Funds*, GAO-01-199SP, January 2001. In the figure and the discussion that follows, all other programs, including these other dedicated trust fund programs, are grouped under “Other Government Accounts” to simplify the description and maintain the focus on Social Security and Medicare.

payroll taxes, benefit taxes, and premiums. For HI, the difference between total expenditures made to the public (\$278.7 billion) and revenues (\$262.7 billion) was \$16.0 billion in 2015, indicating that HI had a relatively small negative effect on the overall budget outcome *in that year*. For the SMI account, revenues from the public (premiums) were relatively small, representing about 25 percent of total expenditures made to the public in 2015. The difference (\$267.9 billion) resulted in a net draw on the overall budget balance in that year. For OASDI, the difference between total expenditures made to the public (\$887.7 billion) and revenues from the public (\$817.1 billion) was \$70.6 billion in 2015, indicating that OASDI had a negative effect on the overall budget outcome in that year. Combined OASDI payroll and benefit tax revenues were increased by \$40.1 billion in fiscal year 2015.

The trust fund perspective is captured in the bottom section of each of the three trust fund columns. For HI, total expenditures exceeded total revenues by \$6.4 billion in 2015, as shown at the bottom of the first column. This cash deficit was made up by calling in past loans made to the General Fund (i.e., by redeeming trust fund assets). For SMI, total expenditures exceeded total revenues by \$1.9 billion. The total revenue for SMI is \$357.5 billion (\$91.5 + \$266.0), which includes \$266.0 billion transferred from other Government accounts (General Fund). Transfers to the SMI Program from other Government accounts (the General Fund), amounting to about 73.3 percent of program costs, are obligated under current law and, therefore, appropriately viewed as revenue from the trust fund perspective. For OASDI, total revenues of \$913.4 billion (\$817.1 + \$96.3) exceeded total expenditures of \$887.7 billion by \$25.7 billion. Total revenues for OASDI included \$96.3 billion in transfers from the General Fund, made up of interest credits of \$96.0 billion and transfers of \$0.3 billion called for by Public Laws 111-147, 111-312, 112-78, and 112-96 to make up for the reduction in payroll tax revenues attributable to the temporary payroll tax rate reductions.

Table 1
Revenues and Expenditures for Medicare and Social Security Trust Funds and the Total Federal Budget for the Fiscal Year ended September 30, 2015

(In billions of dollars)	Trust Funds					Total ¹
	HI	SMI	OASDI	Total	All Other	
Payroll taxes and other public revenues:						
Payroll and benefit taxes.....	257.9	-	817.1	1,075.0	-	1,075.0
Premiums	4.8	79.7	-	84.5	-	84.5
Other taxes and fees	-	11.8	-	11.8	2,077.4	2,089.2
Total	262.7	91.5	817.1	1,171.3	2,077.4	3,248.7
Total expenditures to the public ²	278.7	359.4	887.7	1,525.8	2,161.8	3,687.6
Net results for budget perspective³	(16.0)	(267.9)	(70.6)	(354.5)	(84.4)	(438.9)
Revenues from other Government accounts:						
Transfers	1.0	263.5	0.3	264.8	(264.8)	
Interest credits	8.6	2.5	96.0	107.1	(107.1)	
Total	9.6	266.0	96.3	371.9	(371.9)	
Net results for trust fund perspective³	(6.4)	(1.9)	25.7	17.4	N/A	N/A

¹ This column is the sum of the preceding two columns and shows data for the total federal budget. The figure \$438.9 was the total federal deficit in fiscal year 2015.

² The OASDI figure includes \$4.7 billion transferred to the Railroad Retirement Board for benefit payments and is therefore an expenditure to the public.

³ Net results are computed as revenues less expenditures.

Notes: Amounts may not add due to rounding.

"N/A" indicates not applicable.

Cash Flow Projections

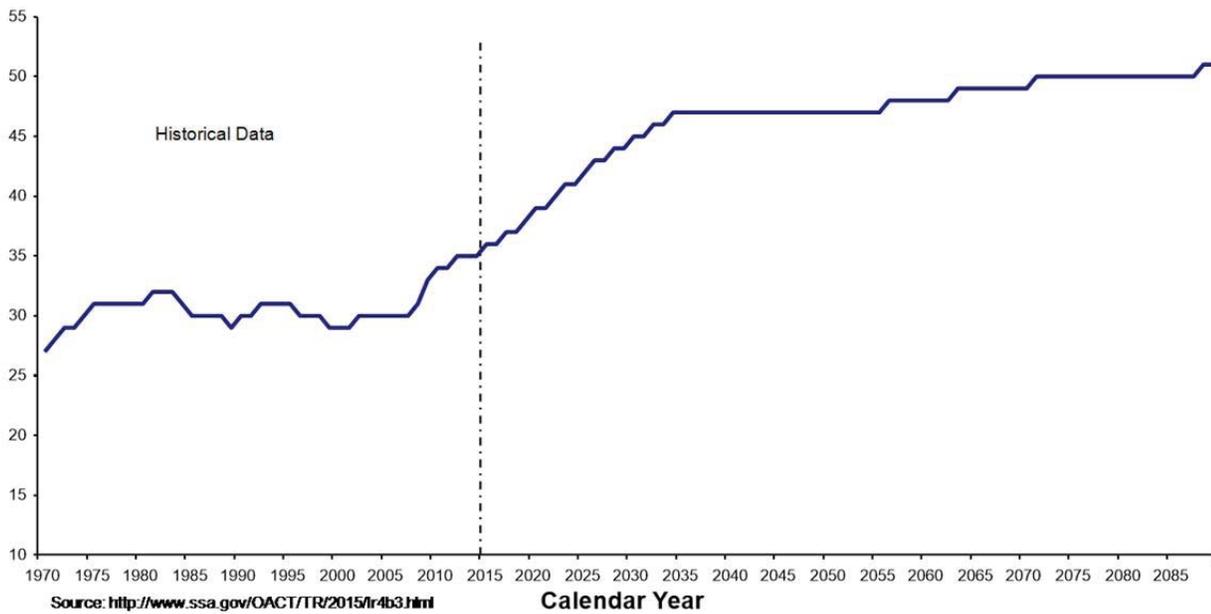
Background

Economic and Demographic Assumptions. The Boards of Trustees⁹ of the OASDI and Medicare Trust Funds provide in their annual reports to Congress short-range (10-year) and long-range (75-year) actuarial estimates of each trust fund. Because of the inherent uncertainty in estimates for 75 years into the future, the Boards use three alternative sets of economic and demographic assumptions to show a range of possibilities. The economic and demographic assumptions used for the most recent set of intermediate projections for Social Security and Medicare are shown in the “Social Security” and “Medicare” sections of Note 23—Social Insurance.

⁹ There are six trustees: the Secretaries of the Treasury (managing trustee), Health and Human Services, and Labor; the Commissioner of the Social Security Administration; and two public trustees who are appointed by the President and confirmed by the Senate for a 4-year term. By law, the public trustees cannot both be members of the same political party.

Beneficiary-to-Worker Ratio. The expenditure projections for both the OASDI and Medicare Programs reflect the aging of the large baby-boom generation, born in the years 1946 to 1964, and its ultimate passing. Chart 1 shows that the number of OASDI beneficiaries per 100 covered workers is projected to grow rapidly from 36 in 2015 to 47 in 2035 as the baby boom generation enters their retirement years and receives benefits. After 2035 the baby boom's influence will have dissipated, and it is projected that the beneficiary-worker ratio will continue to rise but at a slower pace due to increasing longevity, reaching 51 beneficiaries per 100 workers by 2090. (In rough terms, the beneficiary-to-worker ratio at any point in time reflects the birth rates experienced by the generations who are retired; the birth rates of the baby boom generations' parents were much higher than those of the baby boomer generations and the generations to follow them.) A similar demographic pattern confronts the Medicare Program.

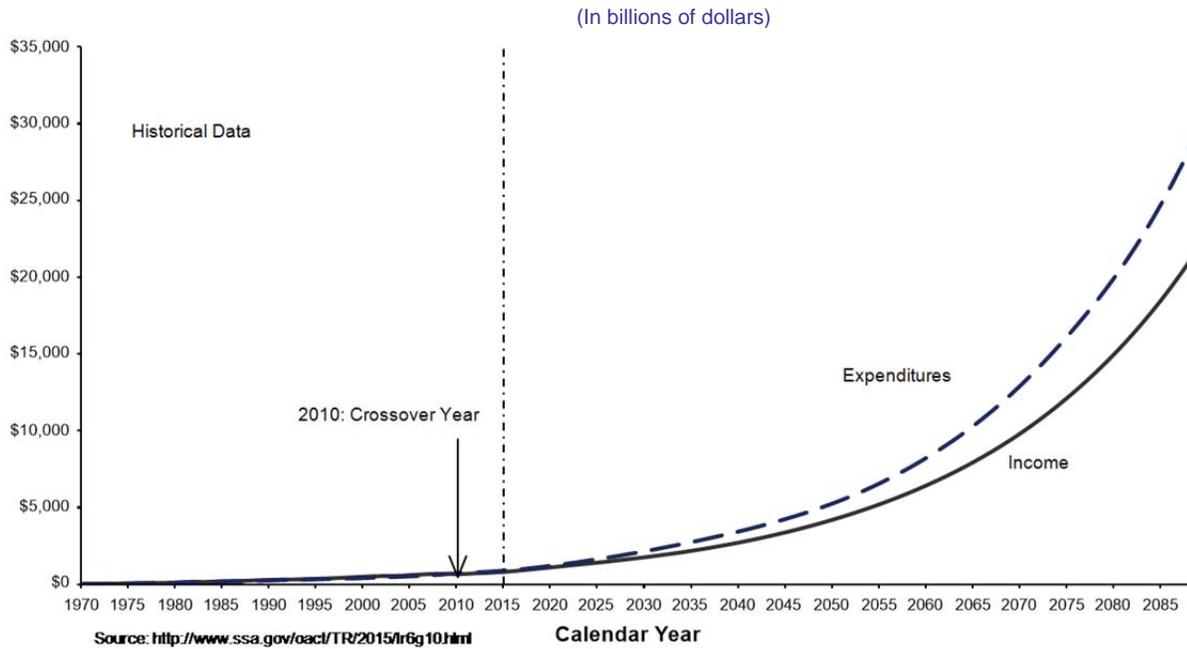
**Chart 1—OASDI Beneficiaries per 100 Covered Workers
1970-2089**



Social Security Projections

Income and Expenditures. Chart 2 shows historical values and actuarial estimates of combined OASDI annual noninterest income and expenditures for 1970-2089. The estimates are for the open-group population of all workers and beneficiaries projected to be alive in each year. The expenditure projections in Chart 2 and all subsequent charts assume all scheduled benefits are paid regardless of whether the income and assets are available to finance them.

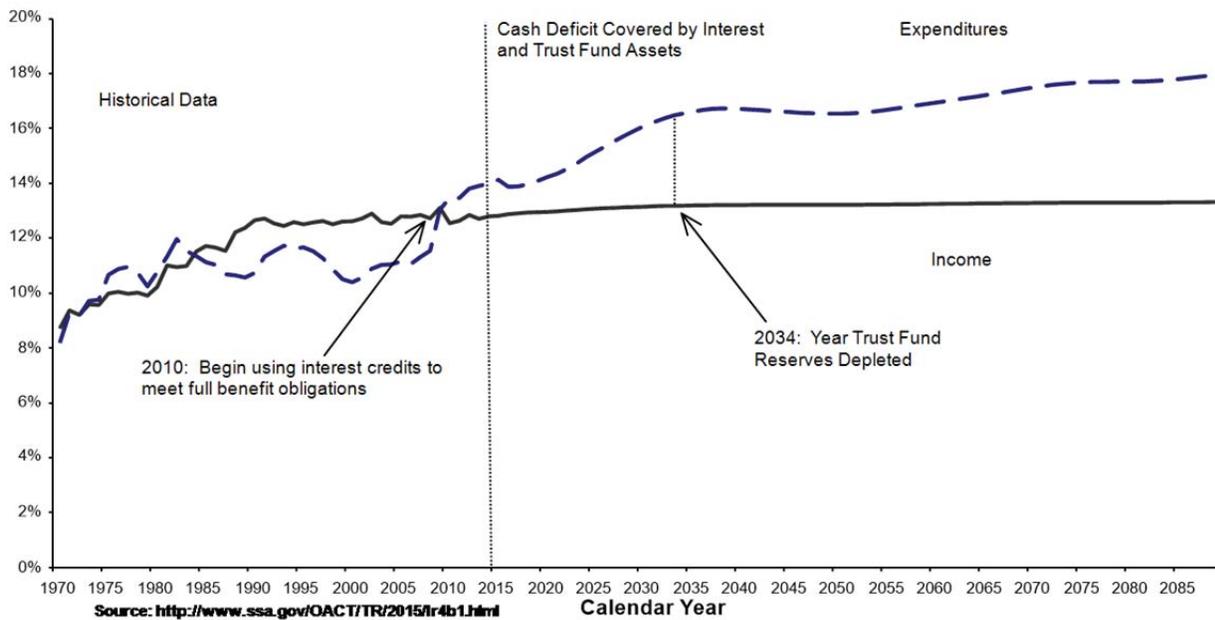
**Chart 2—OASDI Income (Excluding Interest) and Expenditures
1970-2089**



Social Security’s surplus of noninterest income over expenditures was positive every year between 1984 and 2009, became negative in 2010, and is projected to grow ever more negative over the next 75 years. This pattern reflects the aging of the population documented in Chart 1, as well as growth of the economy and growth in the price level. As described above, surpluses that occurred prior to 2010 were “loaned” to the General Fund and accumulated, with interest, increasing reserve spending authority for the trust fund. The reserve spending authority represents an obligation for the General Fund.

