

REQUIRED SUPPLEMENTARY INFORMATION: SOCIAL INSURANCE

PROGRAM DESCRIPTION

The Old-Age, Survivors, and Disability Insurance (OASDI) program, collectively referred to as “Social Security,” provides cash benefits for eligible U.S. citizens and residents. At the end of calendar year 2009, OASDI benefits were paid to almost 53 million beneficiaries. Eligibility and benefit amounts are determined under the laws applicable for the period. Current law provides that the amount of the monthly benefit payments for workers, or their eligible dependents or survivors, is based on the workers’ lifetime earnings histories.

The OASDI program is financed largely on a pay-as-you-go basis--that is, OASDI payroll taxes paid each year by current workers are primarily used to pay the benefits provided during that year to current beneficiaries. The retired-worker benefits it pays replaces a larger proportion of earned income for lower earners than for higher earners. The amount of OASDI income and benefits may be altered by changes in laws governing the program.

PROGRAM FINANCES AND SUSTAINABILITY

As discussed in Note 8 to the consolidated financial statements, a liability of \$75 billion as of September 30, 2010 and September 30, 2009 is included in “Benefits Due and Payable” on the balance sheet for unpaid amounts of OASDI benefits due to recipients on or before that date. Virtually all of this amount was paid in October 2010. Also, an asset of \$2,586 billion as of September 30, 2010 (\$2,504 billion as of September 30, 2009) is recognized for the “investments in Treasury securities.” These investments are referred to as the combined OASI and DI Trust Fund assets throughout the remainder of this Required Supplementary Information. They represent the accumulated excess for the OASDI program of all past income, including interest, over all past expenditures. They are invested only in securities backed by the full faith and credit of the Federal Government (see Investment and Interest Receivable, Note 5).

No liability has been recognized on the balance sheet for future payments to be made to current and future program participants beyond the unpaid amounts as of September 30, 2010. This is because OASDI is accounted for as a social insurance program rather than as a pension program. Accounting for a social insurance program recognizes the expense of benefits when they are actually paid, or are due to be paid, because benefit payments are nonexchange transactions and are not considered deferred compensation, as would be employer-sponsored pension benefits for employees. Accrual accounting for a pension program, by contrast, recognizes as a liability retirement benefit expenses as they are earned so that the full estimated actuarial present value of the worker’s expected retirement benefits has been recognized by the time the worker retires.

Required Supplementary Information - While no liability has been recognized on the balance sheet for future obligations beyond those due at the reporting date, actuarial estimates are made of the long-range financial condition of the OASDI program and are presented here. Throughout this section, the following terms will generally be used as indicated:

- **Income:** payroll taxes from employers, employees, and self-employed persons; revenue from Federal income-taxation of scheduled OASDI benefits; interest income from Treasury securities held as assets of the OASI and DI Trust Funds; and miscellaneous reimbursements from the General Fund of the Treasury;
- **Income excluding interest:** income, as defined above, excluding the interest income from Treasury securities held as assets of the OASI and DI Trust Funds;
- **Cost:** scheduled benefit payments, administrative expenses, net transfers with the Railroad Retirement program, and vocational rehabilitation expenses for disabled beneficiaries;
- **Cashflow:** either income excluding interest, or cost, depending on the context, expressed in nominal dollars;
- **Net cashflow:** income excluding interest less cost, expressed in nominal dollars;

- **Present value:** the equivalent value, as of a specified point in time and adjusted using a specified interest rate, of a future stream of payments (either income or cost). The present value of a future stream of payments may be thought of as the lump-sum amount that, if invested at the specified interest rate as of the specified point in time, together with interest earnings would be just enough to meet each of the obligations as they fall due.

All estimates in this section are based on the 75-year projections under the intermediate assumptions in *The 2010 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds* (2010 Trustees Report) (see Note 17 to the Statement of Social Insurance). The Statement of Social Insurance and the required supplementary information below are derived from estimates of future income and cost based on these assumptions and on the current *Social Security Act*, including future changes previously enacted. This information includes:

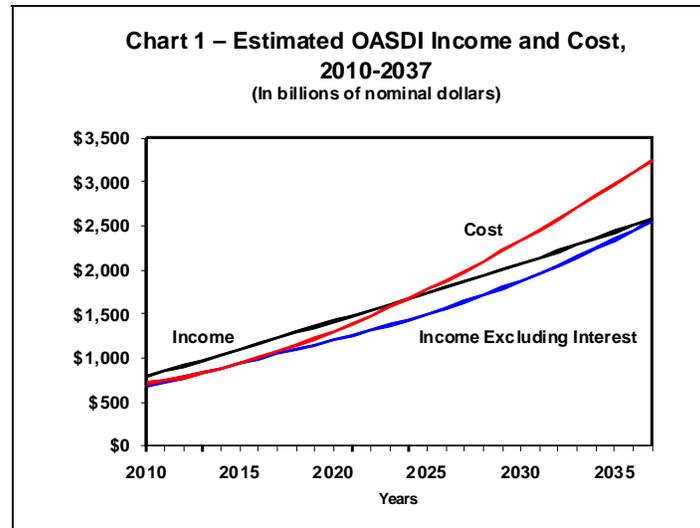
- (1) actuarial present values of future estimated cost for, and estimated income (excluding interest) from, or on behalf of, current and future program participants;
- (2) estimated annual income (excluding interest) and cost in nominal dollars and as percentages of taxable payroll and GDP;
- (3) the ratio of estimated covered workers to estimated beneficiaries; and
- (4) an analysis of the sensitivity of the projections to changes in selected assumptions.

Sustainable Solvency - Based on the estimates of income and cost presented in the Statement of Social Insurance, the OASDI program would not meet the criteria for sustainable solvency. In order to meet the criteria for sustainable solvency, the program would need to be able to pay all scheduled benefits in full on a timely basis and maintain assets in the combined OASI and DI Trust Funds at all times within the 75-year projection period. In addition, the assets in the combined OASI and DI Trust Funds would need to be stable or rising as a percentage of annual program cost at the end of the period.

