REQUIRED SUPPLEMENTARY INFORMATION

Required Supplementary Information: Combining Schedule of Budgetary Resources for the Year Ended September 30, 2023

(Dollars in Millions)

	OASI	DI	SSI	Other	LAE	Combined
Budgetary Resources (Note 15)						
Unobligated balance from prior year budget authority, net	$ 359	$ 5	$ 5,014	$ 59	$ 1,192	$ 6,629
Appropriations (discretionary and mandatory)	1,214,363	158,205	64,349	50,807	32	1,487,756
Spending authority from offsetting collections (discretionary and mandatory)	0	0	3,118	0	14,193	17,311
Total Budgetary Resources	$ 1,214,722	$ 158,210	$ 72,481	$ 50,866	$ 15,417	$ 1,511,696
Status of Budgetary Resources						
New obligations and upward adjustments						
Direct	$ 1,214,722	$ 158,210	$ 65,548	$ 50,802	$ 14,362	$ 1,503,644
Reimbursable	0	0	3,123	0	75	3,198
New obligations and upward adjustments (total)	1,214,722	158,210	68,671	50,802	14,437	1,506,842
Unobligated Balance, End of Year						
Apportioned, unexpired accounts	0	0	3,437	35	493	3,965
Unapportioned, unexpired accounts	0	0	371	0	6	377
Unexpired unobligated balance, end of year	0	0	3,808	35	499	4,342
Expired unobligated balance, end of year	0	0	2	29	481	512
Unobligated balance, end of year (total)	0	0	3,810	64	980	4,854
Total Budgetary Resources	$ 1,214,722	$ 158,210	$ 72,481	$ 50,866	$ 15,417	$ 1,511,696
Outlays, Net						
Outlays, net (discretionary and mandatory)	$ 1,202,046	$ 152,519	$ 64,728	$ 50,802	$ (16)	$ 1,470,079
Distributed offsetting receipts	(49,961)	(1,046)	(239)	(2,505)	0	(53,751)
Agency Outlays, Net (Discretionary and Mandatory)	$ 1,152,085	$ 151,473	$ 64,489	$ 48,297	$ (16)	$ 1,416,328

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 2022, the Social Security Administration paid OASDI benefits to about 66 million beneficiaries. The laws applicable for the period determine eligibility and benefit amounts. Current law provides that monthly benefit payments for workers and their eligible dependents or survivors are based on 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 replace a larger proportion of earned income for lower earners than for higher earners. Changes in laws governing the program may alter the amount of OASDI income (e.g., payroll taxes) and benefits.

Program Finances and Sustainability

As discussed in Note 9 to the Consolidated Financial Statements, "Benefits Due and Payable" on the balance sheet for unpaid amounts of OASDI benefits due to recipients on or before that date includes a liability of approximately $140 billion as of September 30, 2023 ($122 billion as of September 30, 2022). We paid virtually all of this amount in October 2023. Also, the "investments in Treasury securities" recognizes an asset of $2,817 billion as of September 30, 2023 ($2,838 billion as of September 30, 2022). These investments are the combined Old-Age and Survivors Insurance (OASI) and Disability Insurance (DI) Trust Fund asset reserves, and 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 Investments, 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, 2023 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 there is no liability on the balance sheet for future obligations beyond those due at the reporting date, we present actuarial estimates of the long-range financial status of the OASDI program. 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 tax on scheduled OASDI benefits; interest income from Treasury securities held as reserves of the OASI and DI Trust Funds; and miscellaneous reimbursements from the General Fund of the Treasury;
- **Income excluding interest (Noninterest Income)**: income, as defined above, excluding the interest income from Treasury securities held as reserves 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;
- **Cash flow**: depending on the context, either income, noninterest income, or cost;
- **Net cash flow**: noninterest income less cost; and
- **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 2023 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds* (2023 Trustees Report) (see Note 17 to the Statements of Social Insurance). The Statements of Social Insurance, the Statements of Changes in Social Insurance Amounts, 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. The information provided in this section includes:

(1) 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, income (excluding interest), and cost as percentages of taxable payroll and gross domestic product (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.

