Note 22. Social Insurance

The Statements of Social Insurance (SOSI) present the projected actuarial present value of the estimated future revenue and estimated future expenditures of the Social Security, Medicare, Railroad Retirement, and Black Lung social insurance programs which are administered by the SSA, HHS, RRB, and DOL, respectively. These estimates are based on the intermediate economic and demographic assumptions presented later in this note as set forth in the relevant Social Security and Medicare trustees' reports and in the agency financial reports of HHS, SSA, and DOL, as well as in the relevant agency performance and accountability report for RRB. Due to a change in the presentation of the consolidated SOSI and this note from billions of dollars to trillions of dollars beginning in fiscal year 2016, some amounts in the narrative will not be traceable to the corresponding agency financial statements. The SOSI projections, with one exception related to Medicare Part A and OASDI, are based on current law; that is, they assume that scheduled social insurance benefit payments would continue after related trust funds are projected to be depleted, contrary to current law. By law, once assets are exhausted, expenditures cannot be made except to the extent covered by ongoing tax receipts and other trust fund income. The estimates in the consolidated SOSI of the open group measures are for persons who are participants or eventually will participate in the programs as contributors (workers) or beneficiaries (retired workers, survivors, and disabled) during the 75-year projection period. To enhance comparability of the Black Lung Disability Trust Fund's (BLDTF) social insurance information and continue to illustrate the fund's long-term condition and sustainability, DOL revised its projection period from a fixed terminus of September 30, 2040 to a rolling 25-year projection period that begins on the September 30 valuation date each year. The revised projection period became effective for the September 30, 2017 valuation date.

Contributions and dedicated taxes consist of: payroll taxes from employers, employees, and self-employed persons; revenue from federal income taxation of Old-Age Survivors and Disability Insurance (OASDI) and railroad retirement benefits; excise tax on the domestic sale of coal (Black Lung); premiums from, and state transfers on behalf of, participants in Medicare; and reimbursements from the General Fund to the OASDI Trust Funds to make up for reductions in payroll tax revenue due to temporary payroll tax rate reductions. Income for all programs is presented from a consolidated perspective. Future interest payments and other future intragovernmental transfers have been excluded upon consolidation. Expenditures include benefit payments scheduled under current law and administrative expenses. Current Social Security and Medicare law provides for full benefit payments only to the extent that there are sufficient balances in the trust funds. Expenditures reflect full benefit payments even after the point at which assets are projected to be depleted.

Actuarial present values of estimated future income (excluding interest) and estimated future expenditures for the Social Security, Medicare, and Railroad Retirement social insurance programs are presented for three different groups of participants: (1) current participants who have not yet attained eligibility age; (2) current participants who have attained eligibility age; and (3) new entrants, who are expected to become participants in the future. Current participants in the Social Security and Medicare programs are the "closed group" of taxpayers and/or beneficiaries who are at least age 15 years at the start of the projection period. Since the projection period for the Social Security, Medicare, and Railroad Retirement social insurance programs consists of 75 years, the period covers virtually all of the current participants' working and retirement years, a period that could be greater than 75 years in a relatively small number of instances. Future participants for Social Security and Medicare include births during the projection period and individuals below age 15 as of January 1 of the valuation year. Railroad Retirement's future participants are the projected new entrants as of October 1 of the valuation year. For fiscal year 2015 and years prior, future participants for Railroad Retirement were the projected new entrants as of January 1 of the valuation year[5].

The present values of estimated future expenditures in excess of estimated future revenue are calculated by subtracting the actuarial present values of future scheduled contributions as well as dedicated tax income by and on behalf of current and future participants from the actuarial present value of the future scheduled benefit payments to them or on their behalf. To determine a program's funding shortfall over any given period of time, the starting trust fund balance is subtracted from the present value of expenditures in excess of revenues over the period.

The trust fund balances as of the valuation date for the respective programs, including interest earned, are shown in the table below[6]. Substantially all of the Social Security (OASDI), Medicare Hospital Insurance (HI), and Supplementary Medical Insurance (SMI) Trust Fund balances consist of investments in special nonmarketable Treasury securities that are backed by the full faith and credit of the U.S. Government.

---

[5] Beginning with the fiscal year 2016 reporting period, the valuation date for the Railroad Retirement program was changed from calendar year to fiscal year.
[6] Trust fund balances for the Railroad Retirement and Black Lung programs are not included, as these balances are less than $50 billion.

Social Insurance Programs Trust Fund Balances [1]

(In trillions of dollars)	2017	2016	2015	2014	2013
Social Security	2.8	2.8	2.8	2.8	2.7
Medicare	0.3	0.3	0.3	0.3	0.3

[1] As of the valuation date of the respective programs.

Social Security

The Federal Old-Age and Survivors Insurance (OASI) Trust Fund, established on January 1, 1940, and the Federal Disability Insurance (DI) Trust Fund, established on August 1, 1956, collectively referred to as OASDI or "Social Security," provides cash benefits for eligible U.S. citizens and residents. 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 and their eligible dependents or survivors is based on the workers' lifetime earnings histories.

The primary financing of the OASDI Trust Funds are taxes paid by workers, their employers, and individuals with self-employment income, based on work covered by the OASDI Program. Refer to the Unaudited Required Supplementary Information—Social Insurance section for additional information on Social Security program financing.

That portion of each trust fund not required to pay benefits and administrative costs is invested, on a daily basis, in interest-bearing obligations of the U.S. Government. The *Social Security Act* authorizes the issuance by the Treasury of special nonmarketable, intragovernmental debt obligations for purchase exclusively by the trust funds. Although the special issues cannot be bought or sold in the open market, they are redeemable at any time at face value and thus bear no risk of fluctuation in principal value due to changes in market yield rates. Interest on the bonds is credited to the trust funds and becomes an asset to the funds and a liability to the General Fund. These Treasury securities and related interest are eliminated in consolidation at the governmentwide level.

Medicare

The Medicare Program, created in 1965, has two separate trust funds: the HI (Medicare Part A) and SMI (Medicare Parts B and D) Trust Funds. HI pays for inpatient acute hospital services, hospice, and major alternatives to hospitals (skilled nursing services, for example), and SMI pays for hospital outpatient services, physician services, and assorted other services and products through the Part B account and pays 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. Other income to the HI Trust Fund includes a small amount of premium income from voluntary enrollees, receipts from fraud and abuse control activities, a portion of the federal income taxes that beneficiaries pay on Social Security benefits and interest credited on Treasury securities held in the HI Trust Fund. These Treasury securities and related interest are eliminated in the consolidation at the governmentwide level.

For SMI, transfers from the General Fund represent the largest source of income for both Parts B and D. Generally, beneficiaries finance the remainder of Parts B and D costs via monthly premiums to these programs. With the introduction of Part D drug coverage, Medicaid is no longer the primary payer of drug costs for full-benefit dually eligible beneficiaries of Medicare and Medicaid. For those beneficiaries, states are subject to a contribution requirement and must pay a portion of their estimated foregone drug costs into the Part D account (referred to as state transfers). Fees related to brand-name prescription drugs, required by the *Affordable Care Act* (ACA), are included as income for Part B of SMI. As with HI, interest received on Treasury securities held in the SMI Trust Fund is credited to the fund and these Treasury securities as well as related interest are eliminated in consolidation at the governmentwide level. By accounting convention, the transfers of general revenues are eliminated in the consolidation of the SOSI at the governmentwide level and as such, the general revenues that are used to finance Medicare Parts B and D are not included in these calculations even though the expenditures on these programs are included. For the fiscal year 2017 and 2016 SOSI, the amounts eliminated totaled $30.0 trillion and $28.7 trillion, respectively. Refer to Unaudited Required Supplementary Information—Social Insurance section for additional information on Medicare program financing.

The financial projections for the Medicare program reflect substantial, but very uncertain, cost savings deriving from provisions of the *Patient Protection and Affordable Care Act* and the *Health Care and Education Reconciliation Act*,

collectively referred to as the *Affordable Care Act* (ACA), and the *Medicare Access and CHIP Reauthorization Act of 2015* (MACRA) that lowered increases in Medicare payment rates to most categories of health care providers.