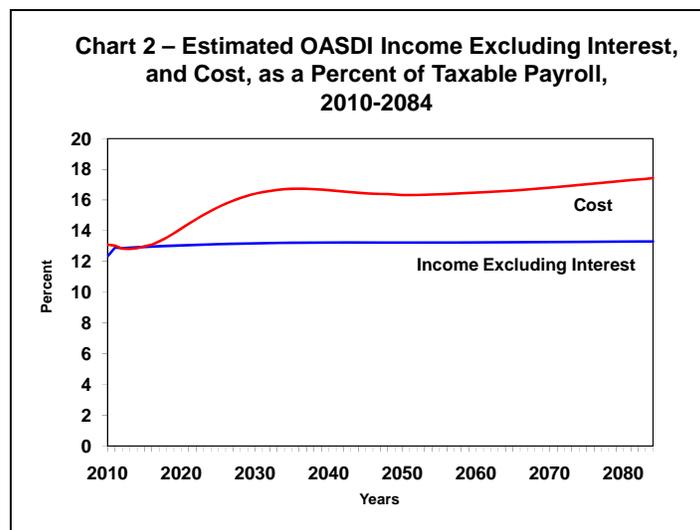
Cashflow Projections - Chart 1 shows actuarial estimates of OASDI annual income, income excluding interest, and cost for 2010-2037 in nominal dollars. These estimates are only displayed through 2037, the year that the combined OASI and DI Trust Funds are projected to become exhausted. After the point of such exhaustion, no interest earnings would be available. Moreover, because the program lacks the authority to borrow to continue paying benefits, benefit payments would be limited to the available tax income. Thus, extension of this chart, which is intended to illustrate the tax revenue and interest accruals available to meet the cost of scheduled benefit obligations under the program, beyond the point of combined OASI and DI Trust Fund exhaustion, would be inappropriate unless the cost of scheduled benefits was replaced by the amount of benefits that would be payable.

The estimates are for the open-group population, all persons projected to participate in the OASDI program as covered workers or beneficiaries, or both, during that period. Thus, the estimates include payments from, and on behalf of, workers who will enter covered employment during the period as well as those already in covered employment at the beginning of that period. They also include cost for such workers and their dependents during that period.

As Chart 1 shows, estimated cost starts to exceed income (including interest) in 2025. This occurs because of a variety of factors including the retirement of the “baby boom” generation, the relatively small number of people born during the subsequent period of lower birth rates, and the projected increases in life expectancy, which increase the average number of years of receiving benefits relative to the average number of years of paying taxes. Estimated annual cost is projected to exceed income excluding interest in 2010 and 2011, to be less than income excluding interest in 2012 through 2014, and to exceed income excluding interest in 2015 and later. In 2010, 2011, and years after 2014, to meet all OASDI cost on a timely basis, the combined OASI and DI Trust Funds will need to redeem Treasury securities. This redemption will differ from the situation of prior years when the combined OASI and DI Trust Funds had been net lenders to the General Fund of the Treasury. To finance this redemption, the government would have to increase its borrowing from the public, raise taxes (other than OASDI payroll taxes), and/or reduce expenditures (other than OASDI cost). Alternatively, the government could make this redemption unnecessary by changing the law to increase OASDI taxes and/or reduce OASDI scheduled benefits.



Percentage of Taxable Payroll - Chart 2 shows estimated annual income excluding interest and cost expressed as percentages of taxable payroll. As presently constructed, the program receives most of its income from the 6.2 percent payroll tax that employees and employers each pay on taxable wages and salaries (for a combined payroll tax rate of 12.4 percent), and the 12.4 percent that is paid on taxable self-employment income. In years 2012-14, estimated annual cost is less than estimated annual income, excluding interest, whereas in all other years it is more. After 2015, estimated cost, expressed as a percentage of taxable payroll, increases rapidly through 2035 and is rising at the end of the 75-year period. The estimated income at the end of the 75-year period is sufficient to cover 75 percent of the estimated cost.

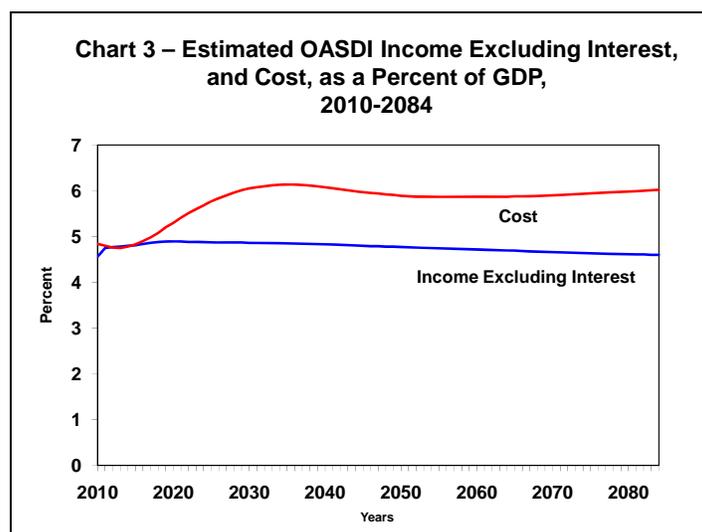


Actuarial Balance - The Statement of Social Insurance shows that the present value of the excess of income (excluding interest) over cost for the 75-year period is -\$7,947 billion. If augmented by the combined OASI and DI Trust Fund assets at the start of the period (January 1, 2010), it is -\$5,406 billion. This excess does not equate to the actuarial balance in the Trustees Report of -1.92 percent of taxable payroll because the actuarial balance includes the cost of attaining a target combined OASI and DI Trust Fund level at the end of the period equal to total projected cost for the 76th year of the period.

One interpretation of this negative actuarial balance (-1.92 percent of taxable payroll) is that it represents the magnitude of an increase in the combined payroll tax rate for the entire 75-year period that would allow the

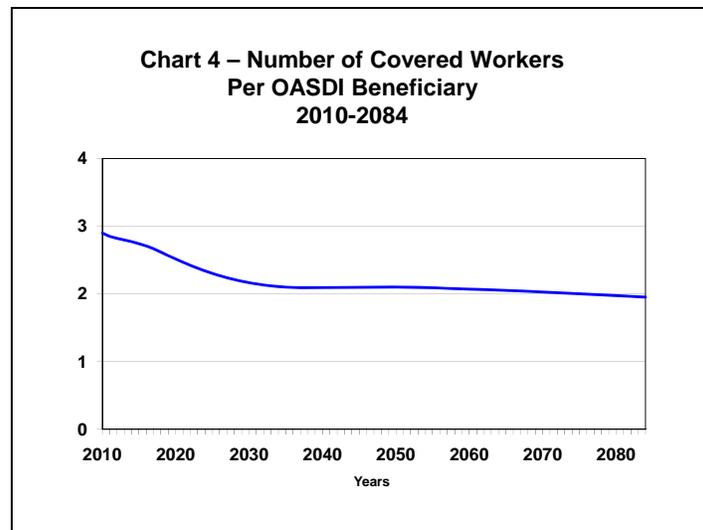
combined trust funds to remain solvent throughout the period with a small amount of assets remaining in the combined trust funds at the end of the period. The combined payroll tax rate is 12.4 percent today and is currently scheduled to remain at that level. An increase of 1.92 percentage points in this rate for each year of the 75-year projection period (0.96 percentage points for employees and employers each, resulting in a total rate of 14.32 percent or a rate of 7.16 percent for each) is estimated to produce enough income to pay all benefits due under current law for that period. Alternatively, all benefits during this period could be reduced by about 12.0 percent on average (or there could be some combination of both tax increases and benefit reductions) to achieve solvency throughout the period.