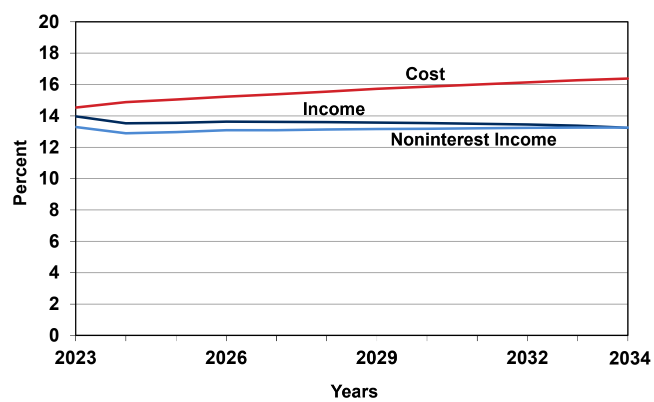
Sustainable Solvency - Based on the estimates of income and cost presented in the Statements of Social Insurance, the OASDI program does not meet the criteria for sustainable solvency. To meet the criteria for sustainable solvency, the program must be able to pay all scheduled benefits in full on a timely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

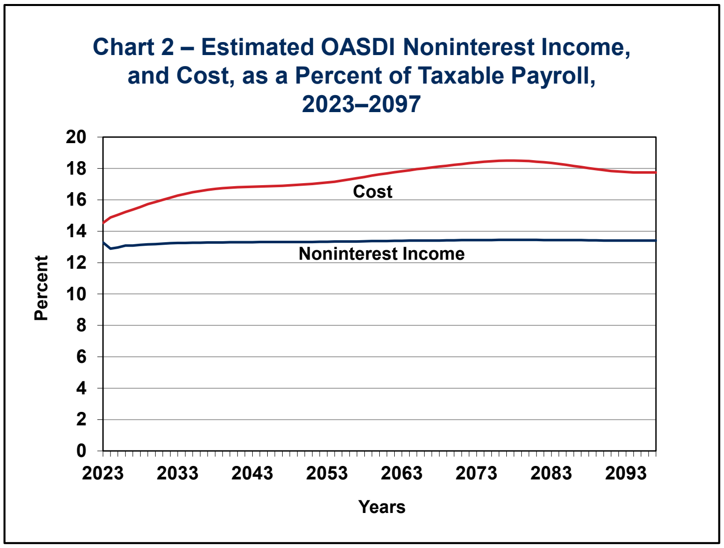
Cash Flow Projections - OASDI noninterest income and cost are estimated for each year from 2023 through 2097. Charts 1 through 4 show annual cash flow projections for the OASDI program. However, income including interest is only estimated through 2034, the year that the reserves in the combined OASI and DI Trust Funds are projected to become depleted. After the point of depletion, 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 (noninterest income). Therefore, displaying annual income levels (including interest) beyond the point of combined OASI and DI Trust Fund depletion would be inappropriate unless the cost of scheduled benefits was replaced by the amount of benefits that would be payable.

Estimates are for the open-group population (i.e., all persons projected to participate in the OASDI program as covered workers or beneficiaries, or both during that period). Therefore, 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 the cost of scheduled benefits for such workers and their dependents during that period.

Amounts as a Percentage of Taxable Payroll - Chart 1 shows estimated annual income, noninterest income, and cost through 2034 expressed as percentages of taxable payroll. Chart 2 is an extension of Chart 1, showing estimated annual noninterest income and cost through 2097 expressed as percentages of taxable payroll.

Chart 1 – Estimated OASDI Income, Noninterest Income, and Cost, as a Percent of Taxable Payroll, 2023–2034





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. Prior to 2021, income including interest exceeded cost in every year since 1983. Beginning in 2021, cost exceeded income including interest. As Chart 1 shows, estimated cost continues to exceed estimated income excluding interest in years 2023 through 2034. As Chart 2 shows, estimated cost, expressed as a percentage of taxable payroll, increases through 2078, declines slowly in years 2079-2096, and then increases slightly in 2097 (the last year of the 75-year projection period). The estimated income at the end of the 75-year period is sufficient to cover 74 percent of the estimated cost.

The increase in estimated cost through 2078 occurs because of a variety of factors, including the ongoing 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. The decrease in estimated cost after 2078 occurs as the relatively smaller generations born during the period of reduced birth rates following the recession of 2007–2009 increasingly begin to retire.

Estimated annual cost is projected to exceed income in all years of the projection period. In any year, to meet all OASDI cost on a timely basis, the combined OASI and DI Trust Funds will need to redeem Treasury securities. This redemption differs from the situation of some prior years when the combined OASI and DI Trust Funds had been net lenders to the General Fund of the Treasury. The Government could finance this redemption by increasing its borrowing from the public, raising taxes (other than OASDI payroll taxes), and/or reducing 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 as needed.