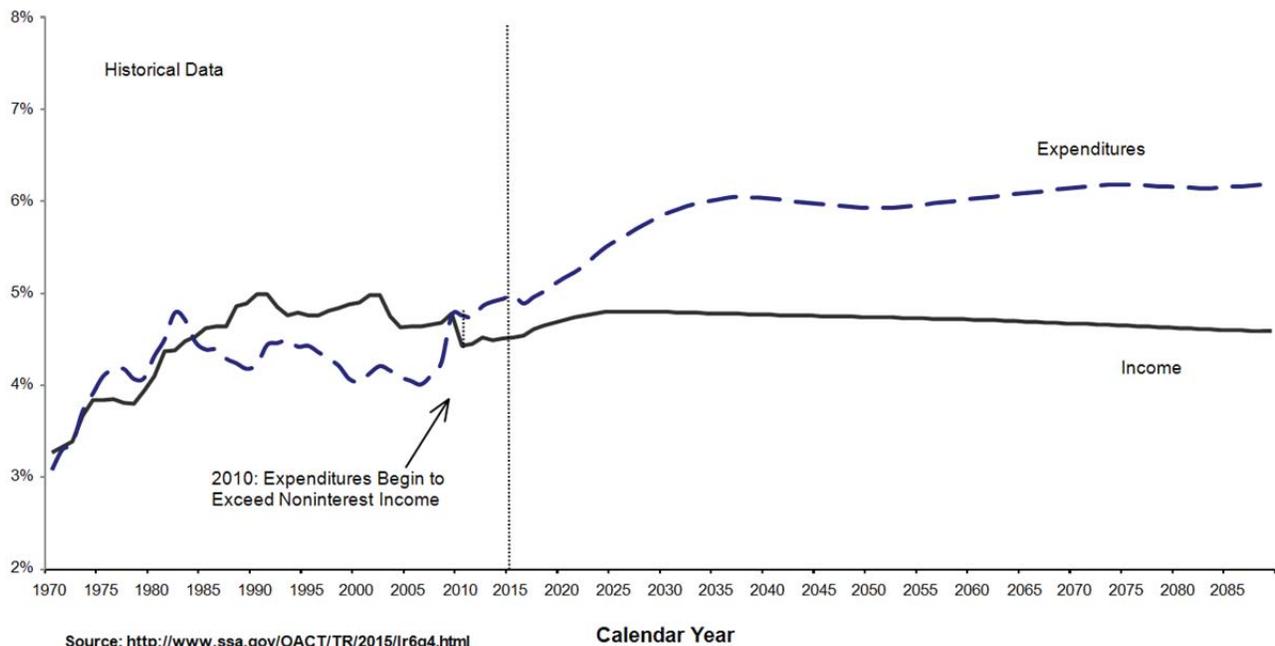
Income and Expenditures as a Percent of Taxable Payroll. Chart 3 shows annual noninterest income and expenditures expressed as percentages of taxable payroll, commonly referred to as the income rate and cost rate, respectively. Dividing noninterest income and expenditures by taxable payroll serves to isolate the effect of demographics on Social Security finances, and usefully gauges Social Security's financial imbalances against the size of the Social Security tax base. The time path of the cost rate in Chart 3 closely parallels that of the beneficiary-to-worker ratio in Chart 1. Social Security began using interest credits to meet full benefit obligations in 2010, and is projected to begin drawing down trust fund asset reserves starting in 2020 and to deplete those reserves in 2034. After trust fund asset reserves are depleted, noninterest income will continue to flow into the fund and will be sufficient to finance 79 percent of scheduled benefits in 2034 and 73 percent of scheduled benefits in 2089.

**Chart 3—OASDI Income (Excluding Interest) and Expenditures
as a Percent of Taxable Payroll
1970-2089**



Income and Expenditures as a Percent of GDP. Chart 4 shows estimated annual noninterest income and expenditures, expressed as percentages of GDP, which is the total value of goods and services produced in the United States. This alternative perspective shows the size of the OASDI Program in relation to the capacity of the national economy to sustain it. The gap between expenditures and income generally widens with expenditures generally growing as a share of GDP and income declining slightly relative to GDP. The cost of the program (based on current law) rises rapidly to 5.9 percent of GDP in 2030, hits a peak of 6.0 percent of GDP in 2037, declines to 5.9 percent by 2050, and generally increases to 6.2 percent of GDP by 2089. The rapid increase from 2016 to 2030 is projected to occur as baby boomers become eligible for OASDI benefits, lower birth rates result in fewer workers per beneficiary, and beneficiaries continue to live longer. In 2089, expenditures are projected to exceed income by 1.60 percent of GDP.

Chart 4—OASDI Income (Excluding Interest) and Expenditures as a Percent of GDP 1970-2089



Sensitivity Analysis. Actual future income from OASDI payroll taxes and other sources and actual future expenditures for scheduled benefits and administrative expenses will depend upon a large number of factors: the size and composition of the population that is receiving benefits, the level of monthly benefit amounts, the size and characteristics of the work force covered under OASDI, and the level of workers' earnings. These factors will depend, in turn, upon future marriage and divorce rates, birth rates, death rates, migration rates, labor force participation and unemployment rates, disability incidence and termination rates, retirement age patterns, productivity gains, wage increases, cost-of-living increases, and many other economic as well as demographic factors.

This section presents estimates that illustrate the sensitivity of long-range expenditures and income for the OASDI Program to changes in *selected individual assumptions*. In this analysis, the intermediate assumption is used as the reference point, and one assumption at a time is varied. The variation used for each individual assumption reflects the levels used for that assumption in the low-cost (Alternative I) and high-cost (Alternative III) projections. For example, when analyzing sensitivity with respect to variation in real wages, income, and expenditure projections using the intermediate assumptions are compared to the outcome when projections are done by changing only the real wage assumption to either low-cost or high-cost alternatives.

The low-cost alternative is characterized by assumptions that improve the financial status of the program (relative to the intermediate assumption) such as slower improvement in mortality (beneficiaries die younger). In contrast, assumptions under the high-cost alternative worsen the financial outlook.

Table 2 shows the effects of changing individual assumptions on the present value of estimated OASDI expenditures in excess of income (the *shortfall* of income relative to expenditures in present value terms). The assumptions are shown in parentheses. For example, the intermediate assumption for the annual rate of *reduction in age-sex-adjusted death rates* is 0.78 percent. For the low-cost alternative, a slower reduction rate (0.41 percent) is assumed as it means that beneficiaries die at a younger age relative to the intermediate assumption, resulting in lower expenditures. Under the low-cost assumption, the shortfall drops from \$13,440 billion to \$11,467 billion, a 15 percent smaller shortfall. The high-cost death rate assumption (1.18 percent) results in an increase in the shortfall, from \$13,440 billion to \$15,511 billion, a 15 percent increase in the shortfall. Clearly, alternative death rate assumptions have a substantial impact on estimated future cash flows in the OASDI Program.

A higher fertility rate means more workers relative to beneficiaries over the projection period, thereby lowering the shortfall relative to the intermediate assumption. An increase in the rate from 2.0 to 2.2 percent results in a 9 percent smaller shortfall (i.e., expenditures less income), from \$13,440 billion to \$12,234 billion.

Higher real wage growth results in faster income growth relative to expenditure growth. Table 2 shows that a real wage differential that is 0.63 percentage points greater than the intermediate assumption of 1.17 causes the shortfall to drop from \$13,440 billion to \$10,457 billion, a 22 percent decline. Decreasing the real wage differential by 0.62 percentage points results in a 15 percent increase in the shortfall from \$13,440 billion to \$15,419 billion.

The CPI change assumption operates in a somewhat counterintuitive manner, as seen in Table 2. A higher rate of change results in a lower shortfall. This arises as a consequence of holding the real wage assumption constant while varying the CPI so that wages (the income base) are affected sooner than benefits. If the rate is assumed to be 3.4 percent rather than 2.7 percent, the shortfall decreases about 4 percent, from \$13,440 billion to \$12,930 billion.

The effect of net immigration is similar to fertility in that, over the 75-year projection period, higher immigration results in proportionately more workers (taxpayers) than beneficiaries. The low-cost assumption for net immigration results in a 4 percent drop in the shortfall, from \$13,440 billion to \$12,839 billion, relative to the intermediate case; and the high-cost assumption results in a 5 percent higher shortfall.

Finally, Table 2 shows the sensitivity of the shortfall to variations in the real interest rate or, in present value terminology, the sensitivity to alternative discount rates assuming a higher discount rate results in a lower present value. The shortfall is 15 percent lower, decreasing from \$13,440 billion to \$11,460 billion, when the real interest rate is 3.4 percent rather than 2.9 percent. The shortfall is 18 percent higher, increasing to \$15,921 billion, when the real interest rate is 2.4 percent rather than 2.9 percent.

Table 2
Present Values of Estimated OASDI Expenditures in Excess of Income
Under Various Assumptions, 2015-2089

(Dollar values in billions; values of assumptions shown in parentheses)

Assumption	Financing		
	Low	Intermediate	High
Average annual reduction in death rates	11,467 (0.41)	13,440 (0.78)	15,511 (1.18)
Total fertility rate	12,234 (2.2)	13,440 (2.0)	14,514 (1.8)
Real wage differential	10,457 (1.80)	13,440 (1.17)	15,419 (0.55)
CPI change	12,930 (3.4)	13,440 (2.7)	13,948 (2.0)
Net immigration	12,839 (1,465,000) ¹	13,440 (1,155,000) ¹	14,082 (850,000) ¹
Real interest rate	11,460 (3.4)	13,440 (2.9)	15,921 (2.4)

¹ Amounts represent the average annual net immigration over the 75-year projection period.

Source: 2015 OASDI Trustees Report and SSA.

Medicare Projections

Medicare Legislation. The *Affordable Care Act as amended by the Health Care and Education Reconciliation Act of 2010* (the “Affordable Care Act” or ACA) significantly improves projected Medicare finances. The most important cost saving provision in the ACA is a revision in payment rate updates for Parts A and B services other than for physicians’ services. Relative to payment rates made under prior law that were generally based on the rate at which prices for inputs used to provide Medicare services increase, the ACA reduces those payment rate updates by the rate at which productive efficiency in the overall economy increases, which is projected to average 1.1 percent per year over the long range. The ACA also achieves substantial cost savings by benchmarking payment rates for private health plans providing Parts A and B services (Part C or Medicare Advantage) to more closely match per beneficiary costs. Partly offsetting these changes was an increase in prescription drug coverage. In addition, the ACA increases Part A revenues by: (a) taxing high-cost employer-provided health care plans and thereby giving employers incentives to increase the share of compensation paid as taxable earnings, and (b) imposing a new 0.9 percent surtax on earnings in excess of \$200,000 (individual tax return filers) or \$250,000 (joint tax return filers) starting in 2013.

The ACA substantially reduces the Medicare cost projections. Growth in Medicare cost per beneficiary in excess of growth in per capita GDP is referred to as “excess cost growth.” In the 2009 *Financial Report*, the last report released prior to the passage of the ACA, excess cost growth was assumed to average one percentage point over the last 50 years of the 75-year projection period—that is, Medicare expenditures per beneficiary were assumed to grow, on average, about one percentage point faster than per capita GDP over the long range. That assumption for excess cost growth in Medicare was

optimistic in the sense that it is smaller than in recent history; excess cost growth averaged 1.2 percentage points between 1990 and 2013.¹⁰ In this year's *Financial Report*, as in the 2013 and 2014 reports, long-term excess cost growth is essentially zero. As a result, the long term projected Medicare spending share of GDP in this *Financial Report* is driven primarily by the same demographic trends that drive the OASDI spending share of GDP.

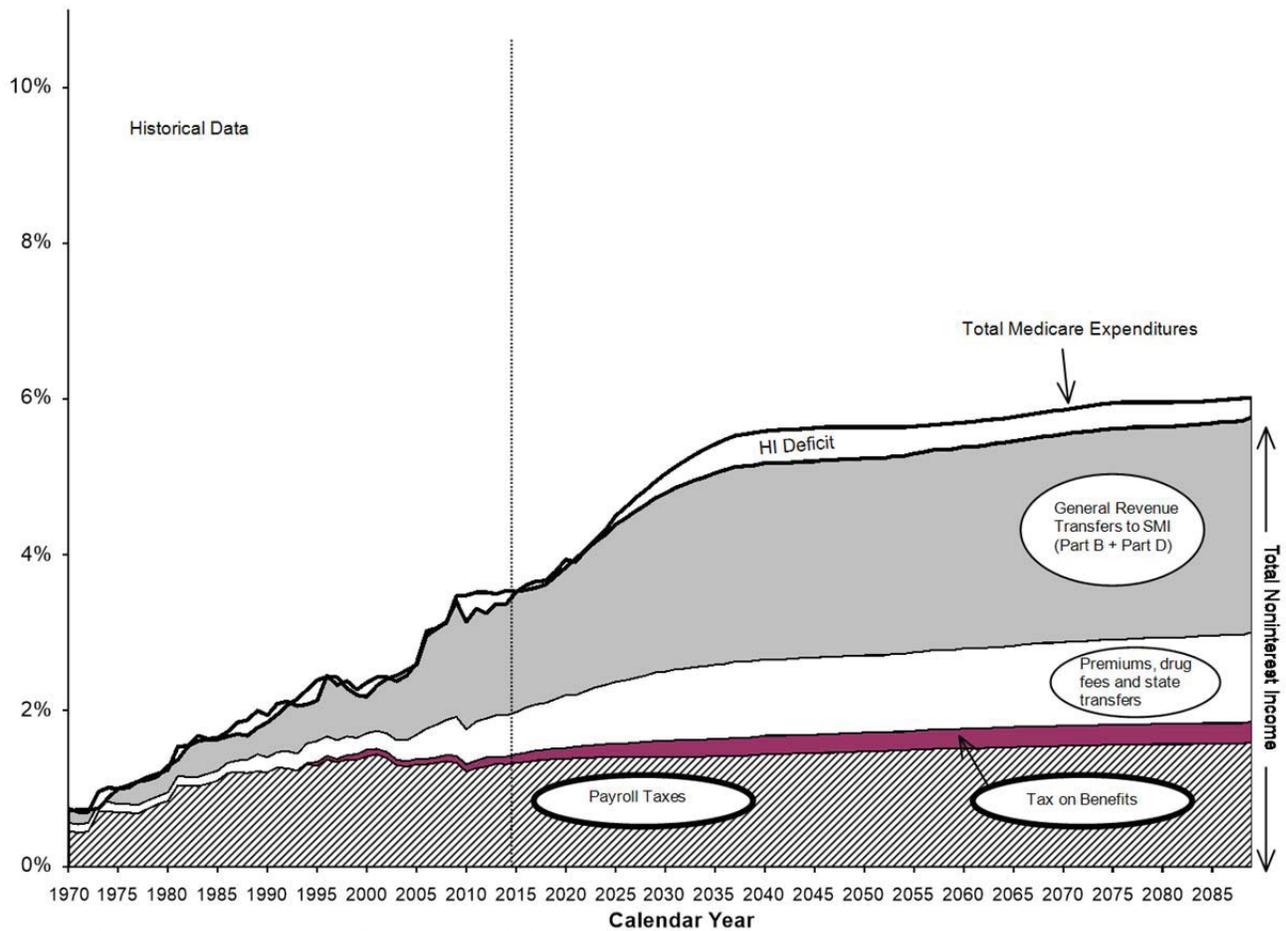
The 2015 Medicare Trustees' Report warns that the financial projections for the Medicare program reflect substantial, but very uncertain, cost savings deriving from provisions of the ACA and MACRA that lower increases in Medicare payment rates to most categories of health care providers. Without fundamental change in the current delivery system, these adjustments would probably not be viable indefinitely. In view of these issues with provider payment rates, actual future costs for Medicare could exceed those shown by the current-law projections that underlie both the Trustees' Report and this *Financial Report*.