Percentage of Gross Domestic Product (GDP) - Chart 3 shows estimated annual income excluding interest and cost expressed as percentages of GDP. Analyzing these cashflows in terms of percentage of the estimated GDP, which represents the total value of goods and services produced in the United States, provides a measure of the cost of the OASDI program in relation to the size of the national economy that must finance it.



In 2009, OASDI cost was about \$686 billion, which was about 4.8 percent of GDP. The cost of the program (based on current law) rises rapidly to 6.0 percent of GDP in 2030, hits a peak of 6.1 percent of GDP in 2035, declines to a low of 5.9 percent in 2055, and then slowly increases, reaching 6.0 percent of GDP by 2084. The rapid increase from 2010 to 2027 will occur because baby boomers will become eligible for OASDI benefits, lower birth rates will result in fewer workers per beneficiary, and beneficiaries will continue to live longer.

Ratio of Workers to Beneficiaries - Chart 4 shows the estimated number of covered workers per OASDI beneficiary using the Trustees' intermediate assumptions. As defined by the Trustees, covered workers are persons having earnings creditable for OASDI purposes on the basis of services for wages in covered employment and/or on the basis of income from covered self-employment. The estimated number of workers per beneficiary will decline from 3.0 in 2009 to 2.0 in 2084.



SENSITIVITY ANALYSIS

Projections of the future financial status of the OASDI program depend on many demographic and economic assumptions, including fertility, mortality, net immigration, average wages, inflation, and interest rates on Treasury securities. The income will depend on how these factors affect the size and composition of the working population and the level and distribution of wages and earnings. Similarly, the cost will depend on how these factors affect the size and composition of the beneficiary population and the general level of benefits. Because perfect long-range projections of these factors are impossible, this section is included to illustrate the sensitivity of the long-range projections to changes in assumptions by analyzing six key assumptions: total fertility rate, mortality, net immigration, real-wage differential, consumer price index, and real interest rate. The range of values chosen for the sensitivity analysis is intended to present a reasonable range within which future experience is generally expected to fall, on average over long time periods. The range of values is not intended to represent any particular probability interval around the intermediate assumptions.

For this analysis, the intermediate assumptions in the 2010 Trustees Report are used as the reference point, and each selected assumption is varied individually. All present values are calculated as of January 1, 2010, and are based on estimates of income and cost during the 75-year projection period 2010-2084. In this section, for brevity, “income” means “income excluding interest.”

For each assumption analyzed, one table and two charts are presented. The table shows the present value of the estimated excess of OASDI income over cost based on each of three selected values of the assumption being analyzed. The middle values provided correspond to the intermediate assumption of the Trustees. The first chart shows estimated annual OASDI net cashflow based on each of those values. The second chart, labeled with the suffix “A,” shows the present value of each annual net cashflow amount shown in the first chart and is included to facilitate interpreting net cashflow in terms of today’s dollars. Because the calculation of present values is a discounting process, the magnitude of the present value for each year in the second chart is lower than the corresponding net cashflow amount in the first chart--positive values are less positive and negative values are less negative.

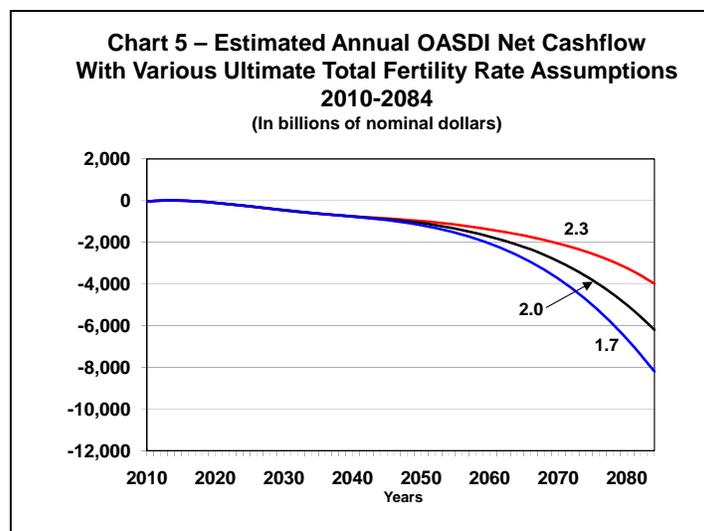
Sensitivity of program cost to changes in multiple assumptions is also useful. The Trustees Report presents high-cost and low-cost alternative assumption sets which combine the variations shown individually in this report. It should be noted that due to interactions, the combined effect of two or more assumption changes may not be equal to the sum of the effects shown separately. The Trustees, in their annual report, also include estimates using a stochastic model developed by the Office of the Chief Actuary. These estimates provide an additional way of analyzing variability in assumptions, income, and cost.

Total Fertility Rate - Table 1 shows the present value of the estimated excess of OASDI income over cost for the 75-year period, for each of the assumptions about the ultimate total fertility rate. These assumptions are 1.7, 2.0, and 2.3 children per woman, where 2.0 is the intermediate assumption in the 2010 Trustees Report. The total fertility rate is assumed to change gradually from its current level and to reach the selected ultimate value in 2034.

Table 1 demonstrates that, if the ultimate total fertility rate is changed from 2.0 children per woman, the Trustees' intermediate assumption, to 1.7, the shortfall for the period of estimated OASDI income relative to cost would increase to \$8,892 billion, from \$7,947 billion; if the ultimate rate were changed to 2.3, the shortfall would decrease to \$6,978 billion.