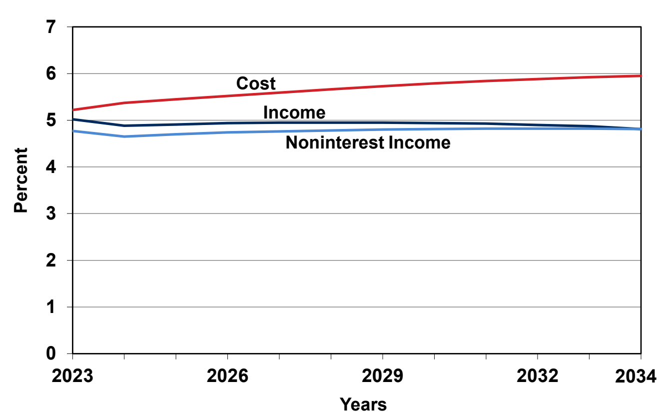
Actuarial Balance - The Statements of Social Insurance show that the present value of the excess of income (excluding interest) over cost for the 75-year period is -$25,252 billion. If augmented by the combined OASI and DI Trust Fund reserves at the start of the period (January 1, 2023), it is -$22,422 billion. This excess does not correspond to the actuarial balance in the 2023 Trustees Report of -3.61 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.

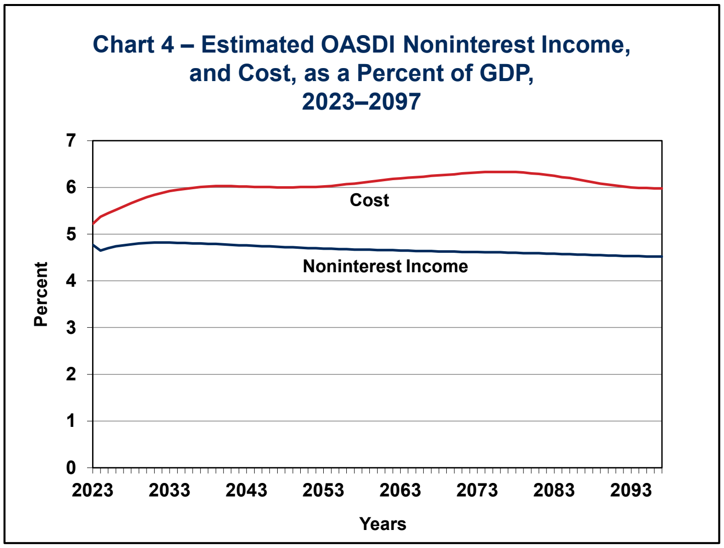
For the combined OASI and DI Trust Funds to remain solvent throughout the 75-year projection period, revenues would have to increase by an amount equivalent to an immediate and permanent payroll tax increase of 3.44 percentage points (from its current level of 12.40 percent to 15.84 percent). One interpretation of the actuarial balance is that its magnitude, 3.61 percent, should equal the necessary increase. However, the increase is different primarily because the necessary tax rate is the rate required to maintain solvency throughout the period that results in no reserves in the OASI and DI Trust Funds at the end of the period, whereas the actuarial balance incorporates an ending reserve in the OASI and DI Trust Funds equal to one year's cost. While such an increase in the payroll tax rate would cause some behavioral changes in earnings and ensuing changes in benefit levels, such changes are not included in this calculation because they are assumed to have roughly offsetting effects on OASDI actuarial status over the 75-year long-range period as a whole.

Alternatively, solvency could be achieved by reducing scheduled benefits by an amount equivalent to an immediate and permanent reduction of about 21 percent applied to all current and future beneficiaries, or about 25 percent if the reductions were applied only to newly entitled beneficiaries. Finally, some combination of tax increases and benefit reductions could be adopted.

Amounts as a Percentage of Gross Domestic Product - Chart 3 shows estimated annual income, noninterest income, and cost through 2034 expressed as percentages of GDP. Chart 4 is an extension of Chart 3, showing estimated annual noninterest income and cost through 2097 expressed as percentages of GDP. Analyzing these cash flows 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.

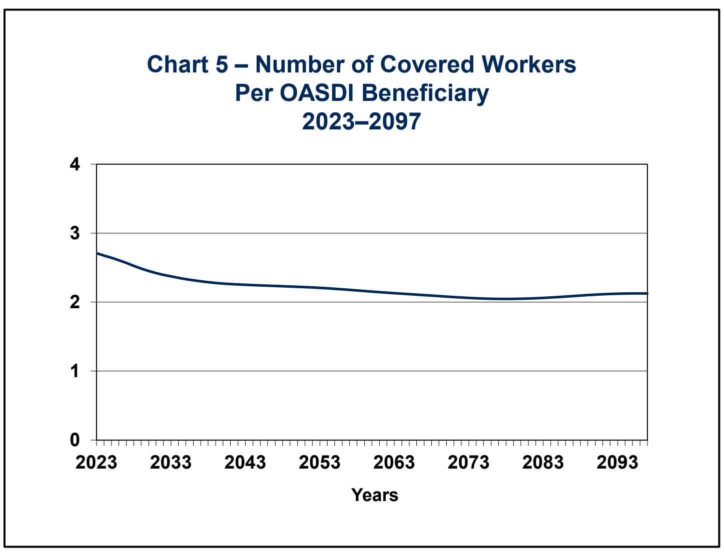
Chart 3 – Estimated OASDI Income, Noninterest Income, and Cost, as a Percent of GDP, 2023–2034





In calendar year 2022, OASDI cost was about $1,244 billion, which was about 4.9 percent of GDP. The cost of the program (based on current law) rises to a peak of 6.3 percent of GDP in 2076, then declines to 6.0 percent by 2097. The increase from 2022 to about 2040 will occur as baby boomers continue to become eligible for OASDI benefits, lower birth rates result in fewer workers per beneficiary, and beneficiaries continue to live longer. The decrease near the end of the 75-year projection period occurs as the relatively smaller generations born during the period of reduced birth rates following the recession of 2007–2009 increasingly begin to retire.