The ACA became law in fiscal year 2010 and provided funding for the establishment by Centers for Medicare & Medicaid Services (CMS) of a Center for Medicare and Medicaid Innovation to test innovative payment and service delivery models to reduce program expenditures while preserving or enhancing the quality of care furnished to individuals. It also allowed for the establishment of a Center for Consumer Information and Insurance Oversight (CCIIO). One of the main programs under CCIIO is the Affordable Insurance Exchanges (the "Exchanges"). A brief description of these programs is presented below.

Affordable Insurance Exchanges. Grants have been provided to the states to establish Affordable Insurance Exchanges. The initial grants were made by HHS to the states "not later than one year after the date of enactment." Thus, HHS made the initial grants by March 23, 2011. Subsequent grants were issued by CMS through December 31, 2014, after which time no further grants could be made. All Exchanges were launched on October 1, 2013.

Transitional Reinsurance Program. The Transitional Reinsurance Program was established in each state to help stabilize premiums for coverage in the individual market from 2014 through 2016. All health insurance issuers and third party administrators, on behalf of self-insured group health plans, made contributions to support reinsurance payments that cover high-cost individuals in non-grandfathered plans in the individual market, inside and outside the Exchange.

Risk Adjustment Program. The Risk Adjustment Program is a permanent program. It applies to non-grandfathered individuals and small group plans inside and outside the Exchanges. It provides payments to health insurance issuers that disproportionately attract higher-risk populations (such as individuals with chronic conditions) and transfers funds from plans with relatively lower risk enrollees to plans with relatively higher risk enrollees to protect against adverse selection. States that operate a state-based Exchange are eligible to establish a risk adjustment program. States operating a risk adjustment program may have an entity other than the Exchange perform this function. CMS operates a risk adjustment program for each state that does not operate its own.

Risk Corridors Program. The temporary Risk Corridors Program operated for benefit years 2014 through 2016. This program applied to qualified health plans in the individual and small group markets, inside and outside the Exchanges and protected against inaccurate rate-setting by sharing risk (gains and losses) on allowable costs between CMS and qualified health plans.

It is important to note that the improved results for HI and SMI Part B since 2010 depend in part on the long-range feasibility of the various cost-saving measures in the ACA–most importantly, the reductions in the annual payment rate updates for most categories of Medicare providers by the growth in economy-wide private nonfarm business multifactor productivity and the specified physician updates put in place by MACRA. Without fundamental changes in the current delivery system, these productivity-related adjustments to Medicare payment rates would probably not be viable indefinitely. However, this outcome is achievable if health care providers are able to realize productivity improvements at a faster rate than experienced historically. On the other hand, if the health sector cannot transition to more efficient models of care delivery and achieve productivity increases commensurate with economy-wide productivity, and if the provider reimbursement rates paid by commercial insurers continue to be based on the same negotiated process used to date, then the availability and quality of health care received by Medicare beneficiaries would, under current law, fall over time compared to that received by those with private health insurance.

A transformation of health care in the United States, affecting both the means of delivery and the method of paying for care, is also a possibility. Private health insurance and Medicare take important steps in this direction by initiating programs of research into innovative payment and service delivery models, such as accountable care organizations, patient-centered medical homes, improvement in care coordination for individuals with multiple chronic health conditions, better coordination of post-acute care, payment bundling, pay for performance, and assistance for individuals in making informed health choices. Such changes have the potential to reduce health care costs as well as cost growth rates and could, as a result, help lower health care spending to levels compatible with the lower price updates payable under current law.

The ability of new delivery and payment methods to lower cost growth rates is uncertain at this time. Preliminary indications are that some of these delivery reforms have had modest levels of success in lowering costs, but at this time it is too early to tell if these reductions in spending will continue, or if they will grow to the magnitude needed to align with the statutory Medicare price updates. For those providers affected by the productivity adjustments and the specified updates to physician payments, sustaining the price reductions will be challenging, as the best available evidence indicates that most providers cannot improve their productivity to this degree for a prolonged period given the labor-intensive nature of these services and that physician costs will grow at a faster rate than the specified updates. As a result, actual Medicare expenditures are highly uncertain for reasons apart from the inherent difficulty in projecting health care cost growth over time.

Absent an unprecedented change in health care delivery systems and payment mechanisms, the prices paid by Medicare for most health services will fall increasingly short of the cost of providing such services. If this issue is not addressed by

subsequent legislation, it is likely that access to, and quality of, Medicare benefits would deteriorate over time for beneficiaries. The specified rate updates could be an issue in years when levels of inflation are high and would be problematic when the cumulative gap between the price updates and physician costs becomes large. The gap will continue to widen throughout the projection, and it is estimated that physician payment rates under current law will be lower than they would have been under the sustainable growth rate (SGR) formula by 2048. Absent a change in the delivery system or level of update by subsequent legislation, access to Medicare-participating physicians may become a significant issue in the long term under current law. Overriding the price updates in current law, as lawmakers repeatedly did in the case of physician payment rates, would lead to substantially higher costs for Medicare in the long range than those projected in this report.

To help illustrate and quantify the potential magnitude of the cost understatement, the Trustees asked the Office of the Actuary at CMS to prepare an illustrative Medicare Trust Fund projection under a hypothetical alternative that assumes that, starting in 2020, the economy-wide productivity adjustments gradually phase down to 0.4 percent, and starting in 2026, physician payments transition from a payment update of 0.6 percent to an increase of 2.2 percent. In addition, the illustrative alternative assumes the continuation of the 5-percent bonuses for physicians in advanced alternative payment models (APMs) and of the $500 million payments for physicians in the merit-based incentive payment system (MIPS). In addition, the projection assumes that the Independent Payment Advisory Board (IPAB) requirements would not be implemented.[7] This alternative was developed for illustrative purposes only; the calculations have not been audited; no endorsement of the policies underlying the illustrative alternative by the Trustees, CMS, or the Office of the Actuary should be inferred; and the examples do not attempt to portray likely or recommended future outcomes. Thus, the illustrations are useful only as general indicators of the substantial impacts that could result from future legislation affecting the productivity adjustments and physician updates under Medicare and of the broad range of uncertainty associated with such impacts. The table below contains a comparison of the Medicare 75-year present values of estimated future income and estimated future expenditures under current law with those under the illustrative alternative scenario.

---

[7] The illustrative alternative projections included changes to the productivity adjustments starting with the 2010 annual report, following enactment of the *Affordable Care Act*. The assumption regarding physician payments is being used because the enactment of *MACRA* in 2015 replaced the SGR with specified physician updates.

Medicare Present Values (in trillions) (Unaudited)

	2017 Consolidated SOSI Current Law	Illustrative Alternative Scenario [1,2]
Income:		
Part A	$21.7	$21.9
Part B [3]	$8.4	$10.6
Part D [4]	$3.1	$3.2
Total income	$33.2	$35.7
Expenditures:		
Part A	$25.3	$31.5
Part B	$30.8	$38.7
Part D	$10.8	$10.9
Total expenditures	$66.9	$81.1
Income less expenditures:		
Part A	$3.5	$9.6
Part B	$22.4	$28.1
Part D	$7.6	$7.8
Excess of expenditures over income	$33.5	$45.5

[1] These amounts are not presented in the 2017 Trustees' Report.

[2] At the request of the Trustees, the Office of the Actuary at CMS has prepared an illustrative set of Medicare Trust Fund projections that differ from current law. No endorsement of the illustrative alternative to current law by the Trustees, CMS, or the Office of the Actuary should be inferred.

[3] Excludes $22.4 trillion and $28.1 trillion of General Revenue Contributions from the 2017 Consolidated SOSI Current Law projection and the Illustrative Alternative Scenario's projection, respectively; i.e., to reflect Part B income on a consolidated governmentwide basis.

[4] Excludes $7.6 trillion and $7.8 trillion of General Revenue Contributions from the 2017 Consolidated SOSI Current Law projection and the Illustrative Alternative Scenario's projection, respectively; i.e., to reflect Part D income on a consolidated governmentwide basis.

Note: Totals may not equal the sum of components due to rounding.