Table 1: Present Value of Estimated Excess of OASDI Income over Cost With Various Ultimate Total Fertility Rate Assumptions Valuation Period: 2010-2084			
Ultimate Total Fertility Rate	1.7	2.0	2.3
Present Value of Estimated Excess (In billions)	-\$8,892	-\$7,947	-\$6,978

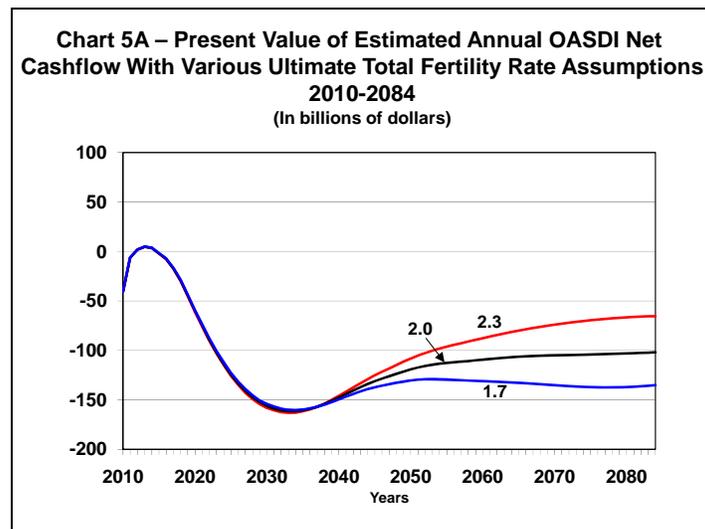
Charts 5 and 5A show estimates using the same total fertility rates used for the estimates in Table 1. Chart 5 shows the estimated annual OASDI net cashflow.



The three patterns of estimated annual OASDI net cashflow shown in Chart 5 are similar. After increasing in years 2011-13, the net cashflow estimates decrease steadily through 2084. The net cashflow estimates corresponding to all three ultimate total fertility rates are negative in years 2010-11 and increasingly negative in all years after 2014. While the fertility rate would have a substantial effect for the next 75-year period as a whole, it would have only a minor effect for years before the combined OASI and DI Trust Funds are projected to become depleted under each of these fertility assumptions. The combined trust funds are projected to be depleted in 2037 using a 2.0 or 2.3 ultimate fertility rate and in 2038 using a 1.7 ultimate fertility rate.

In the early years, higher fertility rates result in both reduced payroll taxes and increased benefits and, therefore, lower net cashflow. As the larger birth cohorts age and enter the labor force, however, the effect on payroll taxes gradually changes from a reduction to a net increase. By 2038 and for all years thereafter, increased payroll taxes more than offset increased benefits. Thus, from 2038 on, annual net cashflow based on higher fertility rates is higher (less negative) than annual net cashflow based on lower fertility rates.

Chart 5A shows the present value of the estimated annual OASDI net cashflow.



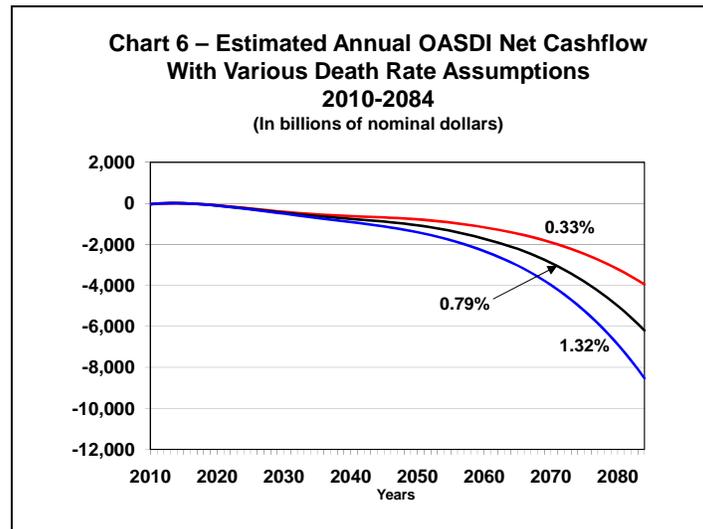
The three patterns of the present values shown in Chart 5A are similar. The present values based on all three ultimate total fertility rates are negative in years 2010-11 and negative in all years after 2014. The net cashflow estimates corresponding to a 2.0 and 2.3 ultimate fertility rate increase in years 2011-13, decrease in years 2014-33, and increase (become less negative) thereafter. The net cashflow estimates corresponding to a 1.7 ultimate fertility rate increase in years 2011-13, decrease in years 2014-34, and increase (become less negative) through 2053. For an ultimate assumed total fertility rate of 1.7, the present values are fairly stable after 2050. Based on all three ultimate total fertility rates, it would take less of an investment today to cover the annual deficit in 2035 than it would to cover the annual deficit in 2034.

Mortality - Table 2 shows the present values of the estimated excess of OASDI income over cost for the 75-year period, using various assumptions about future reductions in death rates. The analysis was developed by varying the reduction assumed to occur during 2009-2084 in death rates by age, sex, and cause of death. The reductions assumed for this period, summarized as average annual reductions in the age-sex-adjusted death rate, are 0.33, 0.79, and 1.32 percent per year, where 0.79 percent is the intermediate assumption in the 2010 Trustees Report. (The resulting cumulative decreases in the age-sex-adjusted death rate during the same period are 22, 45, and 63 percent, respectively). The life expectancy at birth, on a unisex period life table basis, is projected to rise from 77.9 in 2009 to 81.1, 84.9, and 88.8 in 2084 for average annual reductions in the age-sex-adjusted death rate of 0.33, 0.79, and 1.32 percent, respectively.

Table 2 demonstrates that, if the annual reduction in death rates is changed from 0.79 percent, the Trustees' intermediate assumption, to 0.33 percent, meaning that people die younger, the shortfall for the period of estimated OASDI income relative to cost would decrease to \$6,076 billion, from \$7,947 billion; if the annual reduction were changed to 1.32 percent, meaning that people live longer, the shortfall would increase to \$9,991 billion.

Table 2: Present Value of Estimated Excess of OASDI Income over Cost With Various Death Rate Assumptions Valuation Period: 2010-2084			
Average Annual Reduction in Death Rates (from 2009 to 2084)	0.33 Percent	0.79 Percent	1.32 Percent
Present Value of Estimated Excess (In billions)	-\$6,076	-\$7,947	-\$9,991

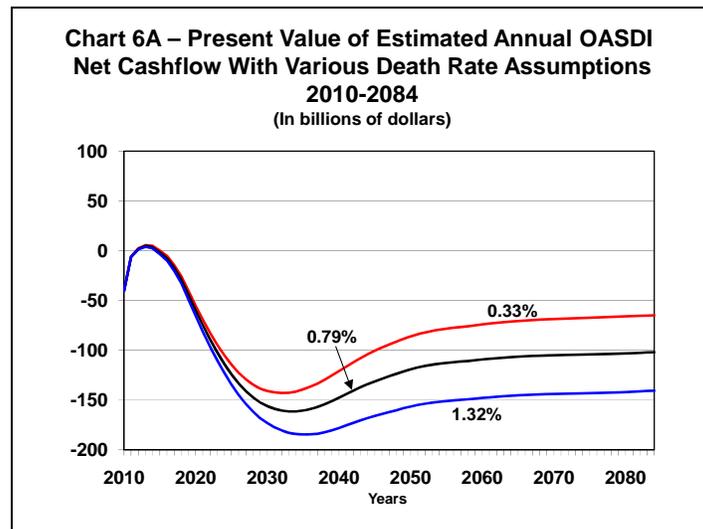
Charts 6 and 6A show estimates using the same assumptions about future reductions in death rates used for the estimates in Table 2. Chart 6 shows the estimated annual OASDI net cashflow.