Ratio of Workers to Beneficiaries - Chart 5 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 based on services for wages in covered employment and/or income from covered self-employment. The estimated number of workers per beneficiary declines from 2.8 in 2022 to 2.1 in 2097.



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 actual experience is likely to differ from the estimated or assumed values of these factors, we include this section 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 growth, Consumer Price Index (CPI), and real interest rate. The range of values chosen for the sensitivity analysis presents a reasonable range within which we expect future experience to fall, on average, over long time periods. We do not intend the range of values to represent any particular probability interval around the intermediate assumptions, nor are the endpoints of the range intended to represent the absolute best or worst scenario.

For this analysis, we use the intermediate assumptions in the 2023 Trustees Report as the reference point. Each selected assumption is varied individually. We note that due to the interactions between assumptions, changes in any single assumption may have additional effects on other assumptions. We calculate all present values as of January 1, 2023 and base them on estimates of income and cost during the 75-year projection period 2023–2097. In this section, for brevity, “income” means “noninterest income.”

We present one table and one chart for each assumption we analyzed. 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. If the excess is negative, we refer to it as a shortfall. The middle values provided correspond to the intermediate assumption of the Trustees. The other two values correspond to the low-cost and high-cost alternative values for that individual assumption. The chart shows the present value of each annual net cash flow.

Sensitivity of program cost to changes in multiple assumptions is also useful. The 2023 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 the uncertainty and variability in assumptions, income, and cost.

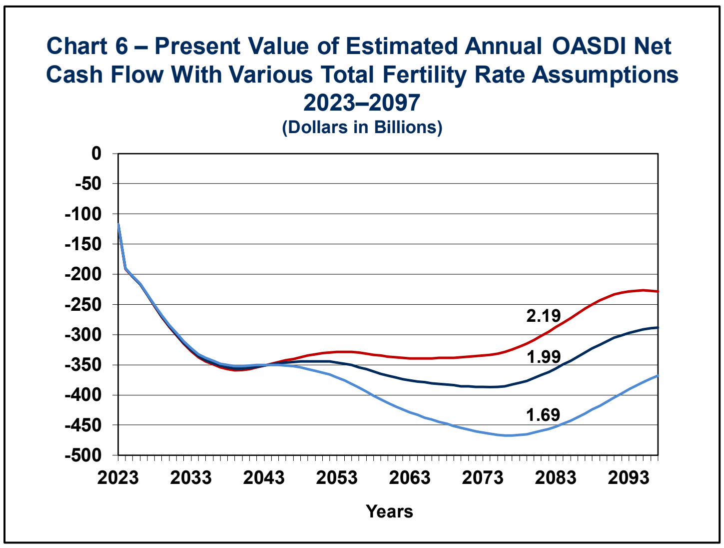
Total Fertility Rate - Table 1 shows the present value of the estimated excess of OASDI income over cost for the 75-year period, for each of the three sets of assumptions about the total fertility rate. The average annual total fertility rates for the period 2033 through 2097 are 1.69, 1.99, and 2.19 children per woman, where 1.99 is the intermediate summary value for the 2023 Trustees Report. The total fertility rate under all three sets of total fertility rate assumptions changes gradually from its current low level and will reach the ultimate value of 1.70, 2.00, and 2.20, respectively in 2056.

Table 1 demonstrates that if the average annual total fertility rate were changed from 1.99 children per woman, consistent with the Trustees' intermediate assumption, to 1.69, the shortfall for the period of estimated OASDI income relative to cost would increase to $28,599 billion from $25,252 billion; if the average annual total fertility rate changed to 2.19, the shortfall would decrease to $22,884 billion.

Table 1: Present Value of Estimated Excess of OASDI Income over Cost With Various Total Fertility Rate Assumptions Valuation Period: 2023–2097

Average Total Fertility Rate (for 2033 through 2097)	1.69	1.99	2.19
Present Value of Estimated Excess (Dollars in Billions)	$(28,599)	$(25,252)	$(22,884)

Using the same total fertility rates used for the estimates in Table 1, Chart 6 shows the present value of the estimated annual OASDI net cash flows.