Changes in Projection Methods. For 2015 the basis for the projections has changed since last year due to the enactment of the Medicare Access and CHIP Reauthorization Act (MACRA) of 2015. This law repealed the sustainable growth rate SGR formula that set physician fee schedule payments, which were usually modified. In the 2014 report, the income, expenditures, and assets for Part B reflected the *projected baseline* scenario, which assumed an override of the SGR payment provisions and an increase in the physician fee schedule equal to the average of the most recent 10 years of SGR overrides (through March 2015), or 0.6 percent. Since the new legislation has replaced the SGR system with specified payment updates for physicians, the projections in this year's report, with one exception related to Part A, are based on current law; that is, it is assumed that laws on the books will be implemented and adhered to with respect to scheduled taxes, premium revenues, and payments to providers and health plans. The one exception is that the projections disregard payment reductions that would result from the projected depletion of the Medicare Hospital Insurance (HI) Trust Fund. Under current law, payments would be reduced to levels that could be covered by incoming tax and premium revenues when the HI Trust Fund was depleted.

¹⁰ Congressional Budget Office, the Long-Term Budget Outlook, June 2015.

Total Medicare. Chart 5 shows expenditures and current-law noninterest revenue sources for HI and SMI combined as a percentage of GDP. The total expenditure line shows Medicare costs rising to 6.02 percent of GDP by 2089. Revenues from taxes and premiums (including state transfers under Part D) are expected to increase from 1.98 percent of GDP in 2015 to 3.01 percent of GDP in 2089. Payroll tax income increases gradually as a percent of GDP because the new tax on earnings in excess of \$250,000 for joint tax return filers and \$200,000 for individual tax return filers applies to an increasing share of earnings because the \$250,000 and \$200,000 thresholds are not indexed for price changes. Premiums combined for Parts B and D of SMI are approximately fixed as a share of Parts B and D costs, so they also increase as a percent of GDP. General revenue contributions for SMI, as determined by current law, are projected to rise as a percent of GDP from 1.54 percent to 2.76 percent over the same period. Thus, revenues from taxes and premiums (including state transfers) will fall as a share of total noninterest Medicare income (from 56 percent in 2015 to 52 percent in 2089) while general revenues will rise (from 44 percent to 48 percent). The gap between total noninterest Medicare income (including general revenue contributions) and expenditures is expected to increase steadily beginning in about 2022, reaching roughly 0.25 percent of GDP by 2089.

Chart 5—Total Medicare (HI and SMI) Expenditures and Noninterest Income as a Percent of GDP 1970-2089

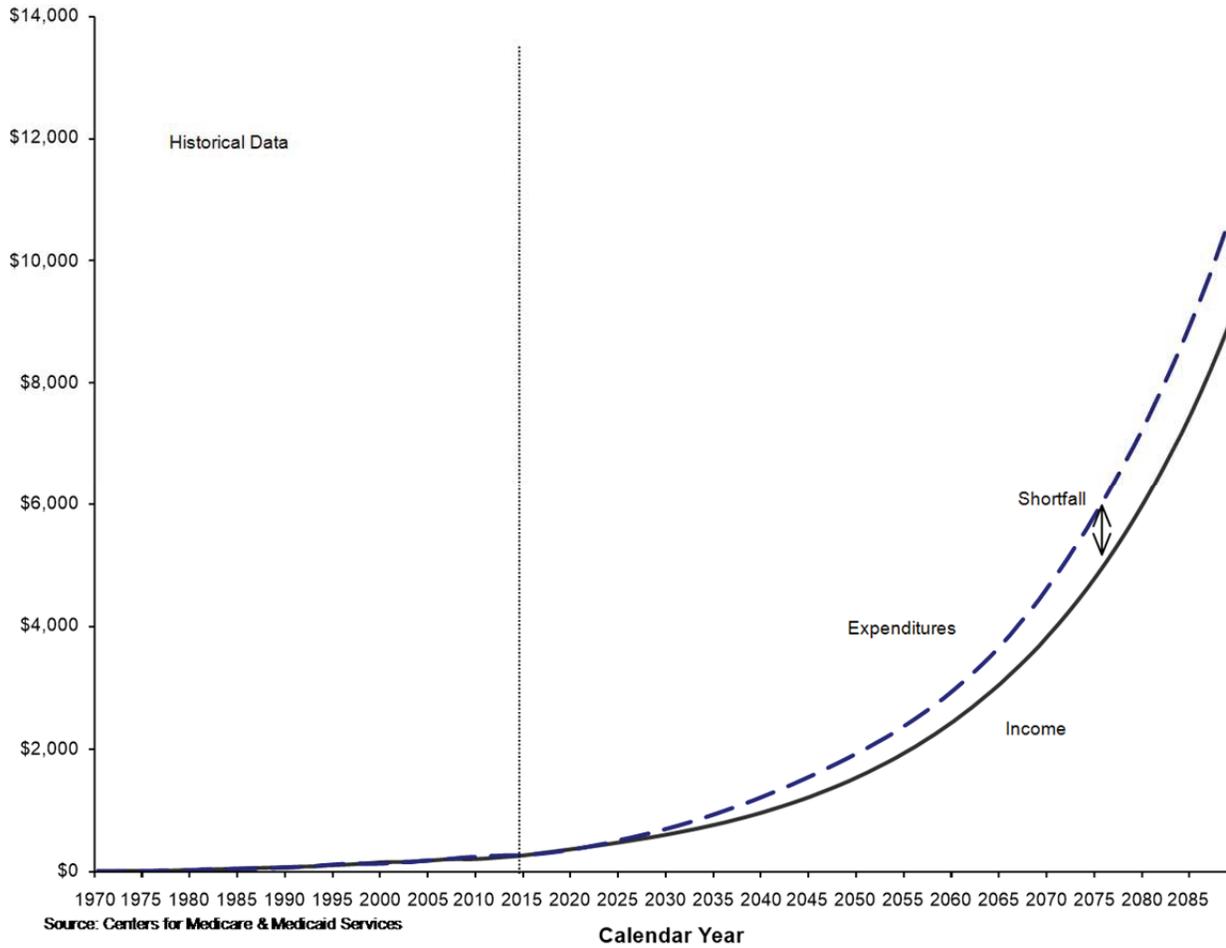


Source: http://www.ssa.gov/OACT/TRSUM/images/LD_ChartC.html

Medicare, Part A (Hospital Insurance)— Income and Expenditures. Chart 6 shows historical and actuarial estimates of HI annual income (excluding interest) and expenditures for 1970-2089 in nominal dollars. The estimates are for the open-group population.

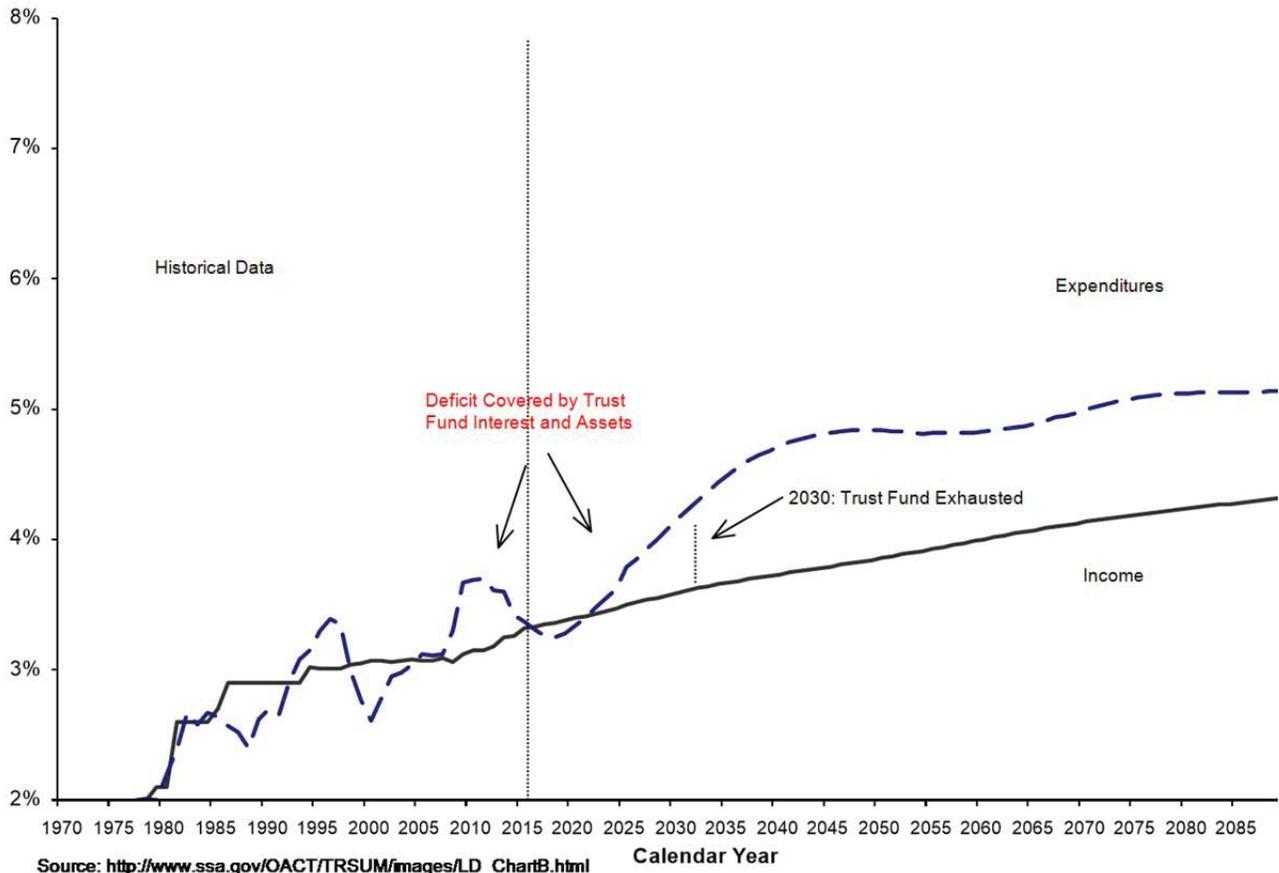
**Chart 6—Medicare Part A Income (Excluding Interest) and Expenditures
1970-2089**

(In billions of dollars)



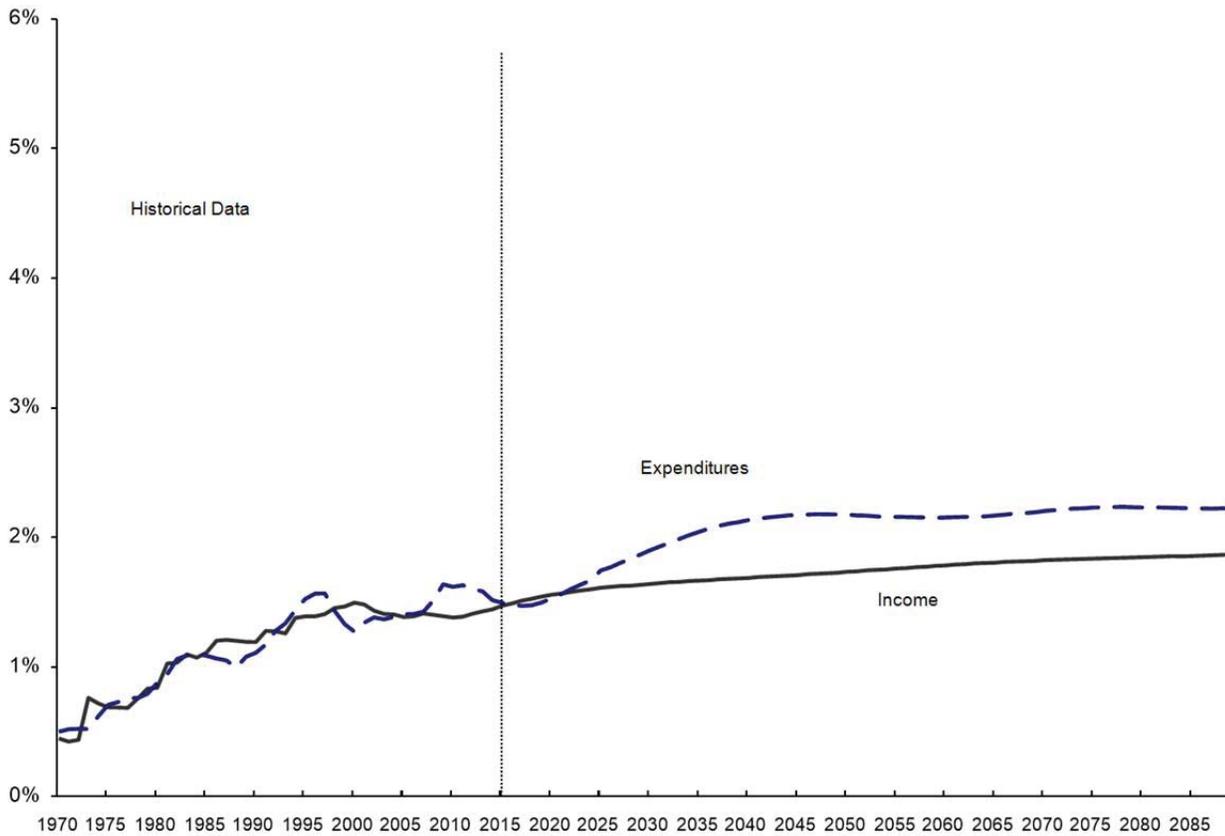
Medicare, Part A Income and Expenditures as a Percent of Taxable Payroll. Chart 7 illustrates income (excluding interest) and expenditures as a percentage of taxable payroll over the next 75 years. The chart shows that beginning in 2022, the expenditure rate exceeds the income rate, and cash deficits continue thereafter. The cost rate declined from 2012 through 2014 and is projected to continue to decline through 2018, largely due to expenditure growth that was constrained in part by the sequester and low payment updates, as well as a rebound of taxable payroll growth from recession levels. Subsequent to 2018, the cost rate is projected to rise primarily due to retirements of those in the baby boom generation and partly due to a projected return to modest health services cost growth. This cost rate increase is moderated by the accumulating effect of the productivity adjustments to provider price updates, which are estimated to reduce annual HI per capita cost growth by an average 1.0 percent per year through 2024 and 1.1 percent per year thereafter. Trust fund interest earnings and assets provide enough resources to pay full benefit payments until 2030 with general revenues used to finance interest and loan repayments to make up the difference between cash income and expenditures during that period. Pressures on the federal budget will thus emerge well before 2030. Present tax rates would be sufficient to pay 86 percent of scheduled benefits after trust fund exhaustion in 2030 and 84 percent of scheduled benefits in 2089.