The three patterns of estimated annual OASDI net cashflow shown in Chart 6 are similar. After increasing in years 2011-13, the net cashflow estimates decrease steadily through 2084. The annual net cashflow estimates for all three sets of assumptions are negative in 2010 and 2011, positive in 2012-14, and increasingly negative thereafter. Relatively little difference is discernible in the early years among the estimates of annual net cashflow based on the three assumptions about the reduction in death rates. Thereafter, differences become more apparent. Because annual death rates resulting from the three assumptions diverge steadily with time, resulting estimated annual OASDI net cashflows do so, too.

Although lower death rates result in both higher income and higher cost, cost increases more than income. For any given year, reductions in death rates at the earliest retirement eligibility age of 62 and older, which are the ages of highest death rates, increase the number of retired-worker beneficiaries (and, therefore, the amount of retirement benefits) without adding significantly to the number of covered workers (and, therefore, the amount of payroll taxes). At young ages, death rates are so low that even substantial reductions do not result in significant increases in either the number of covered workers or beneficiaries.

Chart 6A shows the present value of the estimated annual OASDI net cashflow.



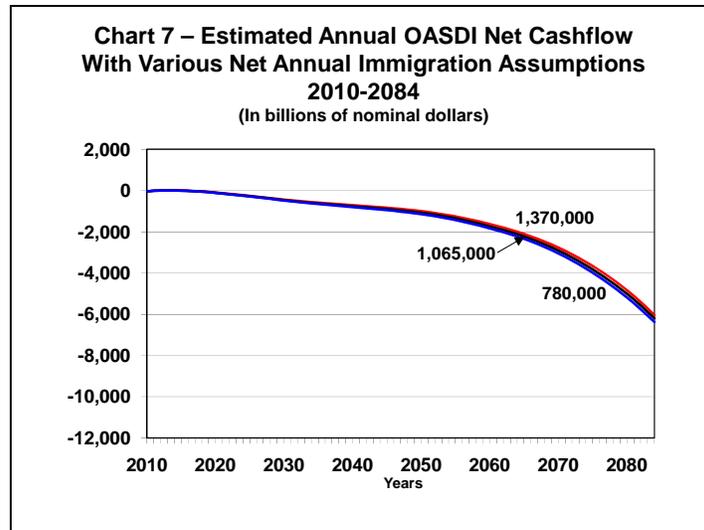
The three patterns of the present values shown in Chart 6A are similar. After increasing in years 2011-13, the present values decrease rapidly until around 2030. Under all three sets of assumptions the net cashflow estimates are negative in years 2010-11 and positive in years 2012-14. The net cashflow estimates remain positive in 2015 only for projected reductions of 0.33 percent. Present values based on all three sets of assumptions begin to increase (become less negative) in the 2030's (2033, 2034, and 2036 for projected reductions of 0.33, 0.79, and 1.32 percent per year, respectively). Thus, in terms of today's investment dollar, annual OASDI net cashflow, although still negative, begins to increase (become less negative) at that time, and continues to increase through 2084.

Net Annual Immigration - Table 3 shows the present values of the estimated excess of OASDI income over cost for the 75-year period, using various assumptions about the magnitude of annual immigration. Assumptions are made about the levels of legal immigration, legal emigration, other immigration, and other emigration. Based on these levels, it is projected that net annual immigration (legal and other) will average 780,000 persons, 1,065,000 persons, and 1,370,000 persons over the 75-year valuation period, where 1,065,000 persons is the average value based on the intermediate assumptions in the 2010 Trustees Report.

Table 3 demonstrates that, if the Trustees' intermediate immigration assumptions were changed so that the average level for the 75-year period decreased from 1,065,000 persons to 780,000 persons, the present value of the shortfall for the period of estimated OASDI income relative to cost would increase to \$8,394 billion, from \$7,947 billion. If instead, the immigration assumptions were changed so that net annual immigration would be expected to average 1,370,000 persons, the present value of the shortfall would decrease to \$7,475 billion.

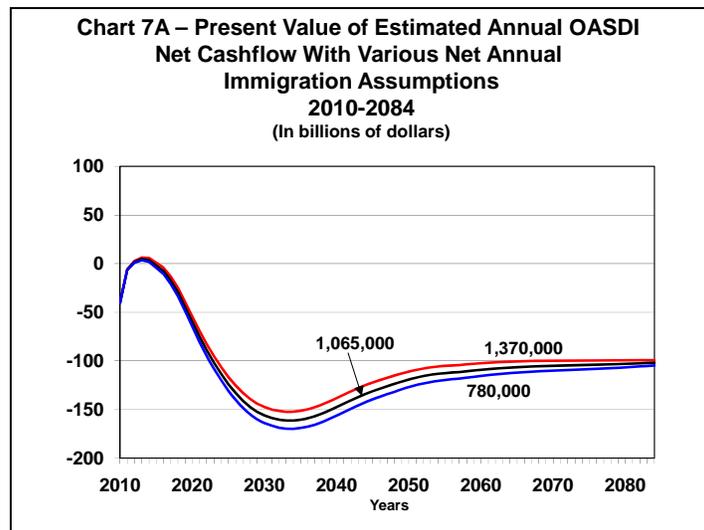
Table 3: Present Value of Estimated Excess of OASDI Income over Cost With Various 75-Year Average Net Annual Immigration Assumptions			
Valuation Period: 2010-2084			
75-Year Average Net Annual Immigration	780,000 Persons	1,065,000 Persons	1,370,000 Persons
Present Value of Estimated Excess (In billions)	-\$8,394	-\$7,947	-\$7,475

Charts 7 and 7A show estimates using the same assumptions about net annual immigration used for the estimates in Table 3. Chart 7 shows the estimated annual OASDI net cashflow.



The three patterns of estimated annual OASDI net cashflow estimates shown in Chart 7 are similar. After increasing in years 2011-13, the net cashflow estimates decrease steadily through 2084. The net cashflow estimates for all three sets of assumptions are negative in 2010 and 2011 and positive in years 2012-14. Only the net cashflow estimates corresponding to a net annual immigration level of 1,370,000 remain positive in 2015. A consistent, but slight, difference is discernible after the first few years of the projection period among the estimates of net cashflow based on the three assumptions about average annual immigration.