The difference between the current-law and illustrative alternative projections is substantial for Parts A and B. All Part A fee-for-service providers and roughly half of Part B fee-for-service providers are affected by the productivity adjustments, so the current-law projections reflect an estimated 1.1 percent reduction in annual cost growth each year for these providers. If the productivity adjustments were gradually phased out, the physician updates transitioned to the Medicare Economic Index update of 2.2 percent, the 5-percent bonuses paid to physicians in APMs did not expire, and the IPAB requirements were not implemented, as illustrated under the alternative scenario, the estimated present values of Part A and Part B expenditures would each be higher than the current-law projections by roughly 25 and 26 percent, respectively. As indicated above, the present value of Part A income is basically unaffected under the alternative scenario.

The Part D values are similar under each projection because the services are not affected by the productivity adjustments or the physician updates. The very minor effect is the result of the removal of the IPAB impact and a slight change in the discount rates that are used to calculate the present values.

The extent to which actual future Part A and Part B costs exceed the projected amounts due to changes to the productivity adjustments and physician updates depends on what specific changes might be legislated and whether Congress would pass further provisions to help offset such costs. As noted, these examples reflect only hypothetical changes to provider payment rates.

Social Security and Medicare–Demographic and Economic Assumptions

The Boards of Trustees[8] 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. Assumptions are made about many economic and demographic factors, including Gross Domestic Product (GDP)[9], disability incidence and terminations, earnings, the Consumer Price Index (CPI), the unemployment rate, the fertility rate, immigration, mortality, and for the Medicare projections health care cost growth. The assumptions used for the most recent set of projections shown in Table 1A (Social Security) and Table 1B (Medicare) are generally referred to as the "intermediate assumptions," and reflect the trustees' reasonable estimate of expected future experience. For further information on Social Security and Medicare demographic and economic assumptions, refer to SSA's and HHS' Agency Financial Reports.

---

[8] 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 generally appointed by the President and confirmed by the Senate for a 4-year term. By law, the public trustees are members of two different political parties.

[9] In July 2013, the Bureau of Economic Analysis (BEA) revised upward the historical values for GDP beginning with estimates for 1929.

Table 1A
Social Security – Demographic and Economic Assumptions

Demographic Assumptions

Year	Total Fertility Rate[1]	Age-Sex Adjusted Death Rate (per 100,000)[2]	Net Annual Immigration (persons per year)[3]	Period Life Expectancy at Birth[4]	
				Male	Female
2017	1.90	772.1	1,559,000	77.0	81.6
2020	1.98	750.2	1,512,000	77.4	81.9
2030	2.00	686.1	1,332,000	78.6	82.9
2040	2.00	630.8	1,282,000	79.7	83.8
2050	2.00	582.3	1,257,000	80.7	84.6
2060	2.00	539.7	1,243,000	81.7	85.4
2070	2.00	502.0	1,234,000	82.5	86.1
2080	2.00	468.6	1,229,000	83.4	86.8
2090	2.00	438.7	1,227,000	84.1	87.4

Economic Assumptions

Year	Real Wage Differential (percent)[5]	Average Annual Wage In Covered Employment (percent change)[6]	CPI (percent change)[7]	Real GDP (percent change)[8]	Total Employment (percent change)[9]	Average Annual Interest Rate (percent)[10]
2017	1.84	4.00	2.17	2.9	1.1	2.7
2020	1.87	4.47	2.60	2.9	1.0	4.6
2030	1.29	3.89	2.60	2.1	0.5	5.3
2040	1.21	3.81	2.60	2.2	0.6	5.3
2050	1.24	3.84	2.60	2.2	0.5	5.3
2060	1.21	3.81	2.60	2.1	0.4	5.3
2070	1.15	3.75	2.60	2.1	0.5	5.3
2080	1.13	3.73	2.60	2.1	0.5	5.3
2090	1.15	3.75	2.60	2.0	0.4	5.3

[1]The total fertility rate for any year is the average number of children that would be born to a woman in her lifetime if she were to experience, at each age of her life, the birth rate observed in, or assumed for, the selected year, and if she were to survive the entire childbearing period.

[2]The age-sex-adjusted death rate is based on the enumerated total population as of April 1, 2010, if that population were to experience the death rates by age and sex observed in, or assumed for, the selected year. It is a summary measure and not a basic assumption; it summarizes the basic assumptions from which it is derived.

[3]Net annual immigration is the number of persons who enter during the year (both legally and otherwise) minus the number of persons who leave during the year. It is a summary measure and not a basic assumption; it summarizes the effects of the basic assumptions from which it is derived.

[4]The period life expectancy at a given age for a given year is the average remaining number of years expected prior to death for a person at that exact age, born on January 1, using the mortality rates for that year over the course of his or her remaining life. It is a summary measure and not a basic assumption; it summarizes the effects of the basic assumptions from which it is derived.

[5]The real-wage differential is the annual percentage change in the average annual wage in covered employment less the annual percentage change in the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W). Values are rounded after all computations.

[6]The average annual wage in covered employment is the total amount of wages and salaries for all employment covered by the OASDI program in a year, divided by the number of employees with any such earnings during the year. It is a summary measure and not a basic assumption; it summarizes the basic assumptions from which it is derived.

[7]The CPI is the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W).

[8]The real GDP is the value of total output of goods and services in 2009 dollars. It is a summary measure and not a basic assumption; it summarizes the effects of the basic assumptions from which it is derived.

[9]Total employment is total U.S. military and civilian employment. It is a summary measure and not a basic assumption; it summarizes the basic assumptions from which it is derived.

[10]The average annual interest rate is the average of the nominal interest rates, which compound semiannually, for special public-debt obligations issuable to the OASI and DI Trust Funds in each of the 12 months of the year. It is a summary measure and not a basic assumption; it summarizes the basic assumptions from which it is derived.

Table 1B
Medicare – Demographic and Economic Assumptions

Demographic Assumptions

Year	Total Fertility Rate[1]	Age-Sex Adjusted Death Rate (per 100,000)[2]	Net Annual Immigration (persons per year)[3]
2017	1.90	772.1	1,559,000
2020	1.98	750.2	1,512,000
2030	2.00	686.1	1,332,000
2040	2.00	630.8	1,282,000
2050	2.00	582.3	1,257,000
2060	2.00	539.7	1,243,000
2070	2.00	502.0	1,234,000
2080	2.00	468.6	1,229,000
2090	2.00	438.7	1,227,000

Economic Assumptions

Year	Real Wage Differential (percent)[4]	Average Annual Wage In Covered Employment (percent change)[5]	CPI (percent change)[6]	Real GDP (percent change)[7]	Per Beneficiary Cost[8] (percent change) HI	SMI Part B	SMI Part D	Real Interest Rate (percent)[9]
2017	1.84	4.00	2.17	2.9	0.5	3.1	(0.2)	(0.3)
2020	1.87	4.47	2.60	2.9	4.1	5.1	5.4	1.7
2030	1.29	3.89	2.60	2.1	3.8	4.8	4.5	2.7
2040	1.21	3.81	2.60	2.2	4.6	4.2	4.7	2.7
2050	1.24	3.84	2.60	2.2	3.8	3.7	4.7	2.7
2060	1.21	3.81	2.60	2.1	3.6	3.6	4.5	2.7
2070	1.15	3.75	2.60	2.1	3.8	3.6	4.4	2.7
2080	1.13	3.73	2.60	2.1	3.8	3.6	4.4	2.7
2090	1.15	3.75	2.60	2.0	3.4	3.4	4.3	2.7

[1]The total fertility rate for any year is the average number of children that would be born to a woman in her lifetime if she were to experience, at each age of her life, the birth rate observed in, or assumed for, the selected year, and if she were to survive the entire childbearing period.

[2]The age-sex-adjusted death rate is based on the enumerated total population as of April 1, 2010, if that population were to experience the death rates by age and sex observed in, or assumed for, the selected year. It is a summary measure and not a basic assumption; it summarizes the basic assumptions from which it is derived.

[3]Net annual immigration is the number of persons who enter during the year (both legally and otherwise) less the number of persons who leave during the year. It is a summary measure and not a basic assumption; it summarizes the effects of the basic assumptions from which it is derived.