Chart 7—Medicare Part A Income (Excluding Interest) and Expenditures as a Percent of Taxable Payroll 1970-2089



Medicare, Part A Income and Expenditures as a Percent of GDP. Chart 8 shows estimated annual noninterest income and expenditures, expressed as percentages of GDP, the total value of goods and services produced in the United States. This alternative perspective shows the size of the HI Program in relation to the capacity of the national economy to sustain it. Medicare Part A's expenditures as a percentage of GDP are expected to increase steadily until about 2045, and then remain fairly level throughout the rest of the 75-year period, as the accumulated effects of the price update reductions are realized. The gap between expenditure and income shares of GDP widens to 0.45 percent in 2042, remains fairly stable through 2047, and then commences a slight decline, reaching 0.35 percent of GDP in 2089.

**Chart 8—Medicare Part A Income (Excluding Interest) and Expenditures
as a Percent of GDP
1970-2089**



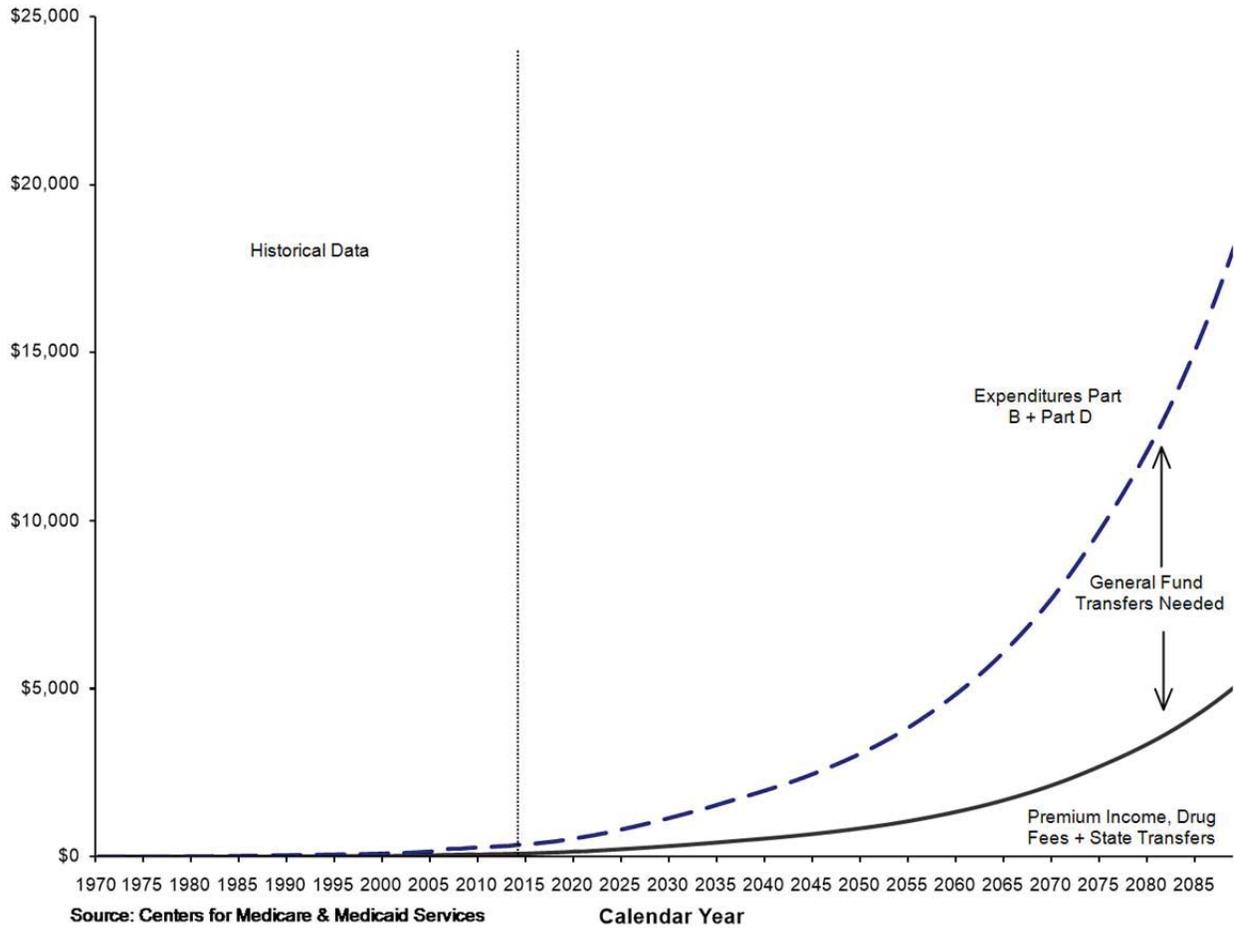
Source
http://www.ssa.gov/OACT/TRSUM/images/LD_ChartB.html

Calendar Year

Medicare, Parts B and D (Supplementary Medical Insurance). Chart 9 shows historical and actuarial estimates of Medicare Part B and Part D premiums (and Part D state transfers) as well as expenditures for each of the next 75 years, in dollars. The gap between premiums, drug fees, and state transfer revenues plus program expenditures, a gap that will need to be filled with transfers from general revenues, grows throughout the projection period.

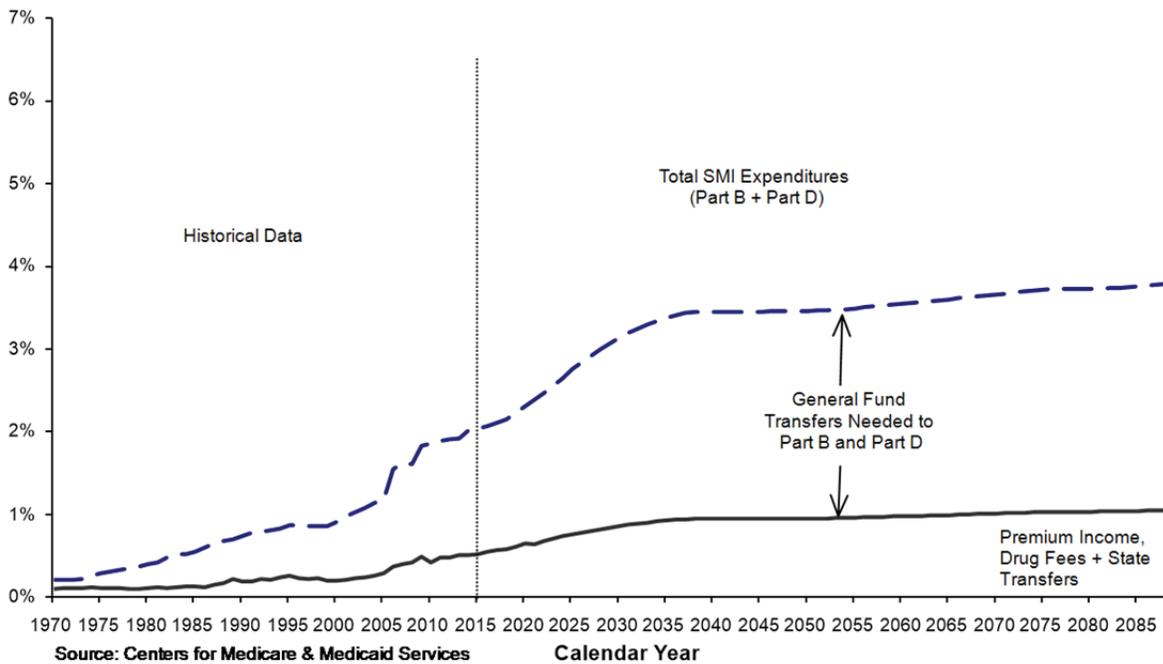
**Chart 9—Medicare Part B and Part D Premium and State Transfer Income and Expenditures
1970-2089**

(In billions of dollars)



Medicare Part B and Part D Premium as well as State Transfer Income and Expenditures as a Percent of GDP. Chart 10 shows expenditures for the Supplementary Medical Insurance Program over the next 75 years expressed as a percentage of GDP, providing a perspective on the size of the SMI Program in relation to the capacity of the national economy to sustain it. SMI costs are projected to continue to outpace growth in GDP but at a slower rate compared to the last 10 years. SMI expenditures as a share of GDP are expected to grow rapidly from 2.04 percent in 2015 to 2.65 percent in 2024, and then grow more slowly reaching 3.80 percent in 2089. The relatively high growth during the period 2015-2024 is due to the continuing retirement of the baby boom generation, further economic recovery, and modest increases in cost trends. Growth rates are projected to decline during the 2025-2039 period primarily as a result of a deceleration in beneficiary population growth. For the last 50 years of the projection period, cost growth moderates further due to the continued deceleration in beneficiary population growth and lower ultimate growth rate assumptions. As a share of GDP, premium and state transfer income grows from about 0.52 percent in 2015 to 1.05 percent of GDP in 2089. The portion of SMI expenditures financed by General Fund transfers to SMI is projected to be about 72 percent throughout the projections period.

Chart 10—Medicare Part B and Part D Premium and State Transfer Income and Expenditures as a Percent of GDP 1970-2089



Medicare Sensitivity Analysis. This section illustrates the sensitivity of long-range cost and income estimates for the Medicare Program to changes in *selected individual assumptions*. As with the OASDI analysis, the intermediate assumption is used as a reference point, and one assumption at a time is varied. The variation used for each individual assumption reflects the levels used for that assumption in the low-cost and high-cost projections (see description of sensitivity analysis for OASDI).

Table 3 shows the effects of changing various assumptions on the present value of estimated HI expenditures in excess of income (the *shortfall* of income relative to expenditures in present value terms). The assumptions are shown in parentheses. Clearly, net HI expenditures are extremely sensitive to alternative assumptions about the growth in health care cost. For the low-cost alternative, the slower growth in health costs causes the shortfall to drop from \$3,187 billion to a surplus of \$2,743 billion, a 186 percent change. The high-cost assumption results in more than tripling of the shortfall, from \$3,187 billion to \$12,594 billion.

The low and high real wage growth rate scenarios result in about a -58 and +37 percent, respectively, change in the shortfall relative to the intermediate case. Wages are a key cost factor in the provision of health care. Higher wages also result

in greater payroll tax income. CPI inflation, fertility, and net immigration changes have very little effect on net HI expenditures. (When CPI inflation is varied, the real interest rate is held constant, which implies that the nominal interest changes one for one with the assumed rate of CPI inflation.) Higher immigration decreases the net shortfall modestly as the 75-year projection period captures a higher share of additional immigrants' tax payments than it does of their benefits.

Table 3 also shows that the present value of net HI expenditures is 15 percent lower if the real interest rate is 3.4 percent rather than 2.9 percent and 18 percent higher if the real interest rate is 2.4 percent rather than 2.9 percent.

Table 3
Present Values of Estimated Medicare Part A Expenditures in Excess of Income
Under Various Assumptions, 2015-2089

(Dollar values in billions; values of assumptions shown in parentheses)

Assumption	Financing Shortfall Range		
	Low	Intermediate	High
Average annual growth in health costs	(2,743) (3.0)	3,187 (4.0)	12,594 (5.0)
Total fertility rate	2,793 (2.2)	3,187 (2.0)	3,547 (1.8)
Real wage differential	1,326 (1.8)	3,187 (1.2)	4,365 (0.6)
CPI change	2,386 (3.4)	3,187 (2.7)	4,221 (2.0)
Net immigration	2,981 (1,465,000) ⁴	3,187 (1,155,000) ⁴	3,455 (850,000) ⁴
Real interest rate	2,704 (3.4)	3,187 (2.9)	3,774 (2.4)

¹ The sensitivity of the projected HI net cash flow to variations in future mortality rates also is of interest. At this time, however, relatively little is known about the relationship between improvements in life expectancy and the associated changes in health status and per beneficiary health expenditures. As a result, it is not possible at present to prepare meaningful estimates of the Part A, mortality sensitivity.

² Annual growth rate is the aggregate cost of providing covered health care services to beneficiaries. The low-cost and high-cost alternatives assume that costs increase 1 percent slower or faster, respectively, than the intermediate assumption, relative to growth in taxable payroll.

³ The total fertility rate for any year is the average number of children who would be born to a woman in her lifetime if she were to experience the birth rates by age observed in, or assumed for, the selected year and if she were to survive the entire childbearing period.

⁴ Amount represents the average annual net immigration over the 75-year projection period.

Source: Center for Medicare & Medicaid Services.