Chart 7A shows the present value of the estimated annual OASDI net cashflow.



The three patterns of the present values shown in Chart 7A are similar. After increasing in years 2011-13, the net cashflow estimates decrease steadily through 2033 for an average net annual immigration level of 1,065,000 and 1,370,000, and through 2034 for an average net annual immigration level of 780,000. The net cashflow estimates corresponding to all three sets of assumptions are negative in 2010 and 2011 and positive in years 2012-14. Only the net cashflow estimates corresponding to a net annual immigration level of 1,370,000 remain positive in 2015. Present values based on all three assumptions about net annual immigration increase (are less negative) from 2035 through the end of the projection period.

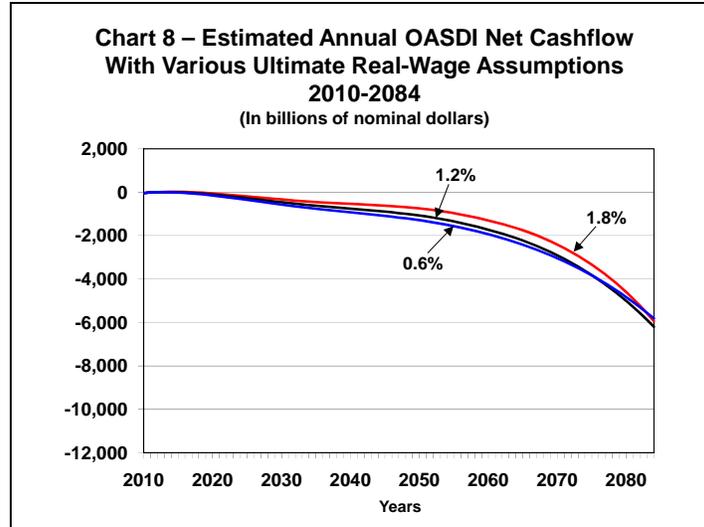
Very little difference is discernible in the early years among the estimates of present values of net annual cashflow based on the three sets of assumptions about annual immigration. However, as the effect of these three levels of net annual immigration accumulate, variations in present values become more apparent. Because immigration generally occurs at relatively young adult ages, the effects initially are similar to those of total fertility rates. There is no significant effect on beneficiaries (and, therefore, on benefits) in the early years but the effect on the numbers of workers (and, therefore, on payroll tax income) is immediate. Thus, even in the early years, the present values, year by year, are generally higher (less negative in later years) for higher net annual immigration. However, the increased payroll taxes for a given year are eventually offset by benefits paid in that year to earlier immigrant cohorts. Thus, the present values based on the three assumptions about net annual immigration become more similar at the end of the projection period.

Real-Wage Differential - The annual real-wage differential is the difference between the percentage increases in (1) the average annual wage in OASDI covered employment and (2) the average annual Consumer Price Index (CPI). The ultimate real-wage differential is the average of the annual real-wage differential for the last 65 years of the 75-year projection period. Table 4 shows the present values of the estimated excess of OASDI income over cost for the 75-year period, using various assumptions about the ultimate real-wage differential. These assumptions are that the ultimate real-wage differential will be 0.6, 1.2, and 1.8 percentage points, where 1.2 percentage point is the intermediate assumption in the 2010 Trustees Report. In each case, the ultimate annual increase in the CPI is assumed to be 2.8 percent (as used in the intermediate assumptions), yielding ultimate percentage increases in the average annual wage in covered employment of 3.4, 4.0, and 4.6 percent, respectively.

Table 4 demonstrates that, if the ultimate real-wage differential is changed from 1.2 percentage point, the Trustees' intermediate assumption, to 0.6 percentage point, the shortfall for the period of estimated OASDI income relative to cost would increase to \$9,312 billion from \$7,947 billion; if the ultimate real-wage differential were changed from 1.2 to 1.8 percentage points, the shortfall would decrease to \$5,893 billion.

Table 4: Present Value of Estimated Excess of OASDI Income over Cost With Various Ultimate Real-Wage Assumptions Valuation Period: 2010-2084			
Ultimate Annual Increase in Wages, CPI; Real Wage Differential	3.4% , 2.8%; 0.6%	4.0% , 2.8%; 1.2%	4.6% , 2.8%; 1.8%
Present Value of Estimated Excess (In billions)	-\$9,312	-\$7,947	-\$5,893

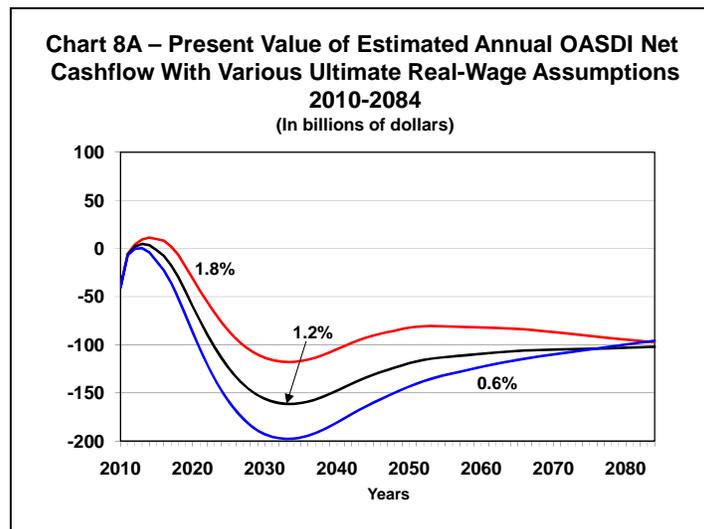
Charts 8 and 8A show estimates using the same assumptions about the ultimate real-wage differential used for the estimates in Table 4. Chart 8 shows the estimated annual OASDI net cashflow.



The three patterns of estimated net annual OASDI cashflow shown in Chart 8 increase in the first three years, and then generally decrease steadily thereafter. Estimated net cashflows are positive in years 2012-17, and 2012-14 for assumed ultimate real-wage differentials of 1.8, and 1.2 percentage points, respectively, and are negative thereafter. Estimated net cashflows are negative for all years for an assumed ultimate real-wage differential of 0.6 percentage point.