[4]The real-wage differential is the annual percentage change in the average annual wage in covered employment less the annual percentage change in CPI. Values are rounded after computations.

[5]The average annual wage in covered employment is the total amount of wages and salaries for all employment covered by the OASDI program in a year, divided by the number of employees with any such earnings during the year. It is a summary measure and not a basic assumption; it summarizes the basic assumptions from which it is derived.

[6]The CPI is the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W).

[7]The real GDP is the value of total output of goods and services produced in the U.S. in 2009 dollars. It is a summary measure and not a basic assumption; it summarizes the effects of the basic assumptions from which it is derived.

[8]These increases reflect the overall impact of more detailed assumptions that are made for each of the different types of service provided by the Medicare program (for example, hospital care, physician services, and pharmaceutical costs). These assumptions include changes in the payment rates, utilization, and intensity of each type of service.

[9]The real interest rate is the average rate of interest earned on new trust fund securities, above and beyond the rate of inflation.

Railroad Retirement

The Railroad Retirement and Survivor Benefit program 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 and divorced spouses of retired workers and to widow(er)s, surviving divorced spouses, remarried widow(er)s, children, and parents of deceased railroad workers. Medicare covers qualified railroad retirement beneficiaries in the same way as it does Social Security beneficiaries.

The RRB and the SSA share jurisdiction over the payment of retirement and survivor benefits. The RRB has jurisdiction over the payment of retirement benefits if the employee has at least 10 years of railroad service, or five years if performed after 1995. For survivor benefits, RRB requires that the employee's last regular employment before retirement or death be in the railroad industry. If a railroad employee or his or her survivors do not qualify for railroad retirement benefits, the RRB transfers the employee's railroad retirement credits to SSA, where they are treated as social security credits.

Payroll taxes paid by railroad employers and their employees are a primary source of funding for the Railroad Retirement and Survivor 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 and Tier II taxes to finance railroad retirement benefit payments that are higher than Social Security levels.

Revenues in excess of benefit payments are invested to provide additional trust fund income. Legislation enacted in 2001 allowed for Railroad Retirement Account funds transferred to the National Railroad Retirement Investment Trust (NRRIT) to be invested in non-governmental assets, as well as in governmental securities. Funds transferred from the Social Security Equivalent Benefit (SSEB) Account to the NRRIT are allowed to be invested only in governmental securities.

Since its inception, NRRIT has received $21.3 billion from RRB (including $19.2 billion in fiscal year 2003, pursuant to the *Railroad Retirement and Survivors' Improvement Act of 2001*) and returned $21.1 billion. During fiscal year 2017, the NRRIT made net transfers of $1.8 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, 2017, and 2016, of non-federal securities and investments of the NRRIT are disclosed in Note 7—Debt and Equity Securities.

Another major source of income to the Railroad Retirement and Survivor Benefit program consists of financial transactions with the Social Security and Medicare Trust Funds. The RRB, SSA, and CMS are parties to a financing arrangement, the "financial interchange", which is intended to put the OASDI and Medicare HI Trust Funds in the same positions they would have been had railroad employment been covered under the *Social Security* and *Federal Insurance Contributions Acts*.

Other sources of program income include revenue resulting from federal income taxes on railroad retirement benefits, and appropriations provided after 1974 as part of a phase out of certain vested dual benefits. From a governmentwide perspective, these future financial interchanges and transactions are intragovernmental transfers and are eliminated in consolidation.

The estimated future revenues and expenditures reflected in the SOSI are based on various economic, employment, and other actuarial assumptions, and assume that the Railroad Retirement program will continue as presently constructed. The calculations assume that all future transfers required by current law under the financial interchange will be made. For further details on actuarial assumptions related to the Railroad Retirement program and how these assumptions affect amounts presented on the SOSI and Statement of Changes in Social Insurance Amounts (SCSIA), consult the Technical Supplement to the *26th Actuarial Valuation of the Assets and Liabilities Under the Railroad Retirement Acts as of December 31, 2013*, the *Annual Report on the Railroad Retirement System Required by the Railroad Retirement Act of 1974* and *Railroad Retirement Solvency Act of 1983*, and RRB's financial statements.

Black Lung–Disability Benefit Program

The Black Lung Disability Benefit Program provides for 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 the BLDTF provides benefit payments when no responsible mine operator (RMO) can be assigned the liability or when the liability is adjudicated to the BLDTF, which may occur as a result of, among other things, bankruptcy of the RMO. DOL operates the Black Lung Disability Benefit Program.

Black lung disability benefit payments are funded by excise taxes from coal mine operators based on the domestic sale of coal, as are the fund's administrative costs. These taxes are collected by the IRS and transferred to the BLDTF, which was established under the authority of the *Black Lung Benefits Revenue Act*, and administered by the Treasury.

P.L. 110-343, *Division B-Energy Improvement and Extension Act of 2008*, enacted on October 3, 2008, among other things, restructured the BLDTF debt by refinancing the outstanding high interest rate repayable advances with low interest rate discounted debt instruments similar in form to zero-coupon bonds, plus a one-time appropriation. This Act also allowed that any subsequent debt issued by the BLDTF may be used to make benefit payments, other authorized expenditures, or to repay debt and interest from the initial refinancing.

The significant assumptions used in the projections for the SOSI are the coal excise tax revenue estimates, the tax rate structure, number of beneficiaries, life expectancy, federal civilian pay raises, medical cost inflation, and interest rates used to discount future cash flows. These assumptions affect the amounts reported on the SOSI and the SCSIA. The program's valuation date is September 30 for each year of information presented in the SOSI and the SCSIA. Refer to DOL's financial statements for further details on significant assumptions related to the Black Lung Disability Benefit Program, and how these assumptions affect amounts presented on the SOSI and SCSIA.

Statement of Changes in Social Insurance Amounts

The Statement of Changes in Social Insurance Amounts reconciles the change (between the current valuation and the prior valuation) in the present value of estimated future revenue less estimated future expenditures for current and future participants (the open group measure) over the next 75 years (except Black Lung which has a rolling 25-year projection period through September 30, 2042). The reconciliation identifies several components of the changes that are significant and provides reasons for the changes. The following disclosures relate to the Statement of Changes in Social Insurance Amounts including the reasons for the components of the changes in the open group measure during the reporting period from the end of the previous reporting period for the Government's social insurance programs.

Social Security

The Statement of Changes in Social Insurance Amounts shows two reconciliations for Social Security: (1) changes from the period beginning on January 1, 2016, to the period beginning on January 1, 2017, and (2) changes from the period beginning on January 1, 2015, to the period beginning on January 1, 2016. All estimates relating to the Social Security Program in the Statement of Changes in Social Insurance Amounts represent values that are incremental to the prior change. As an example, the present values shown for economic data, assumptions, and methods represent the additional effect of these new data, assumptions, and methods after considering the effects from demography and the change in the valuation period. In general, an increase in the present value of net cash flows represents a positive change (improving financing), while a decrease in the present value of net cash flows represents a negative change (worsening financing).

Assumptions Used for the Components of the Changes for the Social Security Program

The present values included in the Statement of Changes in Social Insurance Amounts are for the current and prior years and are based on various economic as well as demographic assumptions used for the intermediate assumptions in the Social Security Trustees Reports for these years. Table 1A summarizes these assumptions for the current year.

Period Beginning on January 1, 2016, and Ending January 1, 2017

Present values as of January 1, 2016 are calculated using interest rates from the intermediate assumptions of the 2016 Social Security Trustees Report. All other present values in this part of the Statement of Changes in Social Insurance Amounts are calculated as a present value as of January 1, 2017. Estimates of the present value of changes in social insurance amounts due to changing the valuation period and changing demographic data, assumptions, and methods are presented using the interest rates under the intermediate assumptions of the 2016 Social Security Trustees Report. Because interest rates are an economic estimate and all estimates in the table are incremental to the prior change, all other present values in this part of the Statement of Changes in Social Insurance Amounts are calculated using the interest rates under the intermediate assumptions of the 2017 Social Security Trustees Report.

