115th Congress, 1st Session – – – – – – – – – – – – – – – – – – – House Document 115-53

THE 2017 ANNUAL REPORT OF THE BOARDS OF TRUSTEES OF THE FEDERAL HOSPITAL INSURANCE AND FEDERAL SUPPLEMENTARY MEDICAL INSURANCE TRUST FUNDS

COMMUNICATION

FROM

THE BOARDS OF TRUSTEES, FEDERAL HOSPITAL INSURANCE AND FEDERAL SUPPLEMENTARY MEDICAL INSURANCE TRUST FUNDS

TRANSMITTING

THE 2017 ANNUAL REPORT OF THE BOARDS OF TRUSTEES OF THE FEDERAL HOSPITAL INSURANCE AND FEDERAL SUPPLEMENTARY MEDICAL INSURANCE TRUST FUNDS

July 18, 2017.—Referred jointly to the Committees on Ways and Means and Energy and Commerce, and ordered to be printed

U.S. GOVERNMENT PUBLISHING OFFICE

26-118 WASHINGTON: 2017

AUTHENTICATED
U.S. GOVERNMENT
INFORMATION
GPO

LETTER OF TRANSMITTAL

BOARDS OF TRUSTEES OF THE
FEDERAL HOSPITAL INSURANCE AND
FEDERAL SUPPLEMENTARY MEDICAL INSURANCE TRUST FUNDS,
Washington, D.C., July 13, 2017

HONORABLE PAUL D. RYAN,
Speaker of the House of Representatives

HONORABLE MICHAEL R. PENCE,
President of the Senate

DEAR MR. SPEAKER AND MR. PRESIDENT:

We have the honor of transmitting to you the 2017 Annual Report of the Boards of Trustees of the Federal Hospital Insurance Trust Fund and the Federal Supplementary Medical Insurance Trust Fund, the 52nd such report.

Respectfully,

STEVEN T. MNUCHIN,
Secretary of the Treasury, and Managing Trustee of the Trust Funds.

R. ALEXANDER ACOSTA,
Secretary of Labor, and Trustee.

THOMAS E. PRICE, M.D.,
Secretary of Health and Human Services, and Trustee.

NANCY A. BERRYHILL,
Acting Commissioner of Social Security, and Trustee.

VACANT,
Public Trustee.

VACANT,
Public Trustee.

DEMETRIOS L. KOUZOUKAS,
Principal Deputy Administrator for Medicare, Centers for Medicare & Medicaid Services, and Acting Secretary, Boards of Trustees.

CONTENTS

I. INTRODUCTION 1
II. OVERVIEW 7
A. Highlights 7
B. Medicare Data for Calendar Year 2016 10
C. Medicare Assumptions 12
D. Financial Outlook for the Medicare Program 18
E. Financial Status of the HI Trust Fund 25
F. Financial Status of the SMI Trust Fund 31
G. Conclusion 40
III. ACTUARIAL ANALYSIS 43
A. Introduction 43
B. HI Financial Status 44
1. Financial Operations in Calendar Year 2016 44
2. 10-Year Actuarial Estimates (2017-2026) 51
3. Long-Range Estimates 60
4. Long-Range Sensitivity Analysis 72
C. Part B Financial Status 77
1. Financial Operations in Calendar Year 2016 77
2. 10-Year Actuarial Estimates (2017-2026) 85
3. Long-Range Estimates 97
D. Part D Financial Status 98
1. Financial Operations in Calendar Year 2016 99
2. 10-Year Actuarial Estimates (2017-2026) 103
3. Long-Range Estimates 110
IV. ACTUARIAL METHODOLOGY 113
A. Hospital Insurance 113
B. Supplementary Medical Insurance 125
1. Part B 125
2. Part D 138
C. Private Health Plans 148
D. Long-Range Medicare Cost Growth Assumptions 158
V. APPENDICES 168
A. Medicare Amendments since the 2016 Report 168
B. Total Medicare Financial Projections 176
C. Illustrative Alternative Projections 190
D. Average Medicare Expenditures per Beneficiary 196
E. Medicare Cost-Sharing and Premium Amounts 199
F. Medicare and Social Security Trust Funds and the Federal Budget 206
G. Infinite Horizon Projections 213
H. Fiscal Year Historical Data and Projections through 2026 220
I. Glossary 231
List of Tables 251
List of Figures 255
J. Statement of Actuarial Opinion 256

I. INTRODUCTION

The Medicare program has two separate trust funds, the Hospital Insurance Trust Fund (HI) and the Supplementary Medical Insurance Trust Fund (SMI). HI, otherwise known as Medicare Part A, helps pay for hospital, home health services following hospital stays, skilled nursing facility, and hospice care for the aged and disabled. SMI consists of Medicare Part B and Part D. Part B helps pay for physician, outpatient hospital, home health, and other services for the aged and disabled who have voluntarily enrolled. Part D provides subsidized access to drug insurance coverage on a voluntary basis for all beneficiaries and premium and cost-sharing subsidies for low-income enrollees. Medicare also has a Part C, which serves as an alternative to traditional Part A and Part B coverage. Under this option, beneficiaries can choose to enroll in and receive care from private Medicare Advantage and certain other health insurance plans. Medicare Advantage and Program of All-Inclusive Care for the Elderly (PACE) plans receive prospective, capitated payments for such beneficiaries from the HI and SMI Part B trust fund accounts; the other plans are paid from the accounts on the basis of their costs.

The Social Security Act established the Medicare Board of Trustees to oversee the financial operations of the HI and SMI trust funds.[1] The Board has six members. Four members serve by virtue of their positions in the Federal Government: the Secretary of the Treasury, who is the Managing Trustee; the Secretary of Labor; the Secretary of Health and Human Services; and the Commissioner of Social Security. Two other members are public representatives whom the President appoints and the Senate confirms. These positions are currently vacant. The Administrator of the Centers for Medicare & Medicaid Services (CMS) serves as Secretary of the Board.