Differences among the estimates of annual net cashflow based on the three assumptions about the ultimate real-wage differential become apparent early in the projection period. Higher real-wage differentials increase both wages and initial benefit levels. Because the effects on wages and, therefore, on payroll taxes are immediate, while the effects on benefits occur with a substantial lag, annual net cashflow is higher for higher assumed real-wage differentials. In the early years, when the effects on benefits are quite small and the effects on wages are compounding, the patterns of the estimates of annual net cashflow based on the three assumptions diverge fairly rapidly. However, toward the end of projection period, annual net cashflow becomes lower (more negative) for higher assumed real-wage differentials. This occurs because benefits would then be more fully realized at a time when the projected cost substantially exceeds income excluding interest. These effects are depicted by the patterns in Chart 8A crossing during the later years of the projection period.

Chart 8A shows the present value of the estimated annual OASDI net cashflow.



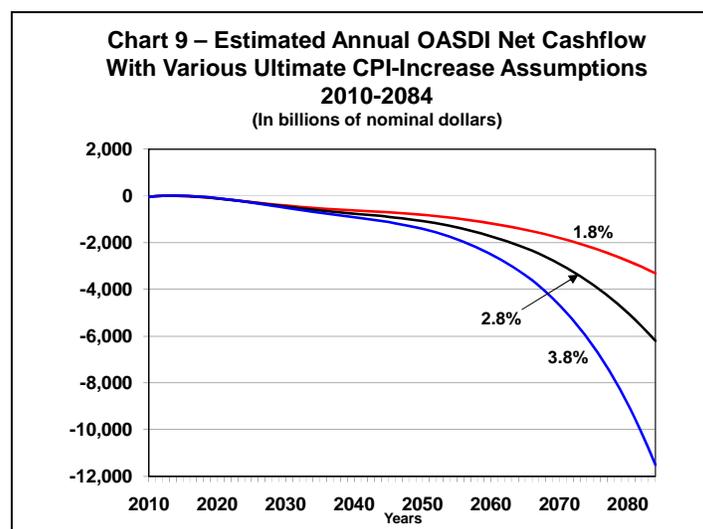
After increasing in years 2011-13, the present values shown in Chart 8A decrease through 2033. Estimated net cashflows are positive in years 2012-17, and 2012-14 for assumed ultimate real-wage differentials of 1.8, and 1.2 percentage points, respectively, and are negative thereafter. Estimated net cashflows are negative for all years for an assumed ultimate real-wage differential of 0.6 percentage points. Present values based on all three assumptions begin to increase (become less negative) in 2034. Thus, in terms of today’s investment dollar, annual OASDI net cashflow, although still negative, begins to increase (become less negative) at that time. For the assumed real-wage differential of 1.8 percentage points, the present values continue increasing until 2055 when decreases begin again. The present values for the other two assumptions continue increasing throughout the remaining projection period. The crossover of the patterns that occurs during the later years of the projection period in Chart 8 is also evident in the present value patterns.

Consumer Price Index - Table 5 shows the present values of the estimated excess of OASDI income over cost for the 75-year period, using various assumptions about the ultimate rate of change in the CPI. These assumptions are that the ultimate annual increase in the CPI will be 1.8, 2.8, and 3.8 percent, where 2.8 percent is the intermediate assumption in the 2010 Trustees Report. In each case, the ultimate real-wage differential is assumed to be 1.2 percentage point (as used in the intermediate assumptions), yielding ultimate percentage increases in average annual wages in covered employment of 3.0, 4.0, and 5.0 percent, respectively.

Table 5 demonstrates that, if the ultimate annual increase in the CPI is changed from 2.8 percent, the Trustees’ intermediate assumption, to 1.8 percent, the shortfall for the period of estimated OASDI income relative to cost would increase to \$8,444 billion, from \$7,947 billion; if the ultimate annual increase in the CPI were changed to 3.8 percent, the shortfall would decrease to \$7,400 billion. This seemingly counter-intuitive result--that higher CPI-increases result in decreased shortfalls, and vice versa--is explained below.

Table 5: Present Value of Estimated Excess of OASDI Income over Cost With Various Ultimate CPI-Increase Assumptions Valuation Period: 2010-2084			
Ultimate Annual Increase in Wages, CPI; Real Wage Differential	3.0% , 1.8% ; 1.2%	4.0% , 2.8% ; 1.2%	5.0% , 3.8% ; 1.2%
Present Value of Estimated Excess (In billions)	-\$8,444	-\$7,947	-\$7,400

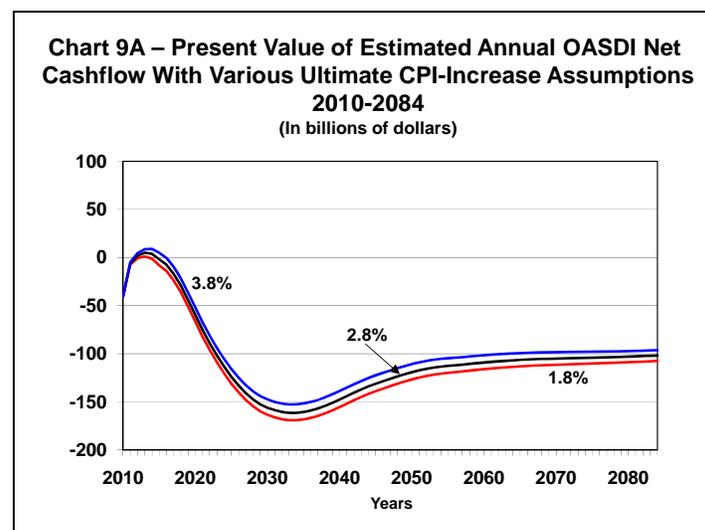
Charts 9 and 9A show estimates using the same assumptions about the ultimate annual increase in the CPI used for the estimates in Table 5. Chart 9 shows the estimated annual OASDI net cashflow.



The three patterns of estimated annual OASDI net cashflow shown in Chart 9 are similar. After increasing in the first three years, the net cashflow estimates generally decrease steadily through 2084. Annual net cashflow is positive for years 2013, 2012-14, and 2012-15 for assumed ultimate annual increases in the CPI of 1.8 percent, 2.8 percent, and 3.8 percent respectively. Larger increases in the CPI with the same real-wage differentials produce higher wages, which produce both higher payroll taxes and higher benefits based on these higher wages. Larger increases in the CPI also produce higher benefits directly, by increasing the cost-of-living adjustments to benefits. Thus, larger increases in the CPI result in both higher income and higher cost in nominal dollars.