Period Beginning on January 1, 2015, and Ending January 1, 2016

Present values as of January 1, 2015 are calculated using interest rates from the intermediate assumptions of the 2015 Social Security Trustees Report. All other present values in this part of the Statement of Changes in Social Insurance Amounts are calculated as a present value as of January 1, 2016. Estimates of the present value of changes in social insurance amounts due to changing the valuation period and changing demographic data, assumptions, and methods are presented using the interest rates under the intermediate assumptions of the 2015 Social Security Trustees Report. Because interest rates are an economic estimate and all estimates in the table are incremental to the prior change, all other present values in this part of the Statement of Changes in Social Insurance Amounts are calculated using the interest rates under the intermediate assumptions of the 2016 Social Security Trustees Report.

Changes in Valuation Period

Period Beginning on January 1, 2016, and Ending January 1, 2017

The effect on the 75-year present values of changing the valuation period from the prior valuation period (2016-2090) to the current valuation period (2017-2091) is measured by using the assumptions for the prior valuation and extending them to cover the current valuation. Changing the valuation period removes a small negative net cash flow for 2016, replaces it with a much larger negative net cash flow for 2091, and measures the present values as of January 1, 2017, one year later. Thus, the present value of estimated future net cash flows (excluding the combined OASI and DI Trust Fund asset reserves at the start of the period) decreased (became more negative) when the 75-year valuation period changed from 2016-2090 to 2017-2091. In addition, the effect on the level of asset reserves in the combined OASI and DI Trust Funds of changing the valuation period is measured by assuming all values projected in the prior valuation for the year 2016 are realized. The change in valuation period increased the starting level of asset reserves in the combined OASI and DI Trust Funds.

Period Beginning on January 1, 2015, and Ending January 1, 2016

The effect on the 75-year present values of changing the valuation period from the prior valuation period (2015-2089) to the current valuation period (2016-2090) is measured by using the assumptions for the prior valuation and extending them to cover the current valuation. Changing the valuation period removes a small negative net cash flow for 2015, replaces it with a much larger negative net cash flow for 2090, and measures the present values as of January 1, 2016, one year later. Thus, the present value of estimated future net cash flows (excluding the combined OASI and DI Trust Fund asset reserves at the start of the period) decreased (became more negative) when the 75-year valuation period changed from 2015-2089 to 2016-2090. In addition, the effect on the level of asset reserves in the combined OASI and DI Trust Funds of changing the valuation period is measured by assuming all values projected in the prior valuation for the year 2015 are realized. The change in valuation period increased the starting level of asset reserves in the combined OASI and DI Trust Funds.

Changes in Demographic Data, Assumptions, and Methods

Period Beginning on January 1, 2016, and Ending January 1, 2017

The ultimate demographic assumptions for the current valuation (beginning on January 1, 2017) are the same as those for the prior valuation. However, the starting demographic values and the way these values transition to the ultimate assumptions were changed.

- Final birth rate data for 2015 indicated slightly lower birth rates than were assumed in the prior valuation.
- Incorporating 2014 mortality data obtained from the National Center for Health Statistics at ages under 65 and preliminary 2014 mortality data from Medicare experience at ages 65 and older resulted in higher death rates for all future years than were projected in the prior valuation.
- More recent legal and other-than-legal immigration data and historical population data were included.

The effects of including the recent birth rate data, immigration data, and historical population data were all decreases in the present value of estimated future net cash flows. These effects were offset somewhat by the inclusion of the recent mortality data, which increased the present value of estimated future net cash flows.

There were no notable changes in demographic methodology.

Period Beginning on January 1, 2015, and Ending January 1, 2016

The ultimate demographic assumptions for the current valuation (beginning on January 1, 2016), with the exception of a small change in marriage rates, are the same as those for the prior valuation. However, the starting demographic values and the way these values transition to the ultimate assumptions were changed.

- Final birth rate data for 2013 and 2014 indicated lower birth rates than were expected in the prior valuation. The data also show an increase in birth rates starting in 2014, one year later than assumed in the prior valuation.
- Incorporating mortality data obtained from the National Center for Health Statistics at ages under 65 for 2012 and 2013 and from Medicare experience at ages 65 and older for 2013 resulted in slightly higher death rates than were projected in the prior valuation.
- Assumed ultimate marriage rates were decreased somewhat to reflect a continuation of recent trends.
- More recent legal and other-than-legal immigration data and historical population data were included.

The effect of including the new birth rate data and immigration data was a decrease in the present value of estimated future net cash flows, while the inclusion of the mortality data and the marriage rate changes increased the present value of estimated future net cash flows.

There were two changes in demographic methodology:

- The transition from recent mortality rates to the ultimate rates starts sooner, immediately after the year of final data. The approach used for the prior valuation extended the trend of the last 10 years through the valuation year for the report and only thereafter started the transition to assumed ultimate rates of decline.
- Historical non-immigrant population counts were revised to match recent totals provided by the Department of Homeland Security. In addition, emigration rates for the never-authorized and visa-overstayer populations were recalibrated to reflect a longer historical period and to be less influenced by the high emigration rates experienced during the recent recession. Finally, the method for projecting emigration of the never-authorized population was altered to reflect lower rates of emigration for those who have resided here longer.

The effect of including these methodological improvements was an increase in the present value of estimated future net cash flows.

Changes in Economic Data, Assumptions, and Methods

Period Beginning on January 1, 2016, and Ending January 1, 2017

For the current valuation (beginning on January 1, 2017), there was one change to the ultimate economic assumptions.

- The ultimate average real-wage differential is assumed to be 1.20 percent in the current valuation, which is close to a 0.01 percent decrease relative to the previous valuation (even though both ultimate average real-wage differentials are 1.20 when rounded to two decimal places).

In addition to this change in ultimate assumption, the assumed path of the real-wage differential in the first 10 years of the projection period was also lower than in the previous valuation. This led to 0.05 percent lower annual growth in the average annual wage in covered employment in the first 10 years. The lower long-term and near-term real-wage differential assumptions are based on new projections by CMS of faster growth in employer sponsored group health insurance premiums. Because these premiums are not subject to the payroll tax, faster growth in these premiums means that a smaller share of employee compensation will be in the form of wages that are subject to the payroll tax. The lower real-wage differential decreased the present value of estimated future net cash flows.

Otherwise, the ultimate economic assumptions for the current valuation are the same as those for the prior valuation. However, the starting economic values and the way these values transition to the ultimate assumptions were changed. The most notable change was updating the near-term interest rates. Also notable was an assumed weaker recovery from the recent recession than previously expected, which led to a reduction in the ultimate level of actual and potential GDP of about 1.0 percent for all years after the short-range period.

The changes in near-term interest rates and GDP decreased the present value of estimated future net cash flows. Other, smaller changes in starting values and near-term growth assumptions combined to decrease the present value of estimated future net cash flows.

Period Beginning on January 1, 2015, and Ending January 1, 2016

For the current valuation (beginning on January 1, 2016), there were three changes to the ultimate economic assumptions.

- The ultimate rate of price inflation (CPI-W) was lowered by 0.1 percentage point, to 2.6 percent from 2.7 percent for the previous valuation.
- The ultimate average real-wage differential is assumed to be 1.20 percent in the current valuation, compared to 1.17 percent in the previous valuation.
- The ultimate real interest rate was lowered by 0.2 percentage point, to 2.7 percent from 2.9 percent for the previous valuation.

While very low inflation in recent years is reflective of U.S. and international supply and demand factors that have been affected by the global recession, the average rate of change in the CPI-W over the last two complete business cycles (from 1989 to 2007) is 2.63 percent. The lower ultimate CPI decreases the present value of estimated future net cash flows.

The higher real-wage differential assumption is based on new projections by CMS of slower growth in employer-sponsored group health insurance premiums. Because these premiums are not subject to the payroll tax, slower growth in these premiums means that a greater share of employee compensation will be in the form of wages that are subject to the payroll tax. The higher real-wage differential increased the present value of estimated future net cash flows.

Real interest rates have been low since 2000, and particularly low since the start of the recent recession. An ongoing and much-debated question among experts is how much of this change is cyclic or a temporary response to extraordinary events, versus a fundamental permanent change. The Trustees believe that lowering the long-term ultimate real interest rate somewhat is appropriate at this time. The lower real interest rate decreased the present value of estimated future net cash flows.