Table 4 shows the effects of various assumptions about the growth in health care costs on the present value of estimated SMI (Medicare Parts B and D) expenditures in excess of income. As with HI, net SMI expenditures are very sensitive to changes in the health care cost growth assumption. For the low-cost alternative, the slower assumed growth in health costs reduces the governmentwide resources needed for Part B from \$17,466 billion to \$12,792 billion and in Part D from \$7,287 billion to \$5,190 billion, about a 27 percent and 29 percent difference for Part B and Part D, respectively. The high-cost assumption increases governmentwide resources needed to \$24,693 billion for Part B and to \$10,600 billion for Part D, about a 41 percent and a 45 percent difference for Part B and Part D, respectively.

Table 4
Present Values of Estimated Medicare Parts B and D Future Expenditures
Less Premium Income and State Transfers Under Three Health Care Cost
Growth Assumptions, 2015-2089

(In billions of dollars)

Medicare Program	Governmentwide Resources Needed		
	Low (3.3)	Intermediate (4.3)	High (5.3)
Part B	12,792	17,466	24,693
Part D	5,190	7,287	10,600

¹ Annual growth rate is the aggregate cost of providing covered health care services to beneficiaries. The low and high scenarios assume that costs increase one percent slower or faster, respectively, than the intermediate assumption.

Source: Centers for Medicare & Medicaid Services.

Sustainability of Social Security and Medicare

75-Year Horizon

According to the 2015 Medicare Trustees Report, the HI Trust Fund is projected to remain solvent until 2030 and, according to the 2015 Social Security Trustees Report, the OASI and DI Trust Funds are projected to have asset reserves until 2035 and the fourth quarter of 2016, respectively. The impending depletion of the DI Trust Fund was temporarily circumvented, however, by the passing of the *Bipartisan Budget Act of 2015* by Congress and the President, which reallocated a portion of the payroll tax rate from the OASI Trust Fund to the DI Trust Fund. This reallocation is expected to ensure full payment of disability benefits into 2022. In each case, some general revenues must be used to satisfy the authorization of full benefit payments until the year of trust fund depletion. This occurs when the trust fund interest income and balances accumulated during prior years are needed to pay benefits, which leads to a transfer from general revenues to the trust funds. Moreover, under current law, General Fund transfers to the SMI Trust Fund will occur into the indefinite future and will continue to grow with the growth in health care expenditures.

The potential magnitude of future financial obligations under these three social insurance programs is, therefore, important from a unified budget perspective as well as for understanding generally the growing resource demands of the programs on the economy. A common way to present future cash flows is in terms of their *present value*. This approach recognizes that a dollar paid or collected next year is worth less than a dollar today because a dollar today could be saved and earn a year's worth of interest.

Table 5 shows the magnitudes of the primary expenditures and sources of financing for the three trust funds computed on an open-group basis for the next 75 years and expressed in present values. The data are consistent with the Statements of Social Insurance included in the principal financial statements. For HI, revenues from the public are projected to fall short of total expenditures by \$3,187 billion in present value terms which is the additional amount needed in order to pay scheduled

benefits over the next 75 years.¹¹ From the trust fund perspective, the amount needed is \$2,990 billion in present value after subtracting the value of the existing trust fund balances (an asset to the trust fund account but an intragovernmental transfer to the overall budget). For SMI, revenues from the public for Part B and D combined are estimated to be \$24,753 billion less than total expenditures for the two accounts, an amount that, from a budget perspective, will be needed to keep the SMI program solvent for the next 75 years. From the trust fund perspective, however, the present values of total revenues and total expenditures for the SMI Program are roughly equal due to the annual adjustment of revenue from other Government accounts to meet program costs.¹² For OASDI, projected revenues from the public fall short of total expenditures by \$13,440 billion in present value dollars, and, from the trust fund perspective, by \$10,651 billion.

From the governmentwide perspective, the present value of the total resources needed for the Social Security and Medicare Programs over and above current-law funding sources (payroll taxes, benefit taxes, and premium payments from the public) is \$41,379 billion. From the trust fund perspective, which counts the trust funds (\$3,055 billion in present value) and the general revenue transfers to the SMI Program (\$24,753 billion in present value) as dedicated funding sources, additional resources needed to fund the programs are \$13,571 billion in present value.

Table 5
Present Values of Costs Less Revenues of 75-Year Open Group Obligations
HI, SMI, and OASDI

(In billions of dollars, as of January 1, 2015)

	HI	SMI		OASDI	Total
		Part B	Part D		
Revenues from the public:					
Taxes	17,902	-	-	55,537	73,439
Premiums, State transfers	-	6,529	2,869	-	9,398
Total	17,902	6,529	2,869	55,537	82,837
Total costs to the public.....	21,089	23,995	10,156	68,976	124,216
Net results - budget perspective*	3,187	17,466	7,287	13,440	41,379
Revenues from other Government accounts	-	17,466	7,287	-	24,753
Trust fund balances as of 1/1/2015	197	68	1	2,789	3,055
Net results - trust fund perspective*	2,990	(68)	(1)	10,651	13,571

*Net results are computed as costs less revenues and trust fund balances. Negative values are indicative of surpluses.

Note: Details may not add to totals due to rounding.

Source: 2015 OASDI and Medicare Trustees' Report

Infinite Horizon

The 75-year horizon represented in Table 5 is consistent with the primary focus of the Social Security and Medicare Trustees' Reports. For the OASDI Program, for example, an additional \$13.4 trillion in present value will be needed above currently scheduled taxes to pay for scheduled benefits (\$10.7 trillion from the trust fund perspective). Yet, a 75-year projection can be a misleading indicator of all future financial flows. For example, when calculating unfunded obligations, a 75-year horizon includes revenue from some future workers but only a fraction of their future benefits. In order to provide a more complete estimate of the long-run unfunded obligations of the programs, estimates can be extended to the infinite horizon. The open-group infinite horizon net obligation is the present value of all expected future program outlays less the present value of all expected future program tax and premium revenues. Such a measure is provided in Table 6 for the three trust funds represented in Table 5.

¹¹ Interest income is not a factor in this table as dollar amounts are in present value terms.

¹² The SMI Trust Fund has \$69 billion of existing assets.

From the budget or governmentwide perspective, the values in line 1 plus the values in line 4 of Table 6 represent the value of resources needed to finance each of the programs into the infinite future. The sums are shown in the last line of the table (also equivalent to adding the values in the second and fifth lines). The total resources needed for all the programs sums to \$72.0 trillion in present value terms. This need can be satisfied only through increased borrowing, higher taxes, reduced program spending, or some combination.

The second line shows the value of the trust fund at the beginning of 2015. For the HI and OASDI Programs this represents, from the trust fund perspective, the extent to which the programs are funded. From that perspective, when the trust fund is subtracted, an additional \$25.7 trillion is needed to sustain the OASDI program into the infinite future, while an additional \$0.01 trillion is needed to sustain the HI program. However, looking just at present values ignores timing differences in the underlying projected cash flows; the HI Trust Fund is projected to remain solvent only until 2030. As described above, from the trust fund perspective, the SMI Program is fully funded, from a governmentwide basis, the substantial gap that exists between premiums, state transfer revenue, and program expenditures in the SMI Program (\$28.2 trillion and \$14.9 trillion for Parts B and D, respectively) represents future general revenue obligations of the federal budget.

In comparison to the analogous 75-year number in Table 5, extending the calculations beyond 2089, captures the full lifetime benefits, plus taxes and premiums of all current and future participants. The shorter horizon understates the total financial needs by capturing relatively more of the revenues from current and future workers and not capturing all of the benefits that are scheduled to be paid to them.

Table 6
Present Values of Costs Less Tax, Premium and State Transfer Revenue
through the Infinite Horizon, HI, SMI, OASDI

(In trillions of dollars as of January 1, 2015)

	HI	SMI		OASDI	Total
		Part B	Part D		
Present value of future costs less future taxes, premiums, and state transfers for current participants.....	8.8	14.8	5.2	29.5	58.3
Less current trust fund balance.....	0.2	0.1	-	2.8	3.1
Equals net obligations for past and current participants.....	8.6	14.7	5.2	26.7	55.2
Plus net obligations for future participants.....	(8.5)	13.5	9.7	(1.0)	13.7
Equals net obligations through the infinite future for all participants.....	0.1	28.2	14.9	25.7	68.9
Present values of future costs less the present values of future income over the infinite horizon.....	0.3	28.3	14.9	28.5	72.0

Details may not add to totals due to rounding.

Source: 2015 OASDI and Medicare Trustees' Reports.

Railroad Retirement, Black Lung, and Unemployment Insurance

Railroad Retirement

The Railroad Retirement Board (RRB) was created in the 1930s to establish a retirement benefit program for the Nation's railroad workers. As the Social Security Program legislated in 1935 would not give railroad workers credit for service performed prior to 1937, legislation was enacted in 1934, 1935, and 1937 (collectively the Railroad Retirement Acts of the 1930s) to establish a railroad retirement program separate from the Social Security Program.

Railroad retirement pays full retirement annuities at age 60 to railroad workers with 30 years of service. The program pays disability annuities based on total or occupational disability. It also pays annuities to spouses, divorced spouses, widow(er)s, remarried widow(er)s, surviving divorced spouses, children, and parents of deceased railroad workers. Medicare covers qualified railroad retirement beneficiaries in the same way as it does Social Security beneficiaries.

Payroll taxes paid by railroad employers and their employees provide a primary source of income for the Railroad Retirement and Survivors' Benefit Program. By law, railroad retirement taxes are coordinated with Social Security taxes. Employees and employers pay Tier I taxes at the same rate as Social Security taxes. Tier II taxes finance railroad retirement benefit payments that are higher than Social Security levels.

Other sources of program income include: the RRB-SSA-CMS Financial Interchanges with the Social Security and Medicare Trust Funds, earnings on investments, federal income taxes on railroad retirement benefits, and appropriations (provided after 1974 as part of a phase out of certain vested dual benefits). See Note 23—Social Insurance, for additional information on railroad retirement program financing.

Amounts in the Railroad Retirement Account and the SSEB Account that are not needed to pay current benefits and administrative expenses may be transferred to the NRRIT or used to offset transfers from the NRRIT to the Railroad Retirement Account. The NRRIT's sole purpose is to manage and invest railroad retirement assets. NRRIT's Board of Trustees is empowered to invest trust assets in nongovernmental assets, such as equities and debt, as well as in Government securities.

Since its inception, NRRIT has received \$21.3 billion from RRB (including \$19.2 billion in fiscal year 2003, pursuant to RRSIA) and returned \$17.8 billion. During fiscal year 2015, the NRRIT made net transfers of \$1.2 billion to the RRB to pay retirement benefits. Administrative expenses of the trust are paid out of trust assets. The balance as of September 30, 2015, and 2014, of non-federal securities and investments of the NRRIT are disclosed in Note 7—Debt and Equity Securities.

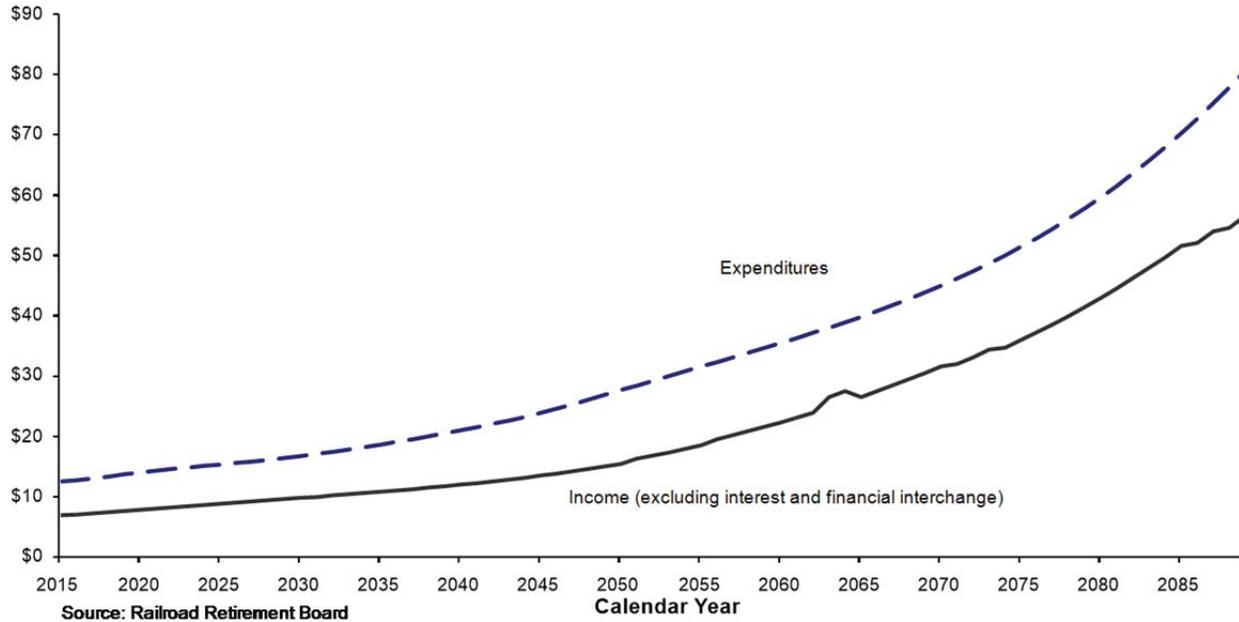
Cash Flow Projections

Economic and Demographic Assumptions. The economic and demographic assumptions used for the most recent set of projections are shown in the "Railroad Retirement" section of Note 23—Social Insurance.

Income and Expenditures. Chart 11 shows, in dollars, estimated railroad retirement income (excluding interest and financial interchange income) and expenditures for the period 2015-2089 based on the intermediate set of assumptions used in the RRB's actuarial valuation of the program. The estimates are for the open-group population, which includes all persons projected to participate in the Railroad Retirement Program as railroad workers or beneficiaries during the period. Thus, the estimates include payments from, and on behalf of, those who are projected to be employed by the railroads during the period as well as those already employed at the beginning of the period. They also include expenditures made to, and on behalf of, such workers during that period.