The Social Security Act requires that the Board, among other duties, report annually to the Congress on the financial and actuarial status of the HI and SMI trust funds. The 2017 report is the 52nd that the Board has submitted.

The projections in this year's report, with one exception related to Part A, are based on current law; that is, they assume that laws on the books will be implemented and adhered to with respect to scheduled taxes, premium revenues, and payments to providers and health plans. The one exception is that the projections disregard payment reductions

[1]The Social Security Act established separate boards for HI and SMI. Both boards have the same membership, so for convenience they are collectively referred to as the Medicare Board of Trustees in this report.

that would result from the projected depletion of the Medicare Hospital Insurance trust fund. Under current law, payments would be reduced to levels that could be covered by incoming tax and premium revenues when the HI trust fund was depleted. If the projections reflected such payment reductions, then any imbalances between payments and revenues would be automatically eliminated, and the report would not fulfill one of its critical functions, which is to inform policy makers and the public about the size of any trust fund deficits that would need to be resolved to avert program insolvency. To date, lawmakers have never allowed the assets of the Medicare HI trust fund to become depleted.

Projections of Medicare costs are highly uncertain, especially when looking out more than several decades. One reason for uncertainty is that scientific advances will make possible new interventions, procedures, and therapies. Some conditions that are untreatable today will be handled routinely in the future. Spurred by economic incentives, the institutions through which care is delivered will evolve, possibly becoming more efficient. While most health care technological advances to date have tended to increase expenditures, the health care landscape is shifting. No one knows whether future developments will, on balance, increase or decrease costs.

While the physician payment updates and new incentives put in place by the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA) avoid the significant short-range physician payment issues that would have resulted from the sustainable growth rate (SGR) system approach, they nevertheless raise important long-range concerns. In particular, additional payments of $500 million per year for one group of physicians and 5-percent annual bonuses for another group are scheduled to expire in 2025, resulting in a significant one-time payment reduction for most physicians. In addition, the law specifies the physician payment update amounts for all years in the future, and these amounts do not vary based on underlying economic conditions, nor are they expected to keep pace with the average rate of physician cost increases. 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 the Trustees estimated that physician payment rates under current law will be lower than they would have been under the 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.

The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, introduced large policy changes and additional projection uncertainty. This legislation, referred to collectively as the Affordable Care Act or ACA, contains roughly 165 provisions affecting the Medicare program by reducing costs, increasing revenues, improving benefits, combating fraud and abuse, and initiating a major program of research and development to identify alternative provider payment mechanisms, health care delivery systems, and other changes intended to improve the quality of health care and reduce costs. The Board assumes that the various cost-reduction measures—the most important of which are 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[2]—will occur as the ACA requires. In order for this outcome to be achievable, health care providers would have to realize productivity improvements at a faster rate than experienced historically. However, 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.

Since 2008, U.S. national health expenditure (NHE) growth has been below historical averages, despite having accelerated in 2014 mainly due to insurance coverage expansions. There is some debate regarding the extent to which the slower growth reflects (i) one-time effects such as the recent economic downturn, (ii) positive reforms in the health care sector that may carry forward to produce additional cost savings in the years ahead, or (iii) other factors. It is possible that U.S. health care practices are in the process of becoming more efficient as providers anticipate more modest reimbursement growth rates, in both the public and private sectors, than experienced in recent decades. The methodology for projecting Medicare finances assumes a substantial long-term reduction in per capita health expenditure growth rates relative to historical experience, to which the cost-reduction provisions of the ACA and MACRA would add substantial further savings.

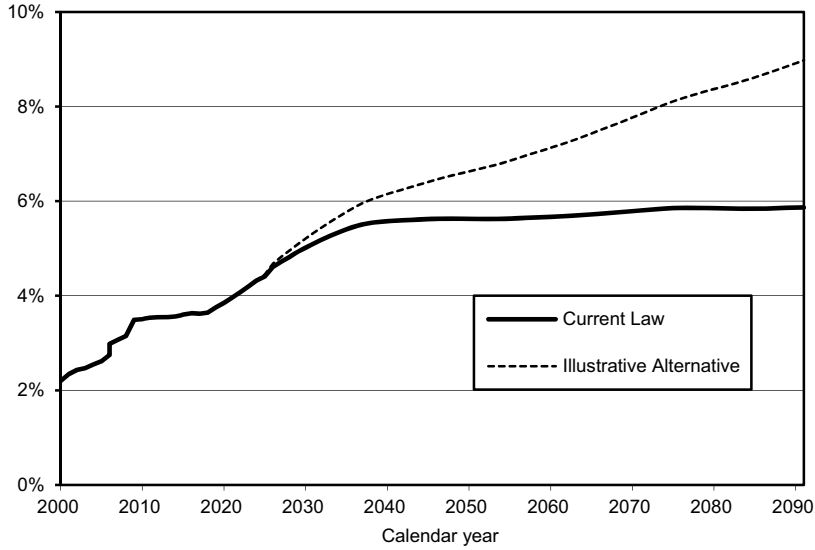
Notwithstanding recent favorable developments, current-law projections indicate that Medicare still faces a substantial financial

[2]For convenience the term *economy-wide private nonfarm business multifactor productivity* will henceforth be referred to as *economy-wide productivity*.

shortfall that will need to be addressed with further legislation. Such legislation should be enacted sooner rather than later to minimize the impact on beneficiaries, providers, and taxpayers.

Figure I.1 shows Medicare's projected expenditures as a percentage of the Gross Domestic Product (GDP) under two sets of assumptions: current law and an illustrative alternative, described below.[3]

Figure I.1.—Medicare Expenditures as a Percentage of the Gross Domestic Product under Current Law and Illustrative Alternative Projections



Note: Percentages are affected by economic cycles.