The three patterns of the present values shown in Chart 6 are similar. Under all three sets of assumptions, the present values are negative in all years of the 75-year projection period. The net cash flow estimates corresponding to all three sets of fertility rate assumptions decrease rapidly into the 2030s and then begin to increase (become less negative) in 2041. The net cash flow estimates corresponding to the average total fertility rate of 1.69 increase in 2041-2044, decrease in years 2045–2077, and then increase through 2097. The net cash flow estimates corresponding to the average total fertility rate of 1.99 increase in years 2041–2051, decrease in years 2052–2074, and then increase through 2097. The net cash flow estimates corresponding to the average total fertility rate of 2.19 increase in years 2041-2054, decrease in years 2055-2065, and increase in years 2066–2095 before a slight decrease through 2097.

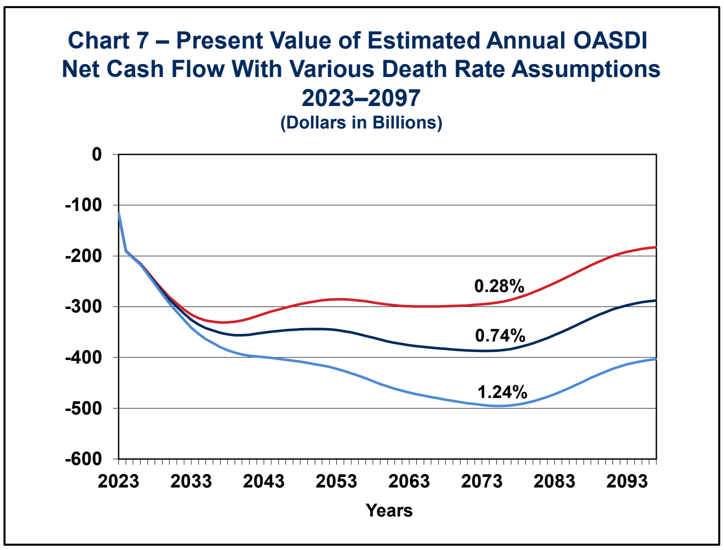
Mortality - Table 2 shows the present values of the estimated excess of OASDI income over cost for the 75-year period, using various assumptions about future reductions in death rates. We developed the analysis by varying the reduction assumed to occur in future death rates by age, sex, and cause of death. The reductions assumed for this period, summarized as average annual reductions in the age-sex-adjusted death rate from 2032 to 2097, are 0.28, 0.74, and 1.24 percent per year. The intermediate assumption in the 2023 Trustees Report is 0.74 percent. The life expectancy at birth, on a unisex period life table basis, is projected to rise from 77.6 in 2022 to 81.0, 85.3, and 89.7 in 2097 for average annual reductions in the age-sex-adjusted death rate of 0.28, 0.74, and 1.24 percent, respectively.

Table 2 demonstrates that if the annual reduction in death rates were changed from 0.74 percent, the Trustees' intermediate assumption, to 0.28 percent, meaning that people die younger, the shortfall for the period of estimated OASDI income relative to cost would decrease to $20,460 billion from $25,252 billion; if the annual reduction were changed to 1.24 percent, meaning that people live longer, the shortfall would increase to $30,914 billion.

Table 2: Present Value of Estimated Excess of OASDI Income over Cost With Various Death Rate Assumptions Valuation Period: 2023–2097

Average Annual Reduction in Death Rates (from 2032 to 2097)	0.28 Percent	0.74 Percent	1.24 Percent
Present Value of Estimated Excess (Dollars in Billions)	$(20,460)	$(25,252)	$(30,914)

Using the same assumptions about future reductions in death rates used for the estimates in Table 2, Chart 7 shows the present value of the estimated annual OASDI net cash flows.



The three patterns of the present values shown in Chart 7 are similar. Under all three sets of assumptions, the net cash flow estimates are negative in all years of the 75-year projection period. The net cash flow estimates corresponding to all three sets of assumptions decrease rapidly into the 2030s. The net cash flow estimates corresponding to a 1.24 percent average annual reduction in the age-sex-adjusted death rate continue decreasing at a slower pace through 2075 before increasing (becoming less negative) through 2097. The net cash flow estimates corresponding to a 0.74 percent average annual reduction increase in years 2041–2051, decrease in years 2052–2074, and then increase through 2097. The net cash flow estimates corresponding to a 0.28 percent average annual reduction increase in years 2038–2054, briefly decrease in years 2055–2065, and then increase through 2097.