**Chart 11—Estimated Railroad Retirement Income
(Excluding Interest and Financial Interchange Income) and Expenditures
2015-2089**

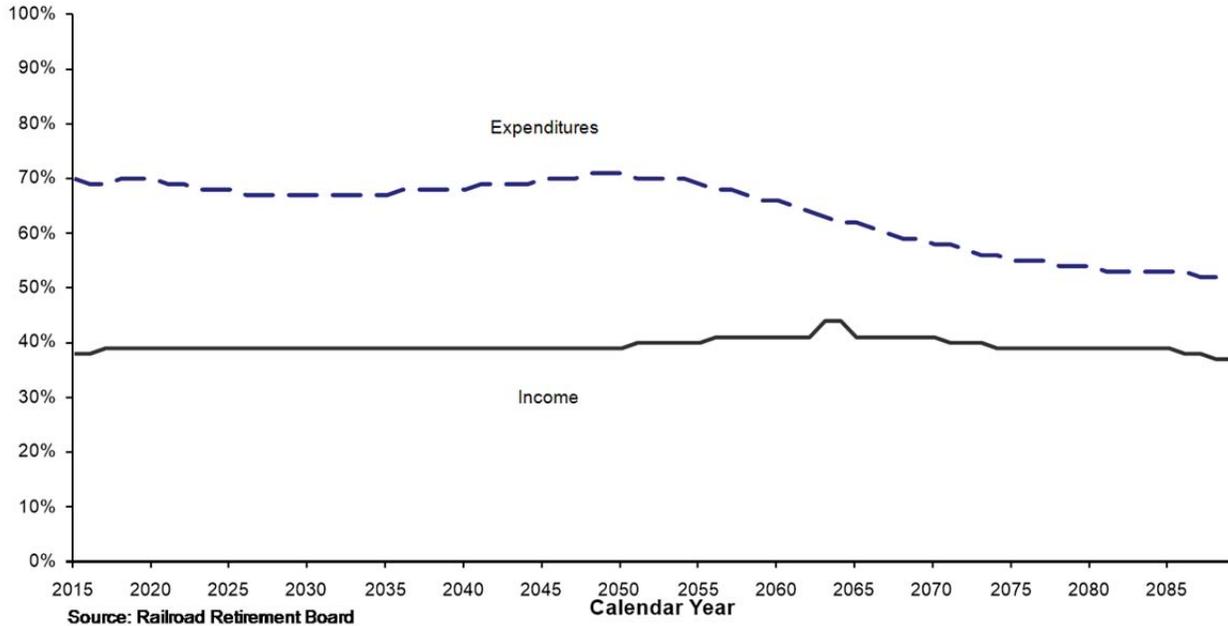
(In billions of dollars)



As Chart 11 shows, expenditures are expected to exceed tax income for the entire projection period. The imbalance generally grows at a moderate amount until about 2082 when it begins to grow a little more rapidly.

Income and Expenditures as a Percent of Taxable Payroll. Chart 12 shows estimated expenditures and income as a percent of Tier II taxable payroll. Expenditures as a percentage of payroll range between 67% and 71% until 2058, after which the percentage decreases from one year to the next. This is largely due to the anticipated decline in the number of annuitants per full-time employee.

**Chart 12—Estimated Railroad Retirement Income
(Excluding Interest and Financial Interchange Income) and Expenditures
as a Percent of Tier II Taxable Payroll
2015-2089**



Sensitivity Analysis. Actual future income from railroad payroll taxes and other sources and actual future expenditures for scheduled benefits and administrative expenses will depend upon a large number of factors as mentioned above. Two crucial assumptions are employment growth and the interest rate. The interest rate assumption reflects the expected rate of return on NRRIT investments. Table 7 shows the sensitivity of the shortfall in the Railroad Retirement Program to variations in these two assumptions. The low-cost employment scenario has a 7.0 percent smaller shortfall of income to expenditures, and the high-cost scenario has a 6.9 percent higher shortfall. A higher discount rate reduces future values relative to a lower rate. As seen in the table, the shortfall is 27.8 percent lower if the interest rate is 10.0 percent rather than 7.0 percent and 71.5 percent higher when the interest rate is 4.0 percent rather than 7.0 percent.

Table 7
Present Values of Railroad Retirement Expenditures in Excess of Income
Under Various Employment and Interest Rate Assumptions, 2015-2089

(Dollar values in billions; values of assumptions shown in parentheses)

Assumption	Low	Middle	High
Employment ¹	102.1 (-0.5%)	109.8 (-2.0%)	117.4 (-3.5%)
Interest rate	79.3 (10.0%)	109.8 (7.0%)	188.3 (4.0%)

¹ The low and middle employment scenarios have passenger service employment remaining at 46,000 workers per year and the remaining employment base declining at 0.5 percent and 2.0 percent, respectively, for 25 years, at a reducing rate over the next 25 years, and remaining level thereafter. The high-cost scenario has passenger service employment declining by 500 workers per year until a level of 35,000 is reached with the remaining employment base declining by 3.5 percent per year for 25 years, at a reducing rate over the next 25 years, and remaining level thereafter.

Source: Railroad Retirement Board

Sustainability of Railroad Retirement

Table 8 shows the magnitudes of the primary expenditures and sources of financing for the Railroad Retirement Program computed on an open-group basis for the next 75 years and expressed in present values as of January 1, 2015. The data are consistent with the Statements of Social Insurance.

From a governmentwide perspective, revenues are expected to fall short of expenditures by approximately \$109.8 billion, which represents the present value of resources needed to sustain the Railroad Retirement Program. From a trust fund perspective, when the trust fund balance and the financial interchange and transfers are included, the combined balance of the NRRIT, the Railroad Retirement Account, and the SSEB Account show a slight surplus.

Table 8
Present Values of 75-Year Projections of Revenues and Expenditures for the Railroad Retirement Program^{1,2}

(In billions of present-value dollars as of January 1, 2015)

Estimated future income (excluding interest) received from or on behalf of: ³	
Current participants who have attained retirement age	8.0
Current participants not yet having attained retirement age	66.4
Those expected to become participants	78.5
All participants	152.9
Estimated future expenditures: ⁴	
Current participants who have attained retirement age	130.6
Current participants not yet having attained retirement age	97.2
Those expected to become participants	34.9
All participants	262.7
Net obligations from budget perspective (expenditures less income)	109.8
Railroad retirement program assets (mostly investments stated at market) ⁵	27.6
Financial interchange from Social Security Trust	83.7
Net obligations from trust fund perspective	(1.5)

¹ Represents combined values for the Railroad Retirement Account, SSEB Account, and NRRIT, based on middle employment assumption.

² The data used reflect the provisions of RRSIA of 2001.

³ Future income (excluding interest) includes Tier I taxes, Tier II taxes, and income taxes on benefits.

⁴ Future expenditures include benefits and administrative expenditures.

⁵ The value of the fund reflects the 7.0 percent interest rate assumption. The RRB uses the relatively high rate due to investments in private securities.

Note: Detail may not add to totals due to rounding. Employee and beneficiary status are determined as of 1/1/2014, whereas present values are as of 1/1/2015.

Source: Railroad Retirement Board

Black Lung

The Federal Coal Mine Health and Safety Act of 1969 created the Black Lung Disability Benefit Program to provide compensation, medical, and survivor benefits for eligible coal miners who are totally disabled due to pneumoconiosis (black lung disease) arising out of their coal mine employment and to eligible survivors of coal miners who died due to pneumoconiosis. DOL operates the Black Lung Disability Benefit Program. The beneficiary population is a nearly closed universe in which attrition by death exceeds new entrants by a ratio of more than ten to one.

Excise taxes on coal mine operators, based on the domestic sale of coal, are the primary source of financing black lung disability payments and related administrative costs. The *Black Lung Benefits Revenue Act* provided for repayable advances to the BLDTF from the General Fund, in the event that BLDTF resources were not adequate to meet program obligations.

Prior to legislation enacted in 2008 that allowed for the restructuring of BLDTF debt, the trust fund had accumulated large liabilities from significant and growing shortfalls of excise taxes relative to benefit payments and interest expenses.

The *Energy Improvement and Extension Act of 2008* (Public Law 110-343), enacted on October 3, 2008, contained several provisions that significantly improved the BLDTF's financial position, including:

- Continuation of a previously-enacted increase in coal excise tax rates for an additional 5 years, through December 2018;
- Provision for the restructuring of BLDTF debt by refinancing the outstanding repayable advances with proceeds from issuing new debt instruments with lower interest rates; and
- Establishment of a one-time appropriation that significantly reduced the outstanding debt of the BLDTF.

This Act also allowed that any debt issued by the BLDTF subsequent to the refinancing may be used to make benefit payments, other authorized expenditures, or to repay debt and interest from the initial refinancing. All debt issued by the BLDTF was effected as borrowing from the Treasury's Bureau of the Fiscal Service.

On September 30, 2015, total liabilities of the BLDTF exceeded assets by \$5.6 billion. Prior to the enactment of Public Law 110-343, this shortfall was funded by repayable advances to the BLDTF, which were repayable with interest. Pursuant to Public Law 110-343, these repayable advances were restructured as zero coupon bonds and any future shortfall is financed with one-year borrowing from Treasury.

From the budget or consolidated financial perspective, Chart 13 shows projected black lung expenditures (excluding interest) and excise tax collections for the period 2016-2040 in constant dollars. The significant assumptions used in the most recent set of projections, in constant dollars, are coal excise tax revenue estimates, the tax rate structure, the number of beneficiaries, life expectancy, federal civilian pay raises, medical cost inflation, the interest rate on new debt issued by the BLDTF, and the CPI-U for goods and services. The projected excise tax collections reflect, among other things, regulation pursuant to the Clean Power Plan. The projected decrease in cash inflows in the year 2019 and thereafter is the result of a scheduled reduction in the tax rate on the sale of coal. This rate reduction is projected to result in a 39.6 percent decrease in the amount of excise taxes collected between the years 2018 and 2019.

**Chart 13—Estimated Black Lung Disability Trust Fund Income and Expenditures (Excluding Interest)
In Constant (or Inflation-Adjusted) Dollars
2016-2040**

(In millions of dollars)

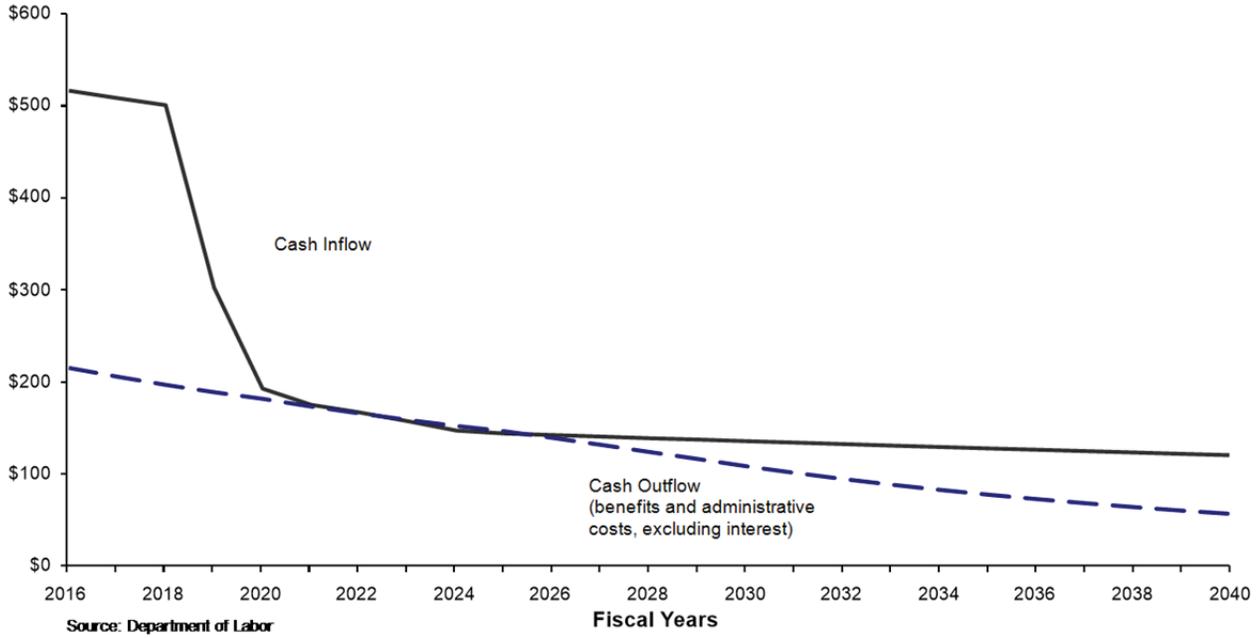


Table 9
Present Values of 25-Year Projections of Expenditures and Revenues
for the Black Lung Disability Trust Fund

(in billions of present value dollars as of September 30, 2015)

Projected future expenditures	3.1
Projected future tax income	4.7
Net obligations from budget perspective (expenditures less income)	(1.6)
Accumulated balance due General Fund	5.6
Net obligations from trust fund perspective	4.0

Note: Detail may not add to totals due to rounding.

Source: Department of Labor

Table 9 shows present values of 25-year projections of expenditures and revenues for the Black Lung Disability Trust Fund computed as of September 30, 2015. Cash flows were discounted using a rate of 2.25 percent. From a governmentwide (budget) perspective, the present value of expenditures is expected to be less than the present value of income by \$1.6 billion (a surplus). From a trust fund perspective, a large balance (\$5.6 billion) is owed to the General Fund. From that perspective, when that accumulated balance is combined with the cash flow surplus, the program has a shortfall of \$4.0 billion in present value dollars.

Unemployment Insurance

The Unemployment Insurance Program was created in 1935 to provide temporary partial wage replacement to workers who lost their jobs. The program is administered through a unique system of federal and state partnerships established in federal law but administered through conforming state laws by state agencies. The program includes the 50 states and Puerto Rico, U.S. Virgin Islands, and the District of Columbia. DOL interprets and enforces federal law requirements and provides broad policy guidance and program direction, while program details such as benefit eligibility, duration, and amount of benefits are established through individual state unemployment insurance statutes and administered through state unemployment insurance agencies.

The program is financed through the collection of federal and state unemployment taxes that are credited to the UTF and reported as federal tax revenue. The fund was established to account for the receipt, investment, and disbursement of unemployment taxes. Federal unemployment taxes are used to pay for federal and state administration of the Unemployment Insurance Program, veterans' employment services, state employment services, and the federal share of extended unemployment insurance benefits. Federal unemployment taxes also are used to maintain a loan account within the UTF, from which insolvent state accounts may borrow funds to pay unemployment insurance benefits.