The current-law expenditure projections reflect the physicians' payment levels expected under the MACRA payment rules and the ACA-mandated reductions in other Medicare payment rates, but not the payment reductions and/or delays that would result from the HI trust fund depletion. In the year of asset depletion, which is projected

[3]At the request of the Trustees, the Office of the Actuary at CMS has prepared a set of illustrative Medicare projections under a hypothetical modification to current law. A summary of the projections under the illustrative alternative is contained in appendix V.C of this report, and a more detailed discussion is available at http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/ReportsTrustFunds/Downloads/2017TRAlternativeScenario.pdf. Readers should not infer any endorsement of the policies represented by the illustrative alternative by the Trustees, CMS, or the Office of the Actuary. Appendix V.C also provides additional information on the uncertainties associated with productivity adjustments to specific provider payment updates and the scheduled physician updates.

to be 2029 in this report, HI revenues are projected to cover 88 percent of program costs.

The illustrative alternative shown in the top line of figure I.1 assumes legislative changes that result in (i) physician payment updates that transition from the average 0.6-percent update for 2026 to the rate of growth in the Medicare Economic Index (MEI) of 2.2 percent for 2041 and later; (ii) no expiration 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); (iii) a partial phase-out of the ACA reductions in Medicare payment rates from 2020 through 2034; and (iv) an elimination of the cost-reducing actions of the Independent Payment Advisory Board (IPAB). The difference between the illustrative alternative and the current-law projections demonstrates that the long-range costs could be substantially higher than shown throughout much of the report if the MACRA[4] and ACA[5] cost-reduction measures prove problematic and new legislation scales them back.

As figure I.1 shows, Medicare's costs under current law rise from their current level of 3.6 percent of GDP to 5.6 percent in 2041 and to 5.9 percent in 2091. Under the illustrative alternative, in which adherence to the MACRA and ACA cost-reducing measures erodes, projected costs would rise to 6.2 percent of GDP in 2041 and to 9.0 percent in 2091.

As the preceding discussion explains, and as the substantial differences between current-law and illustrative alternative projections demonstrate, Medicare's actual future costs are highly uncertain for reasons apart from the inherent challenges in projecting health care cost growth over time. The Board recommends that readers interpret the current-law estimates in the report as the outcomes that would be experienced under the Trustees' economic and demographic

---

[4]Under MACRA, a significant one-time payment reduction is scheduled for most physicians in 2025. In addition, the law specifies physician payment rate updates of 0.75 percent or 0.25 percent annually thereafter for physicians in advanced APMs or MIPS, respectively. These updates are notably lower than the projected physician cost increases, which are assumed to average 2.2 percent per year in the long range.

[5]Under the ACA, Medicare's annual payment rate updates for most categories of provider services would be reduced below the increase in providers' input prices by the growth in economy-wide productivity (1.1 percent over the long range). In addition, the IPAB would be charged with recommending cost savings as are necessary to hold overall per capita Medicare growth to the average of the Consumer Price Index (CPI-U) and CPI-medical care increases in 2015-2019 and to the rate of per capita GDP growth plus 1 percentage point thereafter (subject to certain limits). Unless overridden by lawmakers, these recommendations would be implemented automatically.

assumptions if the productivity adjustments and IPAB measures in the ACA and the physician price updates in MACRA can be and are sustained in the long range. Readers are encouraged to review appendix V.C for further information on this important subject. Where applicable, the Trustees note the key financial outcomes under the illustrative alternative projections in addition to the current-law projections.

II. OVERVIEW

A. HIGHLIGHTS

The major findings of this report under the intermediate set of assumptions appear below. The balance of the Overview and the following Actuarial Analysis section describe these findings in more detail.

In 2016

In 2016, Medicare covered 56.8 million people: 47.8 million aged 65 and older, and 9.0 million disabled. Over 32 percent of these beneficiaries have chosen to enroll in Part C private health plans that contract with Medicare to provide Part A and Part B health services. Total expenditures in 2016 were $678.7 billion, and total income was $710.2 billion, which consisted of $700.4 billion in non-interest income and $9.8 billion in interest earnings. Assets held in special issue U.S. Treasury securities increased by $31.5 billion to $294.7 billion.

Short-Range Results

The estimated depletion date for the HI trust fund is 2029, one year later than in last year's report. As in past years, the Trustees have determined that the fund is not adequately financed over the next 10 years. HI expenditures are projected to be lower than last year's estimates, mostly due to lower inpatient hospital utilization assumptions and lower-than-expected spending in 2016.

In 2016, HI income exceeded expenditures by $5.4 billion. The Trustees project modest surpluses to continue in 2017 through 2022, with a return to deficits thereafter until the trust fund becomes depleted in 2029. The assets were $199.1 billion at the beginning of 2017, representing about 67 percent of expenditures during the year, which is below the Trustees' minimum recommended level of 100 percent. The HI trust fund has not met the Trustees' formal test of short-range financial adequacy since 2003 (as discussed in section III.B). Growth in HI expenditures has averaged 2.1 percent annually over the last 5 years, compared with non-interest income growth of 5.9 percent. Over the next 5 years, projected annual growth rates for expenditures and non-interest income are 5.7 percent and 5.8 percent, respectively.

The SMI trust fund is expected to be adequately financed over the next 10 years and beyond because premium income and general revenue income for Parts B and D are reset each year to cover expected costs and ensure a reserve for Part B contingencies. A hold-harmless provision in the law restricted Part B premium increases for most beneficiaries in 2017 to an average increase of about $4.00 per month.

However, for the 30 percent of beneficiaries to whom the provision does not apply, the 2017 Part B monthly premium rate increased substantially from $121.80 to $134.00. (See sections II.F and III.C for further details.)

Part B and Part D costs have averaged annual growth of 5.4 percent and 8.3 percent, respectively, over the last 5 years, as compared to growth of 3.7 percent for GDP. Under current law, the Trustees project an average annual Part B growth rate of 7.8 percent over the next 5 years; for Part D, the estimated average annual increase in expenditures for these 5 years is 6.4 percent. The projected average annual rate of growth for the U.S. economy is 5.2 percent during this period, significantly slower than for Part B and Part D.