Otherwise, the ultimate economic assumptions for the current valuation are the same as those for the prior valuation. However, the starting economic values and the way these values transition to the ultimate assumptions were changed.

- A reduction in the ultimate level of actual and potential GDP of about 1.0 percent is assumed. Thus, by the end of the short-range period (2025) and for all years thereafter, projected GDP in 2009 dollars is about 1.8 percent below the level in last year's report.

The change to GDP decreased the present value of estimated future net cash flows. Other, smaller changes in starting values and near-term growth assumptions combined to increase the present value of estimated future net cash flows.

Changes in Law or Policy

Period Beginning on January 1, 2016, and Ending January 1, 2017

The monetary effect of the changes in law or policy on the long-range cost of the OASDI program was not significant at the consolidated level. Please refer to SSA's financial statements for further information related to the impact of the changes in law or policy on the long-range cost of the OASDI program.

Period Beginning on January 1, 2015, and Ending January 1, 2016

Between the prior valuation (the period beginning on January 1, 2015) and the current valuation (the period beginning on January 1, 2016), one law was enacted that is expected to have a significant effect on the long-range cost of the OASDI program. On November 2, 2015, the President signed into law P.L. 114-74, *Bipartisan Budget Act of 2015*. Several sections of the law had significant effects on long-range actuarial status, including:

- Section 831. Closure of unintended loopholes. This provision eliminates: (1) the ability to receive only a retired-worker benefit or an aged-spouse benefit when eligible for both, for those attaining age 62 in 2016 and later; and (2) the ability of a family member other than a divorced spouse to receive a benefit based on the earnings of a worker with a voluntarily suspended benefit, for voluntary suspensions requested after April 29, 2016.
- Section 832. Requirement for medical review. This section requires that the medical portion of the case review and any applicable residual functional capacity assessment for an initial disability determination be completed by an appropriate physician, psychiatrist, or psychologist.
- Section 833. Reallocation of payroll tax rates. For earnings in calendar years 2016 through 2018, this section temporarily reallocates from 1.80 percent to 2.37 percent the portion of the total 12.40 percent OASDI payroll tax that is directed to the DI Trust Fund. This reallocation of the payroll tax rates had no cost effect on the combined OASDI program.

The effect of including this law was an increase in the present value of estimated future net cash flows.

Potential Impact on the Social Insurance Statements of the September 5, 2017 Rescission of the 2012 DACA Policy Directive

The Deferred Action for Childhood Arrivals (DACA) policy directive was implemented on June 15, 2012. On September 5, 2017, the Department of Homeland Security rescinded the 2012 DACA policy directive and scheduled an orderly phase out of the DACA program. The SSA Office of the Chief Actuary has concluded that the phase out of the DACA program has an effect on the actuarial methods and assumptions used in developing the estimates presented in the Statements of Social Insurance and the Statement of Changes in Social Insurance Amounts. It is expected that the phase out of the DACA program will change the present value of future noninterest income less future cost for current and future participants (open group measure) presented in the Statements of Social Insurance and Statement of Changes in Social Insurance Amounts by less than $20 billion. These effects are not considered to be material.

Medicare

The Statement of Changes in Social Insurance Amounts shows two reconciliations for Medicare: (1) changes from the period beginning on January 1, 2016, to the period beginning on January 1, 2017, and (2) changes from the period beginning on January 1, 2015, to the period beginning on January 1, 2016. All estimates relating to the Medicare program in the Statement of Changes in Social Insurance Amounts represent values that are incremental to the prior change. As an example,

the present values shown for demographic data, assumptions, and methods represent the additional effect that these assumptions have, once the effects from the change in the valuation period and projection base have been considered. In general, an increase in the present value of net cash flows represents a positive change (improving financing), while a decrease in the present value of net cash flows represents a negative change (worsening financing).

Assumptions Used for the Components of the Changes for the Medicare Program

The present values included in the Statement of Changes in Social Insurance Amounts are for the current and prior years and are based on various economic and demographic assumptions used for the intermediate assumptions in the Medicare Trustees Reports for these years. Table 1B summarizes these assumptions for the current year**.**

Period Beginning on January 1, 2016, and Ending January 1, 2017

Present values as of January 1, 2016 are calculated using interest rates from the intermediate assumptions of the 2016 Medicare Trustees Report. All other present values in this part of the Statement of Changes in Social Insurance Amounts are calculated as a present value as of January 1, 2017. Estimates of the present value of changes in social insurance amounts due to changing the valuation period, projection base, demographic assumptions, and law are presented using the interest rates under the intermediate assumptions of the 2016 Medicare Trustees Report. Since interest rates are an economic estimate and all estimates in the table are incremental to the prior change, the estimates of the present values of changes in economic and health care assumptions are calculated using the interest rates under the intermediate assumptions of the 2017 Medicare Trustees Report.

Period Beginning on January 1, 2015, and Ending January 1, 2016

Present values as of January 1, 2015 are calculated using interest rates from the intermediate assumptions of the 2015 Medicare Trustees Report. All other present values in this part of the Statement of Changes in Social Insurance Amounts are calculated as a present value as of January 1, 2016. Estimates of the present value of changes in social insurance amounts due to changing the valuation period, projection base, demographic assumptions, and law are presented using the interest rates under the intermediate assumptions of the 2015 Medicare Trustees Report. Since interest rates are an economic estimate and all estimates in the table are incremental to the prior change, the estimates of the present values of changes in economic and health care assumptions are calculated using the interest rates under the intermediate assumptions of the 2016 Medicare Trustees Report.

Changes in Valuation Period

Period Beginning on January 1, 2016, and Ending January 1, 2017

The effect on the 75-year present values of changing the valuation period from the prior valuation period (2016-2090) to the current valuation period (2017-2091) is measured by using the assumptions for the prior valuation period and extending them, in the absence of any other changes, to cover the current valuation period. Changing the valuation period removes a small negative net cash flow for 2016, replaces it with a much larger negative net cash flow for 2091, and measures the present values as of January 1, 2017, one year later. Thus, the present value of estimated future net cash flow (including or excluding the combined Medicare Trust Fund assets at the start of the period) decreased (became more negative) when the 75-year valuation period changed from 2016-2090 to 2017-2091. In addition, the effect on the level of assets in the combined Medicare Trust Funds of changing the valuation period is measured by assuming all values projected in the prior valuation for the year 2016 are realized. The change in valuation period increased the starting level of assets in the combined Medicare Trust Funds.

Period Beginning on January 1, 2015, and Ending January 1, 2016

The effect on the 75-year present values of changing the valuation period from the prior valuation period (2015-2089) to the current valuation period (2016-2090) is measured by using the assumptions for the prior valuation period and extending them, in the absence of any other changes, to cover the current valuation period. Changing the valuation period removes a small negative net cash flow for 2015, replaces it with a much larger negative net cash flow for 2090, and measures the present values as of January 1, 2016, one year later. Thus, the present value of estimated future net cash flow (including or excluding the combined Medicare Trust Fund assets at the start of the period) decreased (became more negative) when the 75-year valuation period changed from 2015-2089 to 2016-2090. In addition, the effect on the level of assets in the combined Medicare Trust Funds of changing the valuation period is measured by assuming all values projected in the prior valuation for the year 2015 are realized. The change in valuation period slightly increased the starting level of assets in the combined Medicare Trust Funds.

Changes in Demographic Data, Assumptions, and Methods

Period Beginning on January 1, 2016, and Ending January 1, 2017

The demographic assumptions used in the Medicare projections are the same as those used for the Old-Age Survivors and Disability Insurance (OASDI) and are prepared by the Office of the Chief Actuary at SSA.

The ultimate demographic assumptions for the current valuation (beginning on January 1, 2017), with the exception of a small change in marriage rates, are the same as those for the prior valuation. However, the starting demographic values and the way these values transition to the ultimate assumptions were changed.

- Final birth rate data for 2015 indicated slightly lower birth rates than were assumed in the prior valuation.
- Incorporating 2014 mortality data obtained from the National Center for Health Statistics at ages under 65 and preliminary 2014 mortality data from Medicare experience at ages 65 and older resulted in higher death rates for all future years than were projected in the prior valuation.
- More recent legal and other-than-legal immigration data and historical population data were included.