Chart 14 shows the projected cash contributions and expenditures over the next 10 years under expected economic conditions (described below) in constant dollars. The significant assumptions used in the projections include total unemployment rates, civilian labor force levels, percent of unemployed receiving benefits, total wages, distribution of benefit payments by state, state tax rate structures, state taxable wage bases, interest rates on UTF investments, and the Consumer Price Index for goods and services. These projections, excluding interest earnings, indicate a positive net cash flow in fiscal year 2016 through fiscal year 2025.

The *Federal/State Extended Unemployment Compensation Act of 1970* provides for the extension of the duration of unemployment insurance benefits during periods of high unemployment to individuals who have exhausted their regular unemployment benefits. When the insured unemployment level within a state, or in some cases total unemployment, reaches certain specified levels, the state must extend benefit duration by 50 percent, up to a combined maximum of 39 weeks; certain states voluntarily extended the benefit duration up to a combined maximum of 46 weeks. These extended benefits are financed one-half by state unemployment taxes and one-half by federal unemployment taxes. However, the American Recovery and Reinvestment Act of 2009 (ARRA) began temporary 100 percent federal funding of extended benefits. Subsequent legislation, most recently P.L. 112-240, the *American Taxpayer Relief Act of 2012*, authorized continuing 100 percent federal funding of extended unemployment benefits to December 31, 2013.

During prolonged periods of high unemployment, Congress may authorize the payment of emergency unemployment benefits to supplement extended Unemployment Insurance (UI) benefit payments. Emergency benefits began in July 2008, authorized under the *Supplemental Appropriations Act, 2008*. This emergency program was temporarily extended and additionally funded by the ARRA of 2009 and has been subsequently modified several times, most recently by P.L. 112-240, the *American Taxpayer Relief Act of 2012*, which extended the emergency unemployment insurance program to January 1, 2014. The DOL’s appropriations decreased \$12.5 billion, or 21.1 percent, in fiscal year 2015 primarily due to decreases in transfers to the UTF for Emergency Unemployment Compensation due to decrease in benefit costs. DOL’s borrowing authority also decreased \$2.7 billion, or 100 percent. A \$15.5 billion dollar decrease in benefit outlays from the prior year also resulted in part due to the discontinuance of the federally funded Emergency Unemployment Compensation program, as well as a decline in the number of new claims, and the absence of states meeting the trigger thresholds required to pay extended benefits.

**Chart 14—Estimated Unemployment Trust Fund Cash Flow
Using Expected Economic Conditions
In Constant (or Inflation-Adjusted) Dollars
2016-2025**

(In billions of dollars)

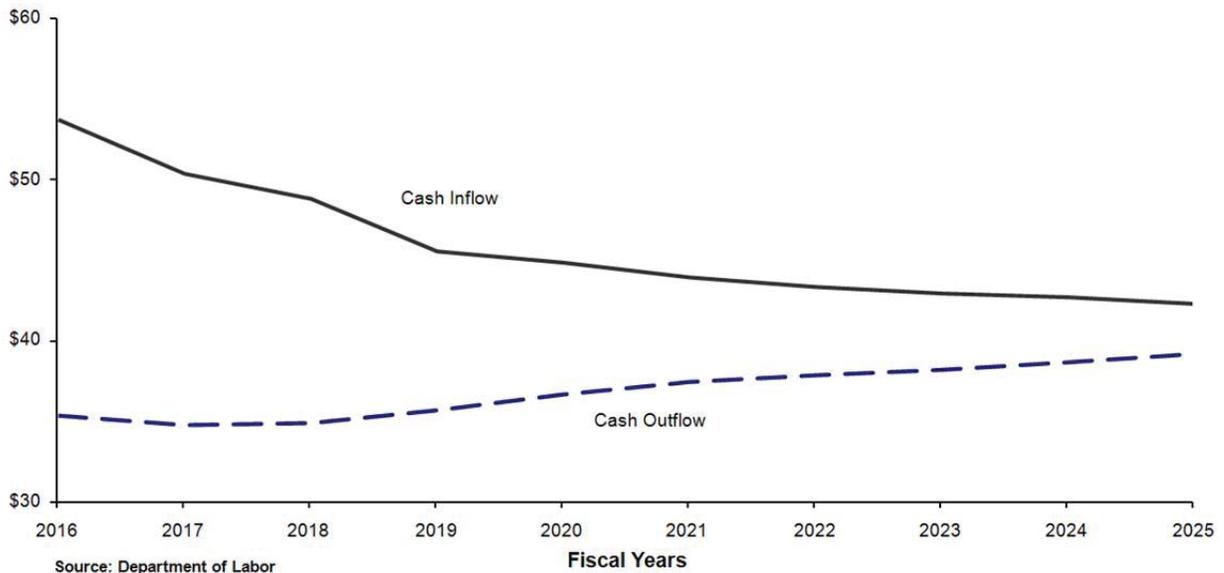


Table 10 shows 10-year projections of revenues and expenditures for the Unemployment Insurance Program in constant dollars. Three sets of numbers are presented in order to show the effects of varying economic conditions as reflected in different assumptions about the unemployment rate. For expected economic conditions, the estimates are based on an unemployment rate of 4.95 percent during fiscal year 2016, and remaining between 4.6 percent and 4.9 percent thereafter. Under Sensitivity Analysis I which utilizes a higher unemployment rate of 6.3 percent beginning in fiscal year 2016, net cash inflows are negative in fiscal years 2017 and 2018, but become positive in fiscal year 2019, and continue to be positive through 2025. Under Sensitivity Analysis II, which utilizes a higher unemployment rate of 6.36 percent in fiscal year 2016, net cash inflows including interest earnings and expenses, are projected in fiscal year 2016, but outflows exceed inflows in fiscal years 2017, 2018, and 2019 by \$17.7 billion, \$26.5 billion, and \$8.4 billion, respectively. Net cash inflows are reestablished in fiscal year 2020 and peak in fiscal year 2025 with a drop in the unemployment rate to 7.32 percent in fiscal year 2020 and then steadily downward for fiscal years 2021 through 2025.

Each analysis uses an open group that includes current and future participants of the Unemployment Insurance Program. Table 10 shows the impact on the UTF projections of varying projected unemployment rates. For example, in Sensitivity Analysis II, while tax income is projected to increase as higher layoffs result in higher employer taxes, benefit outlays

increase even more. From the Governmentwide (budget) perspective, under expected conditions, future cash income exceeds future expenditures by \$89.7 billion. From the same perspective, under Sensitivity Analysis II, future cash income exceeds future expenditures by \$2.5 billion. From a trust fund perspective, which takes into account the \$31.2 billion trust fund balance, the program has a surplus of \$73.6 billion under the economic conditions for Sensitivity Analysis I.

Table 10
10-Year Projections of Expenditures and Revenues for
Unemployment Insurance in Constant (or Inflation-Adjusted) Dollars
Under Three Alternative Analyses for Economic Conditions

(in billions as of September 30, 2015)

	Economic Conditions		
	Expected	Sensitivity Analysis I	Sensitivity Analysis II
Projected future expenditures	368.9	499.3	608.0
Projected future cash income	458.5	541.7	610.5
Net obligations from budget perspective (expenditures less income)	(89.7)	(42.4)	(2.5)
Trust fund assets	31.2	31.2	31.2
Net obligations from trust fund perspective ¹	(120.9)	(73.6)	(33.7)

¹Net obligations from the trust fund perspective equals net obligations from the budget perspective minus trust fund assets. The negative values in this line are indicative of surpluses.

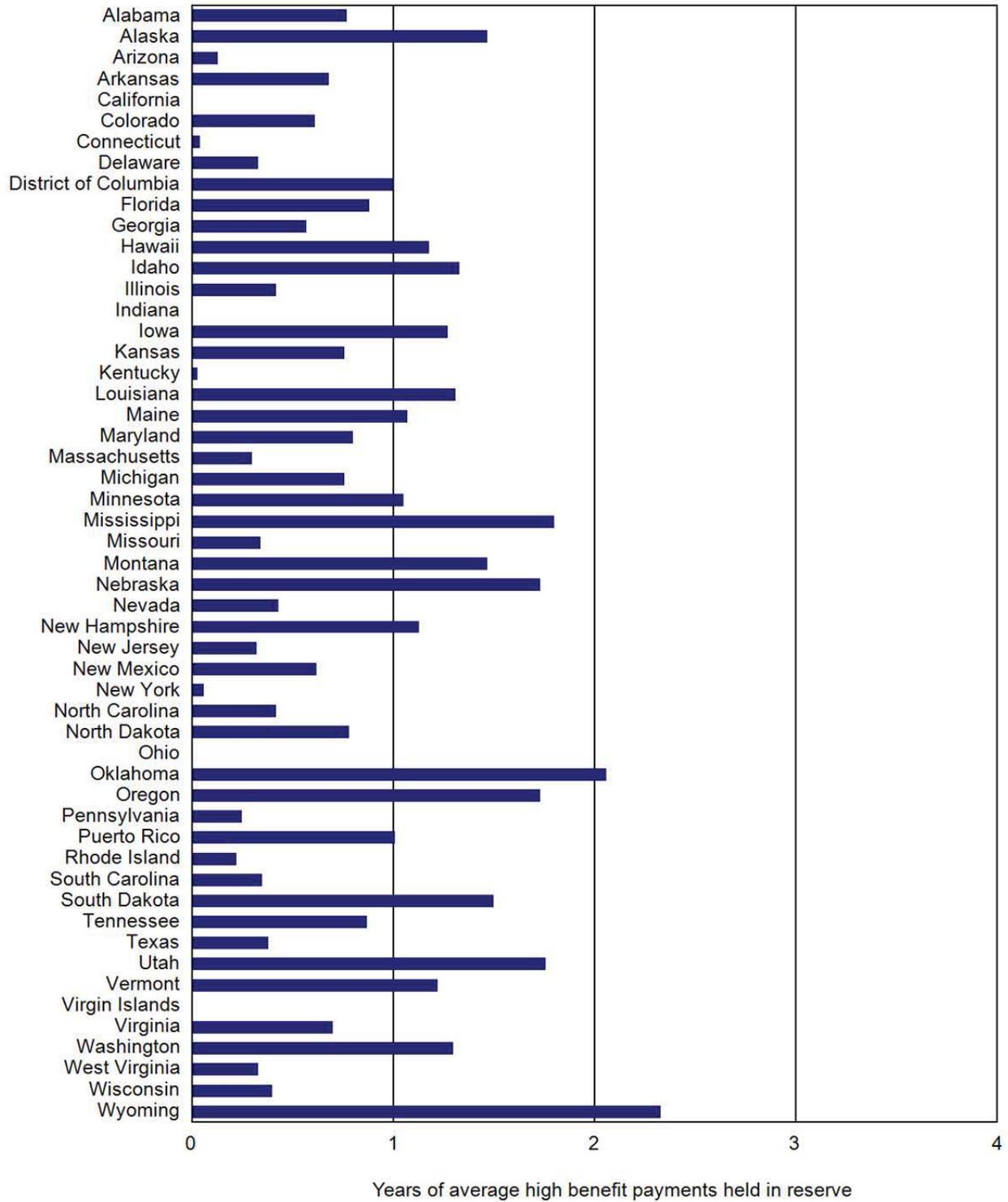
Note: Data may not add to totals due to rounding.

Unemployment Trust Fund Solvency

Each state's accumulated UTF net assets or reserve balance should provide a defined level of benefit payments over a defined period. To be minimally solvent, a state's reserve balance should provide for one year's projected benefit payment needs based on the highest levels of benefit payments experienced by the state over the last 20 years. A ratio of 1.0 or greater indicates a state is minimally solvent. States below this level are vulnerable to exhausting their funds in a recession. States exhausting their reserve balance borrow funds from the Federal Unemployment Account (FUA) to make benefit payments. During fiscal year 2009, the balances in the FUA were depleted; the FUA borrowed from the General Fund and continued to do so through fiscal year 2015, although in fiscal year 2015 the FUA repaid all its outstanding borrowings.

Chart 15 presents the state by state results of this analysis as of September 30, 2015. As the chart illustrates, 32 state funds plus the fund of the Virgin Islands were below the minimal solvency ratio of 1.0 at September 30, 2015.

Chart 15—Unemployment Trust Fund Solvency as of September 30, 2015



Deferred Maintenance and Repairs

Deferred maintenance and repairs result from maintenance not being performed on a timely basis and is the estimated cost to bring Government-owned property, plant, and equipment to an acceptable condition. Deferred maintenance and repairs exclude the cost of expanding the capacity of assets or upgrading them to serve needs different from those originally intended. The consequences of not performing regular maintenance and repairs could include increased safety hazards, poor service to the public, higher costs in the future, and inefficient operations. Estimated deferred maintenance and repairs costs are not accrued in the Statements of Net Cost or recognized as a liability on the Balance Sheets.

The amounts disclosed for deferred maintenance and repairs are allowed to be measured using one of the following three methods:

- Condition assessment surveys which are periodic inspections of Government-owned property to determine the current condition and estimated cost to bring the property to an acceptable condition.
- Life-cycle cost forecast that is an acquisition or procurement technique that considers operation, maintenance, and other costs in addition to the acquisition cost of assets.
- Any other method of choice that is similar to the condition assessment survey or life-cycle costing methods.

The table below for FY 2015 reporting of deferred maintenance and repairs is presented as a single estimate in accordance with SFFAS No. 42, *Deferred Maintenance and Repairs: Amending Statements of Federal Financial Accounting Standards 6, 14, 29, and 32*. The single estimate is presented instead of reporting condition information and low-high deferred maintenance and repairs estimates. The significant change in the total amount of deferred maintenance and repairs from FY 2014 is mainly due to the increase in deferred maintenance and repairs at the Department of Defense. DOD's deferred maintenance and repairs increased by more than \$24.6 billion, since FY 2014. This is largely attributable to DOD's ongoing efforts to validate existence and completeness and improve validation of assets, and ensure consistency in accounting and reporting maintenance costs across the Military Services and other Defense organizations. These amounts were all measured using the condition assessment survey method. Please refer to the individual financial statements of DOI, DOD, USDA, DOE, HHS, NASA, and VA for detailed significant information on FY 2015 deferred maintenance and repairs.