A finding of *excess general revenue Medicare funding* (defined as a determination that occurs when the difference between Medicare's total outlays and its dedicated financing sources[6] exceeds 45 percent of outlays) is projected for fiscal year 2023. Therefore, the Trustees are issuing a determination of projected excess general revenue Medicare funding in this report. Such determinations were previously made in each of the 2006 through 2013 reports.

Long-Range Results

For the 75-year projection period, the HI actuarial deficit has decreased to 0.64 percent of taxable payroll from 0.73 percent of taxable payroll in last year's report. (Under the illustrative alternative projections, the HI actuarial deficit would be 1.76 percent of taxable payroll, compared to 1.85 percent in last year's report.) The 0.09 percent of payroll decrease in the actuarial deficit was primarily due to lower spending in 2016 and lower projected utilization of inpatient hospital services than were previously estimated.

Part B outlays were 1.6 percent of GDP in 2016, and the Board projects that they will grow to about 2.6 percent by 2091 under current law. The long-range projections as a percent of GDP are slightly higher than those in last year's report. (Part B costs in 2091 would be 4.2 percent under the illustrative alternative scenario.)

The Board estimates that Part D outlays will increase from 0.5 percent of GDP in 2016 to about 1.2 percent by 2091. These long-range outlay projections, as a percent of GDP, are slightly lower than those shown in last year's report.

---

[6]Dedicated financing sources consist of HI payroll taxes, HI share of income taxes on Social Security benefits, Part D State transfers, Part B drug fees, and beneficiary premiums.

Transfers from the general fund finance about three-quarters of SMI costs and are central to the automatic financial balance of the fund's two accounts. Such transfers represent a large and growing requirement for the Federal budget. SMI general revenues currently equal 1.7 percent of GDP and would increase to an estimated 2.7 percent in 2091.

Conclusion

Total Medicare expenditures were $679 billion in 2016. The Board projects that expenditures will increase in future years at a faster pace than either aggregate workers' earnings or the economy overall and that, as a percentage of GDP, they will increase from 3.6 percent in 2016 to 5.9 percent by 2091 (based on the Trustees' intermediate set of assumptions). If the reduced price increases for physicians and other health services under Medicare are not sustained and do not take full effect in the long range as in the illustrative alternative projection, then Medicare spending would instead represent roughly 9.0 percent of GDP in 2091. Growth under any of these scenarios, if realized, would substantially increase the strain on the nation's workers, the economy, Medicare beneficiaries, and the Federal budget.

The Trustees project that HI tax income and other dedicated revenues will fall short of HI expenditures in most future years. The HI trust fund does not meet either the Trustees' test of short-range financial adequacy or their test of long-range close actuarial balance.

The Part B and Part D accounts in the SMI trust fund are expected to be adequately financed because premium income and general revenue income are reset each year to cover expected costs. Such financing, however, would have to increase faster than the economy to cover expected expenditure growth.

The financial projections in this report indicate a need for substantial steps to address Medicare's remaining financial challenges. Consideration of further reforms should occur in the near future. The sooner solutions are enacted, the more flexible and gradual they can be. Moreover, the early introduction of reforms increases the time available for affected individuals and organizations—including health care providers, beneficiaries, and taxpayers—to adjust their expectations and behavior. The Trustees recommend that Congress and the executive branch work closely together with a sense of urgency to address the depletion of the HI trust fund and the projected growth in HI (Part A) and SMI (Parts B and D) expenditures.

B. MEDICARE DATA FOR CALENDAR YEAR 2016

HI (Part A) and SMI (Parts B and D) have separate trust funds, sources of revenue, and categories of expenditures. Table II.B1 presents Medicare data for calendar year 2016, in total and for each part of the program. For fee-for-service Medicare, the largest category of Part A expenditures is inpatient hospital services, while the largest Part B expenditure category is physician services. Payments to private health plans for providing Part A and Part B services currently represent roughly 33 percent of total A and B benefit outlays.

Table II.B1.—Medicare Data for Calendar Year 2016

		SMI		
	HI or Part A	Part B	Part D	Total
Assets at end of 2015 (billions)	$193.8	$68.2	$1.3	$263.2
Total income	$290.8	$313.2	$106.2	$710.2
Payroll taxes	253.5	—	—	253.5
Interest	7.7	2.1	0.0	9.8
Taxation of benefits	23.0	—	—	23.0
Premiums	3.3	72.1	13.8	89.1
General revenue	1.2	235.6	82.4	319.2
Transfers from States	—	—	10.0	10.0
Other	2.1	3.4	—	5.5
Total expenditures	$285.4	$293.4	$100.0	$678.7
Benefits	280.5	289.5	99.5	669.5
Hospital	141.3	49.6	—	191.0
Skilled nursing facility	29.1	—	—	29.1
Home health care	7.1	11.5	—	18.5
Physician fee schedule services	—	69.9	—	69.9
Private health plans (Part C)	85.2	103.4	—	188.6
Prescription drugs	—	—	99.5	99.5
Other	17.8	55.0	—	72.8
Administrative expenses	4.9	3.9	0.5	$9.2
Net change in assets	$5.4	$19.8	$6.3	$31.5
Assets at end of 2016	$199.1	$88.0	$7.6	$294.7
Enrollment (millions)				
Aged	47.5	43.9	36.1	47.8
Disabled	9.0	8.2	7.1	9.0
Total	56.5	52.1	43.2	56.8
Average benefit per enrollee	$4,968	$5,558	$2,304	$12,829

Note: Totals do not necessarily equal the sums of rounded components.

For HI, the primary source of financing is the payroll tax on covered earnings. Employers and employees each pay 1.45 percent of a worker's wages, while self-employed workers pay 2.9 percent of their net earnings. Starting in 2013, high-income workers pay an additional 0.9-percent tax on their earnings above an unindexed threshold ($200,000 for single taxpayers and $250,000 for married couples). Other HI revenue sources include a portion of the Federal income taxes that Social Security recipients with incomes above certain unindexed thresholds pay on their benefits, as well as interest paid from the general fund on the U.S. Treasury securities held in the HI trust fund.