There were no consequential changes in demographic methodology.

These changes slightly lowered overall Medicare enrollment for the current valuation period and resulted in a decrease in the estimated future net cash flow. The present value of estimated expenditures is lower for Part A but slightly higher for Parts B and D; and the present value of estimated income is also higher for Parts B and D but lower for Part A.

Period Beginning on January 1, 2015, and Ending January 1, 2016

The demographic assumptions used in the Medicare projections are the same as those used for the OASDI and are prepared by the Office of the Chief Actuary at SSA.

The ultimate demographic assumptions for the current valuation (beginning on January 1, 2016), with the exception of a small change in marriage rates, are the same as those for the prior valuation. However, the starting demographic values and the way these values transition to the ultimate assumptions were changed.

- Final birth rate data for 2013 and 2014 indicated lower birth rates than were expected in the prior valuation. The data also show an increase in birth rates starting in 2014, one year later than assumed in the prior valuation.
- Incorporating mortality data obtained from the National Center for Health Statistics at ages under 65 for 2012 and 2013 and from Medicare experience at ages 65 and older for 2013 resulted in slightly higher death rates than were projected in the prior valuation.
- Assumed ultimate marriage rates were decreased somewhat to reflect a continuation of recent trends.
- More recent legal and other-than-legal immigration data and historical population data were included.

There were two changes in demographic methodology:

- The transition from recent mortality rates to the ultimate rates starts sooner, immediately after the year of final data. The approach used for the prior valuation extended the trend of the last 10 years through the valuation year for the report and only thereafter started the transition to assumed ultimate rates of decline.
- Historical non-immigrant population counts were revised to match recent totals provided by the Department of Homeland Security. In addition, emigration rates for the never-authorized and visa-overstayer populations were recalibrated to reflect a longer historical period and to be less influenced by the high emigration rates experienced during the recent recession. Finally, the method for projecting emigration of the never-authorized population was altered to reflect lower rates of emigration for those who have resided here longer.

These changes slightly lowered overall Medicare enrollment for the current valuation period and resulted in an increase in the estimated future net cash flow. The present value of estimated expenditures is lower for all parts of Medicare; and the present value of estimated income is also lower for Parts B and D but very slightly higher for Part A.

Changes in Economic and Other Health Care Assumptions

Period Beginning on January 1, 2016, and Ending January 1, 2017

The economic assumptions used in the Medicare projections are the same as those used for the Old-Age Survivors and Disability Insurance (OASDI) and are prepared by the Office of the Chief Actuary at SSA.

For the current valuation (beginning on January 1, 2017), there was one change to the ultimate economic assumptions.

- The ultimate average real-wage differential is assumed to be 1.20 percent in the current valuation, which is close to a 0.01 percent decrease relative to the previous valuation (even though both ultimate average real-wage differentials are 1.20 when rounded to two decimal places).

In addition to this change in assumption, the assumed real-wage differential for the first ten years of the projection period averaged 0.05 percent lower than in the previous valuation. The lower long-term and near-term real-wage differential assumptions are based on new projections of faster growth in employer sponsored group health insurance premiums. Because these premiums are not subject to the payroll tax, faster growth in these premiums means that a smaller share of employee compensation will be in the form of wages that are subject to the payroll tax.

Otherwise, the ultimate economic assumptions for the current valuation are the same as those for the prior valuation. However, the starting economic values and the way these values transition to the ultimate assumptions were changed. Most significantly, an assumed weaker recovery from the recent recession than previously expected led to a reduction in the ultimate level of actual and potential GDP of about 1.0 percent for all years after the short-range period.

The health care assumptions are specific to the Medicare projections. The following health care assumptions were changed in the current valuation.
- Utilization rate assumptions for inpatient hospital and skilled nursing facilities services were decreased.
- The number of beneficiaries enrolled in Medicare Advantage plans and their relative costs are slightly different from last year's assumptions.
- Lower productivity increases through 2025, resulting in higher provider payment updates.
- Higher projected drug rebates.
- Change in projection methodology of drug spending for Part B patients with end-stage renal disease.

The net impact of these changes resulted in a decrease in the estimated future net cash flow for total Medicare.

Period Beginning on January 1, 2015, and Ending January 1, 2016

The economic assumptions used in the Medicare projections are the same as those used for the OASDI and are prepared by the Office of the Chief Actuary at SSA.

For the current valuation (beginning on January 1, 2016), there were three changes to the ultimate economic assumptions.
- The ultimate rate of price inflation (CPI-W) was lowered by 0.1 percentage point, to 2.6 percent from 2.7 percent for the previous valuation.
- The ultimate average real-wage differential is assumed to be 1.20 percent in the current valuation period, compared to 1.17 percent in the previous valuation period.
- The ultimate real interest rate was lowered by 0.2 percentage point, to 2.7 percent from 2.9 percent for the previous valuation period.

While very low inflation in recent years is reflective of U.S. and international supply and demand factors that have been affected by the global recession, the average rate of change in the CPI-W over the last two complete business cycles (from 1989 to 2007) is 2.63 percent.

The higher real-wage differential assumption is based on new projections by CMS of slower growth in employer-sponsored group health insurance premiums. Because these premiums are not subject to the payroll tax, slower growth in these premiums means that a greater share of employee compensation will be in the form of wages that are subject to the payroll tax.

Real interest rates have been low since 2000, and particularly low since the start of the recent recession. An ongoing and much-debated question among experts is how much of this change is cyclic or a temporary response to extraordinary events, versus a fundamental permanent change. The Trustees believe that lowering the long-term ultimate real interest rate somewhat is appropriate at this time. The long-range present values are very sensitive to the ultimate interest rate assumption because they are used as the discount factor. The reduction in the ultimate interest rate assumption from 2.9 percent to 2.7 percent increases each of the present values by roughly 15 to 16 percent.

Otherwise, the ultimate economic assumptions for the current valuation are the same as those for the prior valuation. However, the starting economic values and the way these values transition to the ultimate assumptions were changed.
- A reduction in the ultimate level of actual and potential GDP of about 1.0 percent is assumed. Thus, by the end of the short-range period (2025) and for all years thereafter, projected GDP in 2009 dollars is about 1.8 percent below the level in last year's report.

The health care assumptions are specific to the Medicare projections. The following health care assumptions were changed in the current valuation.
- Utilization rate assumptions for inpatient hospital services were increased.

- The number of beneficiaries enrolled in Medicare Advantage plans and their relative costs are slightly different from last year's assumptions.
- Lower productivity increases through 2021, resulting in higher provider payment updates.
- Greater reductions in expenditures attributable to the Independent Payment Advisory Board.
- Inclusion of the income and expenditures for aged non-insured beneficiaries in the Medicare Part A long-range analysis.
- Higher projected drug cost trend, particularly for certain high-cost specialty drugs.

The net impact of these changes resulted in a decrease in the estimated future net cash flow for total Medicare. For Part A, these changes resulted in an increase to the present value of estimated future expenditures and income, with an overall decrease in the estimated future net cash flow. For Part B and Part D, these changes increased the present value of estimated future expenditures (and also income).

Changes in Law or Policy

Period Beginning on January 1, 2016, and Ending January 1, 2017

The monetary effect of the changes in law or policy on the present value of the 75-year estimated future income, expenditures, and net cash flow of the Medicare program was not sigificant at the consolidated level. Please refer to HHS's financial statements for further information related to the impact of the changes in law or policy on the 75-year estimated future income, expenditures, and net cash flow of the Medicare program.

Period Beginning on January 1, 2015, and Ending January 1, 2016

Most of the provisions enacted as part of Medicare legislation since the prior valuation date had little or no impact on the program. The following provisions did have a financial impact on the present value of the 75-year estimated future income, expenditures, and net cash flow.