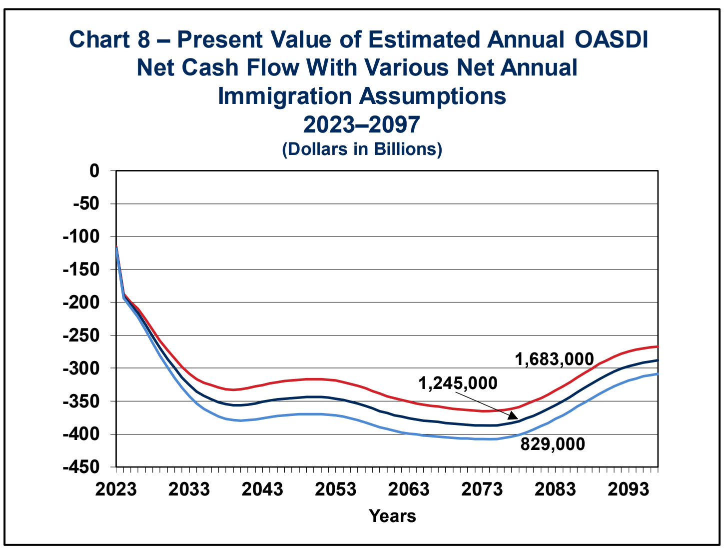
Net Annual Immigration - Table 3 shows the present values of the estimated excess of OASDI income over cost for the 75-year period, using various assumptions about the magnitude of annual immigration. The immigration assumptions include the levels of lawful permanent resident (LPR) immigration, legal emigration, other-than-LPR immigration, and other-than-LPR emigration. Based on these levels, projected net annual immigration (LPR and other-than-LPR) will average 829,000 persons, 1,245,000 persons, and 1,683,000 persons for the period 2033 through 2097. The average value based on the intermediate assumptions in the 2023 Trustees Report is 1,245,000 persons.

Table 3 demonstrates that if the Trustees' intermediate immigration assumptions were changed so that the average level for the period 2033 through 2097 decreased from 1,245,000 persons to 829,000 persons, the present value of the shortfall for the period of estimated OASDI income relative to cost would increase to $26,808 billion from $25,252 billion. If, instead, the immigration assumptions were changed so that net annual immigration would be expected to average 1,683,000 persons, the present value of the shortfall would decrease to $23,624 billion.

Table 3: Present Value of Estimated Excess of OASDI Income over Cost With Various 75-Year Average Net Annual Immigration Assumptions Valuation Period: 2023–2097

Average Net Annual Immigration (for 2033 through 2097)	829,000 Persons	1,245,000 Persons	1,683,000 Persons
Present Value of Estimated Excess (Dollars in Billions)	$(26,808)	$(25,252)	$(23,624)

Using the same assumptions about net annual immigration used for the estimates in Table 3, Chart 8 shows the present value of the estimated annual OASDI net cash flows.



The three patterns of the present values shown in Chart 8 are similar. Under all three sets of assumptions, the net cash flow estimates are negative in all years of the 75-year projection period. The net cash flow estimates corresponding to all three sets of assumptions decrease rapidly into the 2030s and then begin to increase (become less negative) around 2040. Therefore, in terms of today's investment dollar, annual OASDI net cash flow, although still negative, begins to increase at that time. Under all three sets of assumptions, net cash flows have another period of decreasing present values in years 2052–2074 before again increasing through 2097.

Immigration generally occurs at relatively young adult ages, so there is no significant effect on beneficiaries (and, therefore, on benefits) in the early years of the projection period, but the effect on the numbers of workers (and, therefore, on payroll tax income) is immediate. Therefore, even in the early years of the projection period, the present values, year by year, are generally higher (i.e., less negative in later years) for higher net annual immigration. However, benefits paid in a given year to earlier immigrant cohorts of the projection period eventually offset the increased payroll taxes for that year. Therefore, the present values based on the three assumptions about net annual immigration become more similar at the end of the projection period.

Real Wage Growth - The annual real wage growth is the average annual real growth rate in the average wage in OASDI covered employment from 2032 to 2097. Table 4 shows the present values of the estimated excess of OASDI income over cost for the 75-year period, using various assumptions about real wage growth. These assumptions are that the average annual real growth rate will be 0.54, 1.14, and 1.74 percent. The intermediate assumption in the 2023 Trustees Report is 1.14 percent.

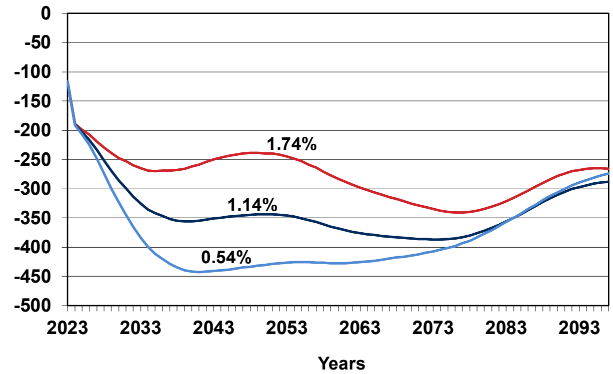
Table 4 demonstrates that if the average real wage growth were changed from 1.14 percent, the Trustees' intermediate assumption, to 0.54 percent, the shortfall for the period of estimated OASDI income relative to cost would increase to $28,173 billion from $25,252 billion; if the average real wage growth were changed from 1.14 to 1.74 percent, the shortfall would decrease to $20,708 billion.