For SMI, transfers from the general fund of the Treasury represent the largest source of income and covered about 81 percent of program costs in 2016.[7] Also, beneficiaries pay monthly premiums for Parts B and D that finance a portion of the total cost. As with HI, the U.S. Treasury securities held in the SMI trust fund earn interest paid from the general fund.

[7]Transfers from the general fund were higher than usual in 2016 due to the provisions of the Bipartisan Budget Act of 2015 (BBA), as explained in more detail in section III.C of this report.

C. MEDICARE ASSUMPTIONS

Future Medicare expenditures will depend on a number of factors, including the size and composition of the population eligible for benefits, changes in the volume and intensity of services, and increases in the price per service. Future HI trust fund income will depend on the size of the covered work force and the level of workers' earnings, and future SMI trust fund income will depend on projected program costs. These factors will depend in turn upon future birth rates, death rates, labor force participation rates, wage increases, and many other economic and demographic factors affecting Medicare. To illustrate the uncertainty and sensitivity inherent in estimates of future Medicare trust fund operations, the Board has prepared current-law projections under a low-cost and a high-cost set of economic and demographic assumptions as well as under an intermediate set. In addition, the Trustees asked the CMS Office of the Actuary to develop the illustrative alternative projections to demonstrate the potential effect on the Medicare financial status if certain current-law features are not fully implemented in the future.

Table II.C1 summarizes the key assumptions used in this report. Many of the demographic and economic variables that determine Medicare costs and income are common to the Old-Age, Survivors, and Disability Insurance (OASDI) program, and the OASDI annual report explains these variables in detail. These variables include changes in the Consumer Price Index (CPI) and wages, real interest rates, fertility rates, mortality rates, and net immigration levels. (*Real* indicates that the effects of inflation have been removed.) The assumptions vary, in most cases, from year to year during the first 5 to 30 years before reaching the ultimate values[8] assumed for the remainder of the 75-year projection period.

[8]The assumptions do not include economic cycles beyond the first 10 years.

Table II.C1.—Key Assumptions, 2041-2091

	Intermediate	Low-Cost	High-Cost
Economic:			
Annual percentage change in:			
Gross Domestic Product (GDP) per capita[1]	3.9	5.0	2.7
Average wage in covered employment	3.8	5.0	2.6
Private nonfarm business multifactor productivity[2]	1.1	—	—
Consumer Price Index (CPI)	2.6	3.2	2.0
Real-wage differential (percent)	1.2	1.8	0.6
Real interest rate (percent)	2.7	3.2	2.2
Demographic:			
Total fertility rate (children per woman)	2.00	2.20	1.80
Annual percentage reduction in total age-sex adjusted death rates	0.72	0.41	1.03
Net annual immigration	1,245,000	1,570,000	955,000
Health cost growth:			
Annual percentage change in per beneficiary Medicare expenditures (excluding demographic impacts)[1]			
HI (Part A)	3.7	[3]	[3]
SMI Part B	3.6	[3]	[3]
SMI Part D	4.5	[3]	[3]
Total Medicare	3.7	[3]	[3]

[1]The assumed ultimate increases in per capita GDP and per beneficiary Medicare expenditures can also be expressed in real terms, adjusted to remove the impact of assumed inflation. When adjusted by the chain-weighted GDP price index, assumed real per capita GDP growth under the intermediate assumptions is 1.6 percent, and real per beneficiary Medicare cost growth is 1.5 percent, 1.3 percent, and 2.3 percent for Parts A, B, and D, respectively.
[2]Private nonfarm business multifactor productivity is published by the Bureau of Labor Statistics and is used as the economy-wide private nonfarm business multifactor productivity to adjust certain provider payment updates.
[3]See section III.B3 for further explanation of the Part A alternative (low-cost and high-cost) assumptions. Long-range alternative projections are not prepared for Parts B and D.

Other assumptions are specific to Medicare. As with all of the assumptions underlying the financial projections, the Trustees review the Medicare-specific assumptions annually and update them based on the latest available data and analysis of trends. In addition, the assumptions and projection methodology are subject to periodic review by independent panels of expert actuaries and economists. The most recent completed review occurred with the 2010-2011 Technical Review Panel on the Medicare Trustees Report.[9]

Section IV.D describes the methodology used to derive the long-range cost growth assumptions, which are based on the "factors contributing to growth" model and are developed for the following four categories of provider services:

[9]The Panel's final report is available at http://aspe.hhs.gov/health/reports/2013/MedicareTech/TechnicalPanelReport2010-2011.pdf. The Secretary of Health and Human Services announced the reestablishment of the Technical Review Panel on the Medicare Trustees Report in the February 19, 2016 *Federal Register*.

(i) *All HI, and some SMI Part B, services that are updated annually by provider input price increases less the increase in economy-wide productivity.*

HI services are inpatient hospital, skilled nursing facility, home health, and hospice. The primary Part B services affected are outpatient hospital, home health, and dialysis. Under the Trustees' intermediate economic assumptions, the year-by-year per capita increases for these provider services start at 3.9 percent in 2041, or GDP plus 0.0 percent, declining gradually to 3.5 percent in 2091, or GDP minus 0.3 percent. [10]

(ii) *Physician services*

Payment rate updates are 0.75 percent per year for those physicians assumed to be participating in advanced alternative payment models (APMs) and 0.25 percent for those assumed to be participating in the merit-based incentive payment system (MIPS). The year-by-year per capita growth rates for physician payments are assumed to be 3.6 percent in 2041, or GDP minus 0.3 percent, declining to 2.8 percent in 2091, or GDP minus 1.0 percent.

(iii) *Certain SMI Part B services that are updated annually by the CPI increase less the increase in productivity.*

Such services include durable medical equipment,[11] care at ambulatory surgical centers, ambulance services, and medical supplies. The Trustees assume the per beneficiary year-by-year rates to be 3.1 percent in 2041, or GDP minus 0.8 percent, declining to 2.7 percent in 2091, or GDP minus 1.1 percent.