Deferred Maintenance and Repairs (Single Estimate) as of September 30, 2015	
(In billions of dollars)	2015
Asset category:	
General property, plant, and equipment	167.5
Heritage assets	15.6
Stewardship land	0.4
Total deferred maintenance and repairs	<u>183.5</u>

The following table for FY 2014 reporting of deferred maintenance and repairs represents the range of estimates for FY 2014. These amounts were all measured using the condition assessment survey method. The standards for acceptable operating condition, the changes in these standards, and changes in asset condition varied widely between federal entities.

Some deferred maintenance and repairs were deemed critical. In FY 2014 such amounts and conditions were defined by the individual agencies with responsibility for the safekeeping of the assets. The critical maintenance amount was not included in the low or high estimates amounts and was reported separately. Low and high estimates were based on materiality of the estimated cost of returning the asset to the acceptable condition versus the total value of the corresponding asset. Single figure cost estimates were not prepared for FY 2014. Therefore, the information is not available to compare directly to amounts reported for FY 2015. Please refer to the individual financial statements of DOI, DOD, USDA, DOE, HHS, NASA, and VA for detailed significant information on FY 2014 deferred maintenance and repairs.

Deferred Maintenance and Repairs as of September 30, 2014

(In billions of dollars)	Cost Range		Critical Maintenance
	Low	High	
	Estimate	Estimate	
	2014	2014	2014
Asset category:			
Buildings, structures, and facilities.....	27.4	31.2	103.7
Furniture, fixtures, and equipment.....	0.2	0.2	1.8
Other general property, plant, and equipment.....	7.7	7.7	0.9
Heritage assets.....	6.2	8.6	5.0
Total deferred maintenance and repairs.....	<u>41.5</u>	<u>47.7</u>	<u>111.4</u>

Other Claims for Refunds

Management has estimated amounts that may be paid out as other claims for tax refunds. This estimate represents an amount (principal and interest) that may be paid for claims pending judicial review by the federal courts or, internally, by appeals. The total estimated payout (including principal and interest) for claims pending judicial review by the federal courts is \$2.1 billion and \$3.1 billion for fiscal years 2015 and 2014, respectively. For those under appeal, the estimated payout is \$2.7 billion and \$4.7 billion for fiscal years 2015 and 2014, respectively. Although these refund claims have been deemed to be probable, they do not meet the criteria in SFFAS No. 5, *Accounting for Liabilities of the Federal Government*, for reporting the amounts in the balance sheets or for disclosure in the notes to the financial statements. However, they meet the criteria in SFFAS No. 7, *Accounting for Revenue and Other Financing Sources*, for inclusion as required supplementary information. To the extent judgments against the Government for these claims prompt other similarly situated taxpayers to file similar refund claims, these amounts could become significantly greater.

Tax Assessments

The Government is authorized and required to make inquiries, determinations, and assessments of all taxes that have not been duly paid. Unpaid assessments result from taxpayers filing returns without sufficient payment, as well as enforcement programs such as examination, under-reporter, substitute for return, and combined annual wage reporting. Under federal accounting standard, unpaid assessments are categorized as taxes receivable if taxpayers agree or a court has determined the assessments are owed. If neither of these conditions are met, the unpaid assessments are categorized as compliance assessments. Assessments with little or no future collection potential are called write-offs. Although compliance assessments and write-offs are not considered receivables under federal accounting standards, they represent legally enforceable claims of the Government. There is, however, a significant difference in the collection potential between compliance assessments and receivables.

Compliance assessments and pre-assessment work in process are \$82.1 billion and \$88.8 billion for fiscal years 2015 and 2014, respectively. The amount of allowance for uncollectible amounts pertaining to compliance assessments cannot be reasonably estimated, and thus the net realizable value of the value of the pre-assessment work-in-process cannot be determined. The amount of assessments that agencies have statutory authority to collect at the end of the period but that have been written off and excluded from accounts receivable are \$138.0 billion for both fiscal years 2015 and 2014.

Risk Assumed

Risk assumed information is important for all federal insurance and guarantee programs (i.e., USDA-Federal Crop Insurance Corporation programs, DHS-National Flood Insurance Program, NCUA-Credit Unions), except social insurance, life insurance, and loan guarantee programs. Risk assumed is generally measured by the present value of unpaid losses net of associated premiums, based on the risk inherent in the insurance or guarantee coverage in force. In addition to the liability for unpaid insurance claims included in Note 15—Insurance and Guarantee Program Liabilities, for events that have already occurred, the Government also is required to report as supplementary information risk assumed amounts and the periodic changes in those amounts.

The assessments of losses using the risk assumed are made by actuarial or financial methods that include information and assumptions applicable to the economic, legal, and policy environment in force at the time the assessments are made. Management has estimated the loss amounts based on the risk assumed as well as the periodic changes.

Please refer to the individual financial statements of the USDA, DHS, and NCUA for further detailed information, including information as to the indicators of the range of uncertainty around expected estimates and the indicators of the sensitivity of the estimates to changes in major assumptions. The table does not include all federal insurance and guarantee programs.

Risk Assumed Information as of September 30, 2015, and 2014		
(In billions of dollars)	2015	2014
Present value of unpaid losses, net of associated premiums:		
Department of Agriculture - Federal Crop Insurance Corporation programs.....	7.6	7.6
Department of Homeland Security - National Flood Insurance program.....	-	0.4
National Credit Union Administration - Credit Unions.....	0.2	0.2
Total	<u>7.8</u>	<u>8.2</u>
Period changes in risk assumed amounts:		
Department of Agriculture	-	2.7
Department of Homeland Security.....	(0.4)	(0.2)
Total	<u>(0.4)</u>	<u>2.5</u>

Federal Oil and Gas Resources

DOI plays an integral part in the implementation of the President's *Blueprint for a Clean and Secure Energy Future*, designed to build a safe, secure energy future by using cleaner, alternative fuels to power our homes and economy, producing more oil and gas domestically, and improving energy efficiency. The DOI is responsible for managing the nation's oil and natural gas resources and the mineral revenues on federal lands, both onshore and on the Outer Continental Shelf. This management process can be broken down into six essential analysis components: pre-leasing, post-leasing and pre-production, production and post-production, revenue collection, fund disbursement, and compliance.

Federal Oil and Gas Resources as of September 30, 2015, and 2014

(In billions of dollars)	Offshore		Onshore		Total	
	2015	2014	2015	2014	2015	2014
Oil and lease condensate.....	31.6	39.6	14.8	15.5	46.4	55.1
Natural gas, wet after lease separation.....	2.8	4.5	14.1	19.2	16.9	23.7
Total	<u>34.4</u>	<u>44.1</u>	<u>28.9</u>	<u>34.7</u>	<u>63.3</u>	<u>78.8</u>

The above table presents the estimated present value of future federal royalty receipts on estimated proved reserves¹³ as of September 30, 2015 and 2014. The federal government's estimated petroleum royalties have as their basis the DOE's Energy Information Administration (EIA) estimates of proved reserves. The EIA provides such estimates directly for federal offshore areas and they are adjusted to extract the federal subset of onshore proved reserves. The federal proved reserves were then further adjusted to correspond with the effective date of the actual production for calendar year 2013, the most recently published EIA proved reserves report and then are projected, separately for oil and natural gas, over time to simulate a schedule of when the reserves would be produced. Future royalties are then calculated from these production streams by applying future price estimates by the OMB, and effective royalty rates, adjusted for transportation allowances and other allowable deductions. The valuation method used for gas captures royalties from three products—dry gas, wet gas, and natural gas liquids—which collectively are reported as natural gas, wet after lease separation. The present value of these royalties are then determined by discounting the revenue stream back to the effective date at a public discount rate assumed to be equal to the OMB's estimates of future 30-year Treasury bill rates. The 30-year rate was chosen because this maturity life most closely approximates the productive lives of the proved reserves estimates.

¹³ Per the EIA, lease condensate is a mixture consisting primarily of pentanes and heavier hydrocarbons which is recovered as a liquid from natural gas in lease separation facilities. This category excludes natural gas plant liquids, such as butane and propane, which are recovered at downstream natural gas processing plants or facilities. Also per the EIA, natural gas, wet after lease separation, is the volume of natural gas remaining after removal of lease condensate in lease and/or field separation facilities, if any, and after exclusion of nonhydrocarbon gases where they occur in sufficient quantity to render the gas unmarketable. Natural gas liquids may be recovered from volume of natural gas, wet after lease separation, and at natural gas processing plants (<http://www.eia.gov/naturalgas/data.cfm>).

**Estimated Federal Oil and Gas Petroleum Royalties (Proved Reserves)
As of September 30, 2015, and 2014**

Petroleum Category	Quantity (in millions)		Average Purchase Price (\$)		Average Royalty Rate (%)	
	2015	2014	2015	2014	2015	2014
Oil and lease condensate (Bbl):						
Offshore	4,623.6	4,917.4	56.45	99.17	13.42	13.60
Onshore	2,377.1	2,147.1	49.95	90.03	12.26	12.15
Total	<u>7,000.7</u>	<u>7,064.5</u>				
Natural gas, wet after lease separation (Mcf):						
Offshore	6,858.8	8,587.3	3.25	4.93	12.84	13.52
Onshore	46,310.8	48,098.6	3.14	4.80	10.11	10.63
Total	<u>53,169.6</u>	<u>56,685.9</u>				

Bbl = barrels

Mcf = 1,000 cubic feet

The table above provides the estimated quantity, a weighted average purchase price, and a weighted average royalty rate by category of estimated federal petroleum royalties at the end of fiscal year 2015 and 2014.¹⁴ The estimated quantities, average purchase prices and royalty rates vary by region; the above table reflects an overall weighted average purchase price and royalty rate, and is not presented on a regional basis, but is instead calculated based on regional averages. The prices and royalty rates are based upon historical (or estimated) averages, excluding prior-period adjustments, if any, and are affected by such factors as accounting adjustments and transportation allowances, resulting in effective average prices and royalty rates. Prices are valued at the lease rather than at the market center, and differ from those used to compute the asset estimated present values, which are forecasted and discounted based upon OMB economic assumptions. For further details on federal oil and gas resources, refer to the financial statements of DOI. In addition to the oil and gas resources discussed above, the federal government also owns oil and gas resources that are not currently under lease.

¹⁴ Gulf of Mexico proved reserves are royalty bearing volumes. In the Gulf of Mexico, an additional 879.0 million Bbl for fiscal year 2015 and 564.1 million Bbl for fiscal year 2014 of proved oil reserves, and 1,097.0 million Mcf for fiscal year 2015 and 728.0 million Mcf for fiscal year 2014 of proved gas reserves are not reflected in these totals as they are estimated to be producible royalty free under various royalty relief provisions. The net present value of the royalty value of the royalty free proved reserves volumes in the Gulf of Mexico is estimated to be \$6.5 billion for fiscal year 2015 and \$5.3 billion for fiscal year 2014.

Federal Natural Resources Other than Oil and Gas

Federal Natural Resources Other than Oil and Gas as of September 30, 2015, and 2014

(in billions of dollars)

Natural Resource Category	2015	2014
Coal royalties	10.5	12.0
Total.....	10.5	12.0

DOI plays an integral part in the implementation of the President's *Blueprint for a Clean and Secure Energy Future* which is designed to build a safe, secure energy future by using cleaner, alternative fuels to power our homes and economy, producing more oil and gas domestically and improving energy efficiency. DOI is responsible for managing the Nation's coal resources and revenues on federal lands.

The Office of Natural Resources Revenue (ONRR) within DOI is responsible for the management and collection of revenues associated with federal coal leases which are managed by the Bureau of Land Management (BLM) within DOI. The ONRR achieves optimal value by ensuring that all natural resource revenues are efficiently and accurately collected as well as disbursed to recipients in a timely manner by performing audit and revenue compliance activities.

The Mineral Leasing Act of 1920, as amended, and the *Mineral Leasing Act for Acquired Lands of 1947*, as amended, gives DOI the responsibility for coal leasing on approximately 700 million acres of federal mineral estate which includes 570 million of acres where coal development is allowed. The surface estate of these lands may be under the control of BLM, the U.S. Forest Service (within USDA), private or state land owners, or other federal agencies.

Public lands are available for coal leasing after the lands have been evaluated through a multiple-use planning process. *The Mineral Leasing Act*, as amended by the *Federal Coal Leasing Amendments Act of 1976*, generally requires that coal be leased competitively and that the federal government must receive a fair market value for land leased for coal development. Once a lease is issued, federal coal leasing laws and lease terms determine the federal government's share of production from coal leasing operations.

DOI receives coal leasing revenues from a bonus paid at the time of the lease, an annual rent payment of \$3.00 per acre, and royalties paid on the value of the coal after it has been mined. A portion of the total federal coal royalties will be distributed to other non-federal entities. The royalty rate for surface-mining methods is 12.5 percent and is 8 percent for underground mining, and the BLM can approve reduced royalty rates based on maximum economic recovery. Regulations that govern BLM's coal leasing program are contained in Title 43, Groups 3000 and 3400 of the Code of Federal Regulations.

The above table presents the estimated present value of federal coal royalties under lease contract or other long-term arrangements as of September 30, 2015 and 2014. The federal government's estimated coal royalties have as their basis the DOI's BLM estimates of recoverable reserves. The federal recoverable reserves are then further adjusted to correspond with the effective date of the analysis and then are projected over time to simulate a schedule of when the reserves would be produced. Futures royalties are then calculated by applying future price estimates and effective royalty rates, adjusted for transportation allowances and other allowable deductions. The present value of these royalties are then determined by discounting the revenue stream back to the effective date at a public discount rate assumed to be equal to the OMB's estimates of future 30-year Treasury bill rates. The 30-year rate was chosen because this maturity life most closely approximates the productive lives of the recoverable reserves estimates.

In addition to the coal resources discussed above, the federal government has other natural resources under lease contract whereby the lessee is required to pay royalties on the sale of the natural resource. These natural resources include soda ash, potash muriates of potash and langbeinite phosphate, lead concentrate, copper concentrate, and zinc concentrate. Soda ash and potash have the largest estimated present value of future royalties. The federal government also owns coal resources and certain other natural resources that are not currently under lease. For further details on federal natural resources-other than oil and gas, refer to the financial statements of DOI.