- The *Trade Preference Extension Act of 2015* requires Medicare coverage for renal dialysis services provided by outpatient renal dialysis facilities to individuals with acute kidney injury, effective January 1, 2017.
- The *Bipartisan Budget Act of 2015* (BBA) included provisions that affect the HI and SMI programs.
  - o The BBA required that the 2016 actuarial rate for enrollees aged 65 and older be determined as if the hold-harmless provision does not apply, thereby lowering the standard Part B premium rate from what it otherwise would have been. The premium revenue that was lost by using the resulting lower premium (excluding the forgone income-related premium revenue) was replaced by a transfer of general revenue from the Treasury, which will be repaid over time to the General Fund. Starting in 2016, in order to repay the balance due (which is to include the transfer amount and the forgone income-related premium revenue), the monthly Part B premium otherwise determined is to be increased by $3.00. These repayment amounts are to be added to the Part B premium otherwise determined each year and paid back to the General Fund. This $3.00 increase will not be matched by government contributions. These repayment amounts are to continue until the total amount collected is equal to the beginning balance due. (In the final year of the repayment, the additional amounts may be modified to avoid an overpayment.) The repayment amounts (excluding those for high-income enrollees) are subject to the hold-harmless provision. The BBA also stipulated that if the Social Security cost-of-living adjustment (COLA) was 0 percent in 2017, then an additional transfer (and $3 repayment amount) would have again applied. However, the 2017 COLA of 0.3 percent was released on October 18, 2016.
  - o Outpatient hospital services provided on or after January 1, 2017 by most new off-campus hospital provider-based outpatient departments (that is, those established on or after the BBA date of enactment of November 2, 2015 and located more than 250 yards from the campus) are excluded from the outpatient hospital prospective payment system, and are instead to be reimbursed under the applicable Part B payment system.
  - o The sequestration process that is in place should Congress fail to address the budget deficit by certain deadlines is extended by one year, through fiscal year 2025. In addition, Medicare benefit payments for services provided under periods of sequestration incur a payment reduction limited to 2 percent, so that the former differential payment reduction limits imposed for fiscal years 2023 and 2024 are replaced with 2-percent limits. Finally, the 2-percent limit is raised to 4.0 percent for the first 6 months of sequestration required for fiscal year 2025 and reduced to 0.0 percent for the second 6 months of the year.

- The *Consolidated Appropriations Act of 2016* included provisions that affect the HI and SMI programs.
  - The payment calculation associated with inpatient hospital operating costs for Puerto Rico hospital discharges on or after January 1, 2016 is to be based on 0 percent of the applicable Puerto Rico percentage and 100 percent of the applicable federal percentage. (In addition, CMS announced that both the fiscal year 2016 Inpatient Prospective Payment System Pricer and the Long-Term Care Hospital Pricer, which are used to determine all inpatient hospital payment rates and certain long-term care hospital payment rates, respectively, for providers nationwide, are to incorporate the Puerto Rico inpatient hospital payment modification. These conforming changes are applicable to inpatient hospital discharges and long-term care hospital discharges on or after January 1, 2016.)
  - Puerto Rico hospitals are eligible to receive incentive payments under the Medicare Electronic Health Records Incentive Program, effective January 1, 2016.
  - Effective January 1, 2017, separate Medicare payment is authorized to home health agencies when they use cost-effective disposable alternatives to negative pressure wound therapy equipment.
  - To incentivize the transition from traditional x-ray imaging to digital radiography, Part B payment for the technical component of film x-rays, under the hospital outpatient prospective payment system and under the physician fee schedule, is reduced by 20 percent beginning in 2017. In addition, payment for the technical component of x-rays taken using computed radiography technology is reduced by 7 percent during 2018 through 2022 and by 10 percent beginning in 2023. Also, the discount in payment for the professional component of multiple imaging services furnished on or after January 1, 2017 is reduced from 25 percent to 5 percent, and the 5 percent reduction is taken in a non-budget neutral manner.
  - A one-year moratorium for calendar year 2017 is placed on the annual fee to be paid by health insurance providers. This fee, which was established by the *Affordable Care Act*, is imposed on certain large health insurance providers, including those furnishing coverage under Medicare Advantage (Part C) and Medicare Part D. (Since Medicare Advantage is paid for by the HI Trust Fund and the Part B account of the SMI Trust Fund, this provision affects all parts of Medicare.)

Overall these provisions resulted in a slight increase in the estimated future net cash flow for total Medicare. For Part A, these changes resulted in a slight decrease to the present value of estimated future expenditures, with an overall increase in the estimated future net cash flow. For Part B, these changes decreased the present value of estimated future expenditures (and also income). For Part D, the above-mentioned changes also resulted in a lower present value of estimated future expenditures (and also income) but only very slightly.

Change in Projection Base

Period Beginning on January 1, 2016, and Ending January 1, 2017

Actual income and expenditures in 2016 were different than what was anticipated when the 2016 Medicare Trustees Report projections were prepared. Part A income was higher and expenditures were lower than anticipated, based on actual experience. Part B total income and expenditures were higher than estimated based on actual experience. For Part D, actual income and expenditures were both lower than prior estimates. The net impact of the Part A, B, and D projection base changes is an increase in the estimated future net cash flow. Actual experience of the Medicare Trust Funds between January 1, 2016 and January 1, 2017 is incorporated in the current valuation and is slightly more than projected in the prior valuation.

Period Beginning on January 1, 2015, and Ending January 1, 2016

Actual income and expenditures in 2015 were different than what was anticipated when the 2015 Medicare Trustees Report projections were prepared. Part A income and expenditures were higher than anticipated, based on actual experience. Part B total income and expenditures were lower than estimated based on actual experience. For Part D, actual income and expenditures were both higher than prior estimates. The net impact of the Part A, B, and D projection base changes is a decrease in the estimated future net cash flow. Actual experience of the Medicare Trust Funds between January 1, 2015 and January 1, 2016 is incorporated in the current valuation and is slightly less than projected in the prior valuation.

Potential Impact on the Social Insurance Statements of the September 5, 2017 Rescission of the 2012 DACA Policy Directive

The DACA policy directive was implemented on June 15, 2012. On September 5, 2017, the Department of Homeland Security rescinded the 2012 DACA policy directive and scheduled an orderly phase out of the DACA program. The SSA Office of the Chief Actuary has concluded that the phase out of the DACA program has an effect on the actuarial methods and assumptions used in developing the estimates presented in the Statements of Social Insurance and the Statement of

Changes in Social Insurance Amounts. It is expected that the phase-out of the DACA program, which affects the demographic assumptions used in the Medicare projections, will not have a material impact on the present value estimates in the Statements of Social Insurance and Statement of Changes in Social Insurance Amounts.

Other

The present values included in the Statement of Changes in Social Insurance Amounts for the Railroad Retirement program are for the current and prior valuation and are based on various employment, demographic, and economic assumptions that reflect the RRB's reasonable estimate of expected future financial and actuarial status of the trust funds.

Note that beginning in fiscal year 2016, the present values included in the Statement of Changes in Social Insurance Amounts for the Railroad Retirement program were on a fiscal year basis, as of October 1, 2015. Prior to fiscal year 2016, all present values were on a calendar year basis, as of January 1. The primary reasons for the changes in the 2017 Statement of Changes in Social Insurance Amounts for Railroad Retirement are for the 12-month period between October 1, 2015 and October 1, 2016, while the primary reasons for the changes in the 2016 Statement of Changes in Social Insurance Amounts for Railroad Retirement were for the 9-month period between January 1, 2015 and October 1, 2015. Consequently, the Railroad Retirement changes on the 2017 Statement of Changes in Social Insurance Amounts will not be comparable to the Railroad Retirement changes on the 2016 Statement of Changes in Social Insurance Amounts. For a more detailed description of the primary reasons for the changes in the 2017 Statement of Changes in Social Insurance Amounts, refer to RRB's financial statements.

The significant assumptions used in the projections of the Black Lung social insurance program, referenced earlier in this note, affect the amounts reported on the Statement of Changes in Social Insurance Amounts, which shows two reconciliations for Black Lung: (1) changes in the open group measure for the year ended September 30, 2017, and (2) changes in the open group measure for the year ended September 30, 2016. For a more detailed description of the primary reasons for the changes in the 2017 Statement of Changes in Social Insurance Amounts, refer to DOL's financial statements.