(iv) *All other Medicare services, for which payments are established based on market processes, such as prescription drugs provided through Part D and the remaining Part B services.*

These Part B outlays constitute an estimated 16 percent of total Part B expenditures in 2026 and consist mostly of payments for laboratory tests, physician-administered drugs, and small facility services. Medicare payments to Part D plans are based on a

[10]These growth rate assumptions are described relative to the per capita increase in GDP and characterized simply as GDP plus X percent.
[11]Certain durable medical equipment (DME) is subject to competitive bidding, and the price is assumed to grow by the CPI increase less the increase in productivity, the same update specified for DME not subject to bidding.

competitive-bidding process and are not affected by the productivity adjustments. Similarly, payments for the other Part B services are based on market factors.[12] The long-range per beneficiary cost growth rate for Part D and these Part B services is assumed to equal the increase in per capita national health expenditures as determined from the "factors contributing to growth" model. The corresponding year-by-year per capita growth rates for these services are 4.8 percent in 2041, or GDP plus 0.9 percent, declining to 4.3 percent by 2091, or GDP plus 0.5 percent.

After combining the rates of growth from the four long-range assumptions, the weighted average growth rate per beneficiary for Part B is 3.6 percent over the period 2041 through 2091, or GDP minus 0.3 percent, on average. When Parts A, B, and D are combined, the weighted average growth rate for Medicare is 3.7 percent, or GDP minus 0.2 percent, over this same period. Both rates are shown in table II.C1.

As in the past, the Trustees establish detailed growth rate assumptions for the initial 10 years (2017 through 2026) by individual type of service (for example, inpatient hospital care and physician services). These assumptions reflect recent trends and the impact of all provisions of the Bipartisan Budget Act of 2015, the Medicare Access and CHIP Reauthorization Act of 2015, the Affordable Care Act, the Budget Control Act, and other applicable statutory provisions. For each of Parts A, B, and D, the assumed growth rates for years 11 through 25 of the projection period (adjusted to reflect discontinuities in yearly payment policies) are set by interpolating between the rate at the end of the short-range projection period and the rate at the start of the last 50 years of the long-range period described above.

The basis for the Medicare cost growth rate assumptions, described above, has been chosen primarily to incorporate the productivity adjustments and the physician payment structure in a relatively simple, straightforward manner and with the assumption that these elements of current law will operate in all future years as specified. The Trustees use this approach in part due to the uncertainty associated with these provisions and in part due to the difficulty of modeling such consequences as access to care, health status, and utilization if these provisions of current law do not operate as

[12]For example, physician-administered Part B drugs are reimbursed at the level of the average sales price in the market plus 6 percent.

intended.[13] They have incorporated the effects of changes in payment mechanisms, delivery systems, and other aspects of health care that have been implemented recently, including modest savings from accountable care organizations. However, they have not modeled the possible effects of future changes that could arise in response to the payment limitations and the ACA-directed research activities, nor have they considered the potential effects of sustained slower payment increases on provider participation, beneficiary access to care, quality of services, and other factors.[14]

Consistent with the practice in recent reports, the Trustees asked the Office of the Actuary to develop the illustrative alternative projections. This information is presented in appendix V.C. An actuarial memorandum on the illustrative alternative is available on the CMS website.[15] For the long range, the illustrative alternative projection assumes that (i) the economy-wide productivity adjustments would be gradually phased out during 2020 to 2034 and replaced with adjustments based on estimated health-specific provider productivity gains of 0.4 percent annually, (ii) average physician payment updates would transition from 0.6 percent in 2026 to 2.2 percent for 2041 and later, (iii) the 5-percent bonuses for physicians in advanced APMs and the $500-million payments for physicians in MIPS do not expire, and (iv) the cost-reducing actions of the Independent Payment Advisory Board are eliminated. The year-by-year growth rate assumptions for HI and SMI Part B under the illustrative alternative projections are approximately 4.8 percent in 2041, or GDP plus 0.9 percent, declining to 4.3 percent by 2091, or GDP plus 0.5 percent. On average over this period, the growth rate of per beneficiary expenditures for these services is equal to the growth rate for per capita national health expenditures, as described previously for Part D and other Medicare services for which price updates are based on market processes.

For the HI high-cost assumptions, the assumed annual increase in the ratio of aggregate costs to taxable payroll (the cost rate) during the initial 25-year period is 2 percentage points greater than under the intermediate assumptions. Under the low-cost assumptions, the assumed annual rate of increase in the cost rate for the initial period

---

[13]For a detailed discussion of uncertainty, see appendix V.C.

[14]The 2010-2011 Medicare Technical Review Panel considered these issues at some length. Their final report contains an extensive discussion of alternative long-term scenarios with different possible behavioral reactions by providers and with varying implications for the financial viability of providers and the availability and quality of health care services for beneficiaries.

[15]See http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/ReportsTrustFunds/Downloads/2017TRAlternativeScenario.pdf.

is 2 percentage points less than under the intermediate assumptions. After 25 years, the Trustees assume that the 2-percentage-point differentials will decline gradually to zero in 2066, after which the growth in cost rates is the same under all three sets of assumptions. The low-cost and high-cost projections shown in this report provide an indication of how Medicare expenditures could vary in the future as a result of different economic, demographic, and health care trends.[16]

While it is possible that actual economic, demographic, and health cost-growth experience will fall within the range defined by the three alternative sets of assumptions, there can be no assurances that it will do so in light of the wide variations in these factors over past decades. In general, readers can place a greater degree of confidence in the assumptions and estimates for the earlier years than for the later years. Nonetheless, even for the earlier years, the estimates are only an indication of the expected trends and the general ranges of future Medicare experience. Also, as a result of the uncertain long-range adequacy of physician payments and payments affected by the statutory productivity adjustments, actual future Medicare expenditures could exceed the intermediate projections shown in this report, possibly by quite large amounts. Reference to key results under the illustrative alternative projection demonstrates this potential understatement.