Table 4: Present Value of Estimated Excess of OASDI Income over Cost With Various Real Wage Growth Assumptions Valuation Period: 2023–2097

Average Annual Real Wage Growth (from 2032 to 2097)	0.54 Percent	1.14 Percent	1.74 Percent
Present Value of Estimated Excess (Dollars in Billions)	$(28,173)	$(25,252)	$(20,708)

Using the same assumptions about the real growth rate in the average wage in OASDI covered employment used for the estimates in Table 4, Chart 9 shows the present value of the estimated annual OASDI net cash flows.

Chart 9 – Present Value of Estimated Annual OASDI Net Cash Flow With Various Real-Wage Growth Assumptions 2023–2097
(Dollars in Billions)



The net cash flow estimates corresponding to all three sets of assumptions are negative in all years of the 75-year projection period. The net cash flow estimates corresponding to all three sets of assumptions decrease rapidly into the 2030s and then begin to increase (i.e., become less negative) by 2042. Therefore, in terms of today's investment dollar, annual OASDI net cash flow, although still negative, begins to increase at that time. For the assumed real growth rate of 0.54 percent, the present values generally increase from 2042 through the remainder of the projection period. The net cash flow estimates corresponding to an assumed real growth rate of 1.14 percent increase in years 2041–2051, decrease in years 2052–2074, and then increase through 2097. The net cash flow estimates corresponding to an assumed real growth rate of 1.74 percent increase in years 2036–2049, decrease in years 2050–2077, increase in years 2078–2096, and then decrease slightly in 2097.

Differences among the estimates of annual net cash flow based on the three assumptions about the real wage growth become apparent early in the projection period. Higher real growth rates 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 cash flow is higher for higher assumed real wage growth. 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 cash flow based on the three assumptions diverge fairly rapidly. However, toward the end of the projection period, annual net cash flow becomes more similar for all assumed real growth rates. This occurs because benefits would then be more fully realized at a time when the projected cost substantially exceeds noninterest income. These effects are depicted by the patterns in Chart 9 coming together at the end of the projection period.

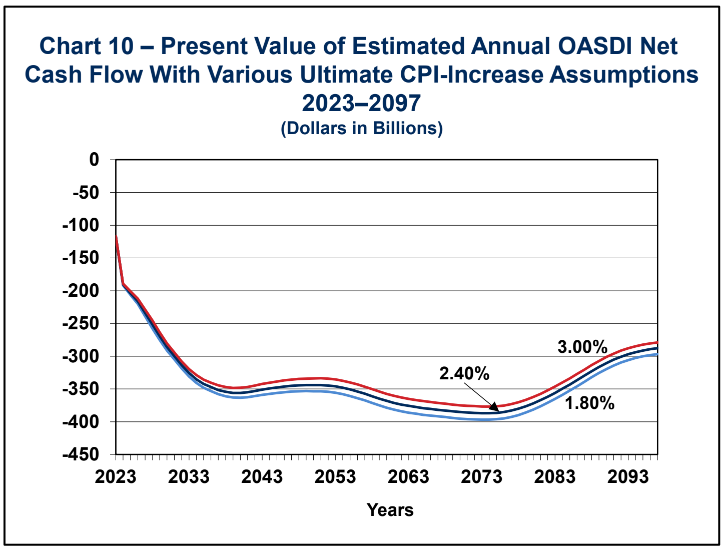
Consumer Price Index - Table 5 shows the present values of the estimated excess of OASDI income over cost for the 75-year period, using various assumptions about the rate of change in the CPI. These assumptions are that the ultimate annual increase in the CPI will be 1.80, 2.40, and 3.00 percent. All three ultimate assumptions are reached by year 2026. The intermediate assumption in the 2023 Trustees Report is 2.40 percent.

Table 5 demonstrates that if the ultimate annual increase in the CPI were changed from 2.40 percent, the Trustees' intermediate assumption, to 1.80 percent, the shortfall for the period of estimated OASDI income relative to cost would increase to $25,882 billion from $25,252 billion; if the ultimate annual increase in the CPI were changed to 3.00 percent, the shortfall would decrease to $24,592 billion. The seemingly counterintuitive result that higher CPI increases result in decreased shortfalls (and vice versa) is explained by the time lag between the effects of the CPI changes on taxable payroll and on benefit payments. The effect on taxable payroll due to a greater increase in average wages is experienced immediately, while the effect on benefits is experienced with a lag of about one year. For this reason, larger increases in the CPI cause earnings and income to increase sooner and, therefore, by more each year, than benefits and cost.