Larger increases in the CPI cause earnings and income to increase sooner, and thus by more in each year, than benefits and cost. The effect on wages and payroll taxes occurs immediately, but the effect on benefits occurs with a lag. Initially (through 2021) the larger percentage increase in CPI results in a larger nominal-dollar increase in income, so net cashflow is increased for higher inflation in Chart 9. However, shortly after 2021, the lines in Chart 9 cross, indicating that net cashflow becomes lower (more negative) for higher assumed increases in the CPI. This occurs because program income begins to fall well below program cost, and thus the larger percentage increases in CPI eventually produce smaller nominal-dollar increases in income than in program cost.

Chart 9A shows the present value of the estimated annual OASDI net cashflow.



The three patterns of the present values shown in Chart 9A are similar. After increasing in the first three years, the net cashflow estimates generally decrease through 2033. Annual net cashflow is positive for years 2013, 2012-14, and 2012-15 for assumed ultimate annual increases in the CPI of 1.8 percent, 2.8 percent, and 3.8 percent respectively. Present values begin to increase (become less negative) in 2034 for all three assumptions. Thus, in terms of today's investment dollar, annual OASDI net cashflow, although still negative, begins to increase (become less negative) at that time, and continue to increase through 2084.

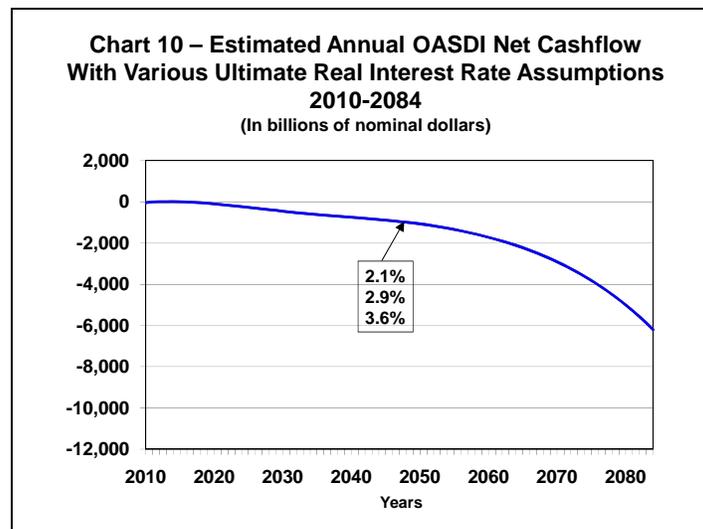
The magnitudes of the present values in Chart 9A are lower, year by year, than the amounts in Chart 9 because of the discounting process used for computing present values. This would be the case even if the nominal interest rates on which the present values are based were assumed to be the same for all three patterns of annual net cashflow. For this analysis, however, larger increases in the CPI are combined with the same assumed real interest rates, thereby producing higher nominal interest rates. The effect of these higher interest rates is to reduce the magnitudes of the present values of annual net cashflow even more--the present values of positive annual net cashflow become less positive, and the present values of negative annual net cashflow become less negative. The compounding effect of the higher interest rates is strong enough, relative to the factors increasing benefits, to reduce the magnitudes of the present values of the negative annual net cashflow of the later years sufficiently to eliminate the crossover of the patterns that occurred in Chart 9.

Real Interest Rate - Table 6 shows the present values of the estimated excess of OASDI income over cost for the 75-year period, using various assumptions about the ultimate annual real interest rate for special-issue Treasury obligations sold to the OASI and DI Trust Funds. These assumptions are that the ultimate annual real interest rate will be 2.1, 2.9, and 3.6 percent, where 2.9 percent is the intermediate assumption in the 2010 Trustees Report. Changes in real interest rates change the present value of cashflow, even though the cashflow itself does not change.

Table 6 demonstrates that, if the ultimate real interest rate is changed from 2.9 percent, the Trustees' intermediate assumption, to 2.1 percent, the shortfall for the period of estimated OASDI income relative to cost, when measured in present-value terms, would increase to \$10,579 billion, from \$7,947 billion; if the ultimate annual real interest rate were changed to 3.6 percent, the present-value shortfall would decrease to \$6,303 billion.

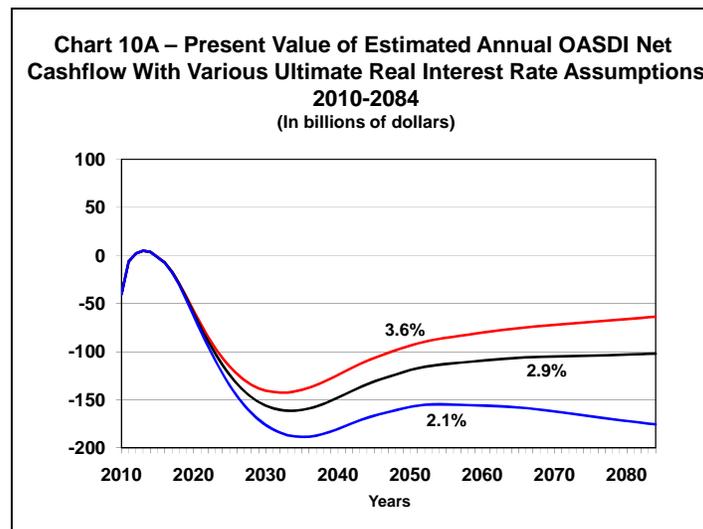
Table 6: Present Value of Estimated Excess of OASDI Income over Cost With Various Ultimate Real-Interest Assumptions Valuation Period: 2010-2084			
Ultimate Annual Real Interest Rate	2.1 Percent	2.9 Percent	3.6 Percent
Present Value of Estimated Excess (In billions)	-\$10,579	-\$7,947	-\$6,303

Charts 10 and 10A show estimates using the same assumptions about the ultimate annual real interest rate used for the estimates in Table 6. Chart 10 shows the estimated annual OASDI net cashflow.



The three patterns of estimated annual OASDI net cashflow (which does not include interest) shown in Chart 10 are identical, because interest rates do not affect cashflow. After increasing in years 2011-13, the present values decrease steadily through 2084. Annual cashflows are only positive in years 2012-14.

Chart 10A shows the present value of the estimated annual OASDI net cashflow.



The three patterns of the present values shown in Chart 10A are similar. After increasing in years 2011-13, the present values decrease rapidly until around 2030. Annual cashflows are only positive in years 2012-14. Present values based on all three assumptions begin to increase (become less negative) in the 2030's (2036, 2034, and 2033 for assumed ultimate real interest rates of 2.1, 2.9, and 3.6 percent, respectively). Thus, in terms of today's investment dollar, annual OASDI net cashflow, although still negative, begins to increase (become less negative) at that time. For the assumed real interest rate of 2.1 percent, the present values continue increasing through 2054, then decrease thereafter. The present values for the other two assumptions continue increasing throughout the remaining projection period.

This page was intentionally left blank