[16]Due to the automatic financing provisions for Parts B and D, the Trustees expect that the SMI trust fund will be adequately financed in all future years and so have not conducted a long-range analysis using high-cost and low-cost assumptions.

D. FINANCIAL OUTLOOK FOR THE MEDICARE PROGRAM

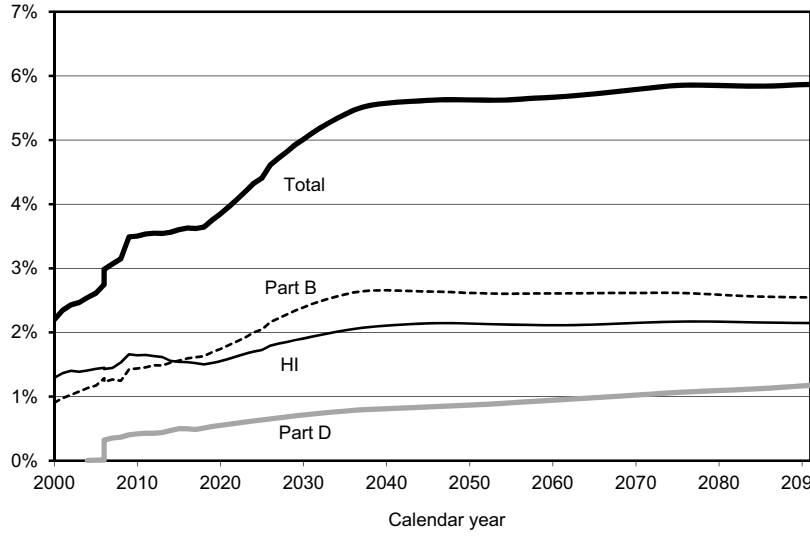
This report evaluates the financial status of the HI and SMI trust funds. For HI, the Trustees apply formal tests of financial status for both the short range and the long range; for SMI, the Trustees assess the ability of the trust fund to meet incurred costs over the period for which financing has been set.

HI and SMI are financed in very different ways. Within SMI, current law provides for the annual determination of Part B and Part D beneficiary premiums and general revenue financing to cover expected costs for the following year. In contrast, HI is subject to substantially greater variation in asset growth, since employee and employer tax rates under current law do not change or adjust to meet expenditures except through new legislation.

Despite the significant differences in benefit provisions and financing, the two components of Medicare are closely related. HI and SMI operate in an interdependent health care system. Most Medicare beneficiaries are enrolled in HI and SMI Parts B and D, and many receive services from all three. Accordingly, efforts to improve and reform either component must necessarily have repercussions for the other component. In view of the anticipated growth in Medicare expenditures, it is also important to consider the distribution among the various sources of revenues for financing Medicare and the manner in which this distribution will change over time.

This section reviews the projected total expenditures for the Medicare program, along with the primary sources of financing. Figure II.D1 shows projected costs as a percentage of GDP. Medicare expenditures represented 3.6 percent of GDP in 2016. Under current law, costs increase to 5.6 percent of GDP by 2041, largely due to the rapid growth in the number of beneficiaries, and then to 5.9 percent of GDP in 2091, with growth in health care cost per beneficiary becoming the larger factor later in the valuation period, particularly for Part D costs, which are not affected by legislated price reductions. (If the payment update constraints were phased down as in the illustrative alternative projections, then Medicare expenditures would reach an estimated 9.0 percent of GDP in 2091.)

Figure II.D1.—Medicare Expenditures as a Percentage of the Gross Domestic Product



Note: Percentages are affected by economic cycles.

Table II.D1 shows five components of Medicare expenditure growth over three valuation periods: (i) growth of overall prices as measured by the CPI; (ii) growth of Medicare prices relative to the CPI; (iii) growth in the number of beneficiaries; (iv) change in the age and gender composition of the beneficiaries; and (v) change in the volume and intensity of services. The growth of Medicare prices for Part A and for Part B is projected to be below the CPI during each of the three valuation periods, with the exception of the period 2017-2026 for Part A. The 2-percent sequester of payments to Medicare providers ends in 2025, which increases price growth for the 2017-2026 period. As discussed in section IV.D, prices for all of Part A and some of Part B are constrained by the payment updates specified by the ACA, and Part B prices are further constrained by the physician updates specified by MACRA. Part D prices are projected to grow faster than the CPI and to be more in line with the price growth assumed for the overall health sector. For all parts of Medicare, growth in the number of beneficiaries is highest over the next 10 years, as the baby boom generation continues to enter Medicare, and slows continually thereafter.

Table II.D1.—Components of Increase in Medicare Incurred Expenditures by Part

[In percent]

	Average annual percentage change						
	Prices						
Valuation period	CPI	Medicare relative to CPI	Overall Medicare	Number of beneficiaries	Beneficiary age/gender mix	Volume and intensity	Total increase
Part A:							
2017-2026	2.6%	0.1%	2.7%	2.8%	−0.2%	0.9%	6.5%
2027-2041	2.6	−0.3	2.3	1.2	0.7	1.3	5.6
2042-2091	2.6	−0.3	2.3	0.6	0.1	1.3	4.4
Part B:							
2017-2026	2.6	−0.9	1.7	2.7	0.1	3.3	8.0
2027-2041	2.6	−0.7	1.9	1.1	0.2	2.5	5.8
2042-2091	2.6	−0.6	2.0	0.6	0.0	1.6	4.3
Part D:							
2017-2026	2.6	0.3	2.9	2.9	0.1	1.5	7.7
2027-2041	2.6	0.4	3.0	1.1	0.0	1.7	6.0
2042-2091	2.6	0.4	3.0	0.6	0.0	1.4	5.1

Notes: 1. Price reflects annual updates, multifactor productivity reductions, and any other reductions required by law or regulation.
2. Volume and intensity is the residual after the other four factors shown in the table (CPI, excess Medicare price, number of beneficiaries, and beneficiary age/gender mix) are removed.
3. Totals do not necessarily equal the sums of rounded components.