Table 5: Present Value of Estimated Excess of OASDI Income over Cost With Various CPI-Increase Assumptions Valuation Period: 2023–2097

Ultimate Annual Increase in CPI	1.80 Percent	2.40 Percent	3.00 Percent
Present Value of Estimated Excess (Dollars in Billions)	$(25,882)	$(25,252)	$(24,592)

Using the same assumptions about the annual increase in the CPI used for the estimates in Table 5, Chart 10 shows the present value of the estimated annual OASDI net cash flows.



The net cash flow estimates corresponding to all three sets of assumptions are negative in all years of the 75-year projection period. The net cash flow estimates corresponding to all three CPI-increase assumptions decrease rapidly into the 2030s and then begin to increase (become less negative) around 2040. The net cash flow estimates corresponding to an ultimate 1.8 percent CPI increase in years 2041–2049, decrease in years 2050–2074, and then increase through 2097. The net cash flow estimates corresponding to an ultimate 2.4 percent CPI increase in years 2041–2051, decrease in years 2052–2074, and then increase through 2097. The net cash flow estimates corresponding to an ultimate 3.0 percent CPI increase in years 2040–2051, decrease in years 2052–2074, and then increase through 2097.

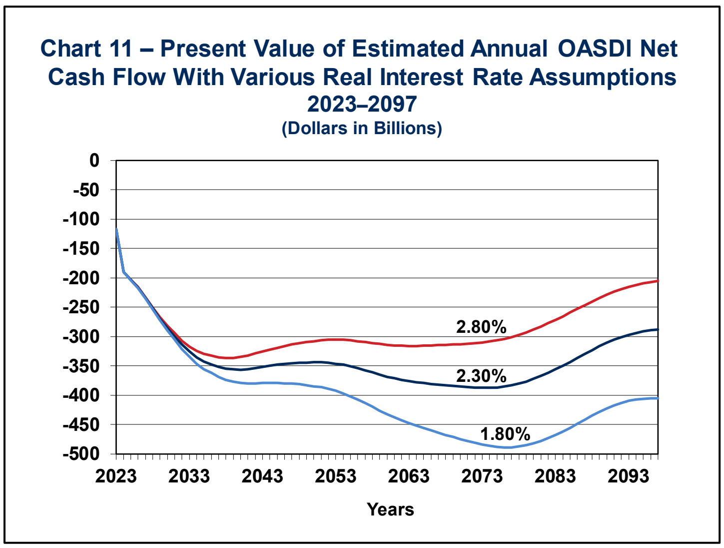
Real Interest Rate - Table 6 shows the present values of the estimated excess of OASDI income over cost for the 75-year period, using various assumptions about the annual real interest rate for special-issue Treasury obligations sold to the OASI and DI Trust Funds. These assumptions are that the ultimate annual real interest rate will be 1.8, 2.3, and 2.8 percent. All three ultimate rates are reached by 2033. The intermediate assumption in the 2023 Trustees Report is 2.3 percent. Changes in real interest rates change the present value of cash flows, even though the cash flows do not change.

Table 6 demonstrates that if the ultimate real interest rate were changed from 2.3 percent, the Trustees' intermediate assumption, to 1.8 percent, the shortfall for the period of estimated OASDI income relative to cost, when measured in present-value terms would increase to $29,966 billion from $25,252 billion; if the ultimate annual real interest rate were changed to 2.8 percent, the present-value shortfall would decrease to $21,503 billion.

Table 6: Present Value of Estimated Excess of OASDI Income over Cost With Various Real Interest Assumptions Valuation Period: 2023–2097

Ultimate Annual Real Interest Rate	1.8 Percent	2.3 Percent	2.8 Percent
Present Value of Estimated Excess (Dollars in Billions)	$(29,966)	$(25,252)	$(21,503)

Using the same assumptions about the annual real interest rate used for the estimates in Table 6, Chart 11 shows the present value of the estimated annual OASDI net cash flows.



The three patterns of the present values shown in Chart 11 are similar. The net cash flow estimates corresponding to all three sets of assumptions are negative in all years of the 75-year projection period and decrease rapidly into the 2030s. The net cash flow estimates corresponding to an ultimate real interest rate of 1.8 generally decrease through 2076, before increasing (becoming less negative) through 2097. The net cash flow estimates corresponding to an ultimate real interest rate of 2.3 increase in years 2041–2051, decrease in years 2052–2074, and then increase through 2097. The net cash flow estimates corresponding to an ultimate real interest rate of 2.8 increase in years 2039–2053, decrease in years 2054-2063, and then increase through 2097.

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