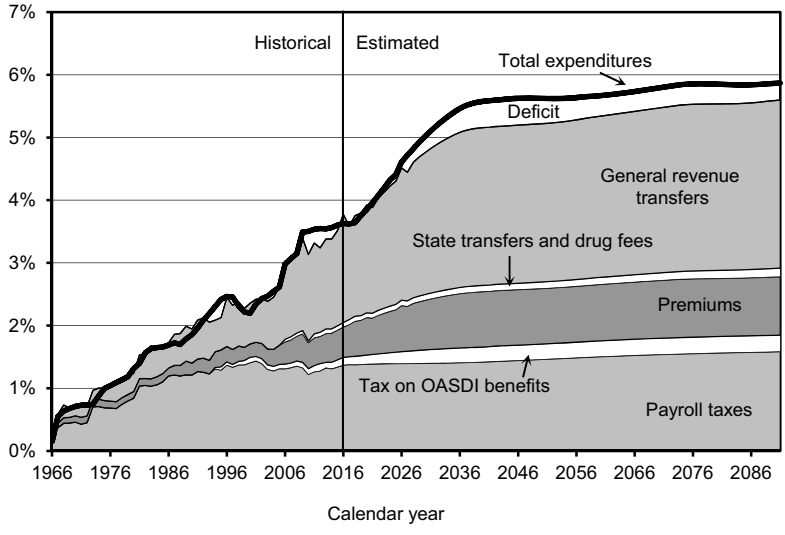
Most beneficiaries have the option to enroll in private health insurance plans that contract with Medicare to provide Part A and Part B medical services. The share of Medicare beneficiaries in such plans has risen rapidly in recent years; it reached 32.4 percent in 2016 from 12.8 percent in 2004. Plan costs for the standard benefit package can be significantly lower or higher than the corresponding cost for beneficiaries in the traditional or fee-for-service Medicare program. Prior to the ACA, private plans were generally paid a higher average amount, and they used the additional payments to reduce enrollee cost-sharing requirements, provide extra benefits, and/or reduce Part B and Part D premiums. These enhancements were valuable to enrollees but also resulted in higher Medicare costs overall and higher premiums for all Part B beneficiaries, not just those enrolled in Medicare Advantage plans. The ACA requires a phase-in from 2012 through 2017 of payments to plans that are based on benchmarks that range from 95 to 115 percent of local fee-for-service Medicare costs, with bonus amounts payable for plans meeting high quality-of-care standards.[17] As was the case last year, the Trustees project that the overall participation rate for private health plans will continue to increase—from almost 34 percent in 2017 to about 36 percent in 2023 and thereafter.

Figure II.D2 shows the past and projected amounts of Medicare revenues under current law excluding interest income, which will not

[17]Prior to the ACA, the benchmark range was generally 100 to 140 percent of fee-for-service costs.

be a significant part of program financing in the long range as trust fund assets decline. The figure compares total Medicare expenditures to Medicare non-interest income—from HI payroll taxes, HI income from the taxation of Social Security benefits, HI and SMI premiums, SMI Part D State transfers for certain Medicaid beneficiaries, fees under the ACA on manufacturers and importers of brand-name prescription drugs (allocated to Part B), and HI and SMI general revenues. For 2017, the Trustees expect total Medicare expenditures to exceed non-interest revenue, but by only a very small margin, and modest surpluses are projected to continue for 2018 through 2020. Deficits are expected to return in 2021 and to remain for the balance of the projection, as expenditures grow faster than revenue.

Figure II.D2.—Medicare Sources of Non-Interest Income and Expenditures as a Percentage of the Gross Domestic Product



Note: Percentages are affected by economic cycles.

As shown in figure II.D2, for most of the historical period, payroll tax revenues increased steadily as a percentage of GDP due to increases in the HI payroll tax rate and in the limit on taxable earnings, the latter of which lawmakers eliminated in 1994. Under the ACA, beginning in 2013 the HI trust fund receives an additional 0.9-percent tax on earnings in excess of a threshold amount.[18] The Trustees project that,

[18]The ACA also specifies that individuals with incomes greater than $200,000 per year and couples above $250,000 pay an additional Medicare contribution of 3.8 percent on some or all of their non-work income (such as investment earnings). However, the revenues from this tax are not allocated to the Medicare trust funds.

as a result of this provision, payroll taxes will grow slightly faster than GDP.[19] HI revenue from income taxes on Social Security benefits will gradually increase as a share of GDP as the share of benefits subject to such taxes increases.

The Trustees expect growth in SMI Part B and Part D premiums and general fund transfers to continue to outpace GDP growth and HI payroll tax growth in the future. This phenomenon occurs primarily because SMI revenue increases at the same rate as expenditures, whereas HI revenue does not. Accordingly, as the HI sources of revenue become increasingly inadequate to cover HI costs, SMI revenues will represent a growing share of total Medicare revenues. Beginning in 2009, as HI payroll tax receipts declined due to the recession and general revenue transfers increased, the latter income source became the largest single source of income to the Medicare program as a whole. General revenue transfers to the Part B account increased significantly in 2016, as required by the Bipartisan Budget Act of 2015 to compensate for premium revenue that was not received in 2016 due to the hold-harmless provision, which limited the Part B premium increase for a majority of beneficiaries. After decreasing from 2016 to 2017, general revenues will gradually increase as a share of Medicare financing from 2017 through 2029 and grow to about 48 percent by 2030, stabilizing thereafter. Growth in general revenue financing as a share of GDP adds significantly to the Federal budget pressures. SMI premiums will also grow in proportion to general revenue transfers, placing a growing burden on beneficiaries. For high-income enrollees, SMI premiums began to increase more rapidly in 2011 and will continue to do so as a result of ACA provisions that increase Part D premiums and freeze the income thresholds used to determine Part B and Part D income-related premiums for 2011-2019. MACRA contains further provisions that affect the income-related premium thresholds and that will result in more premium income to Part B and Part D.

The interrelationship between the Medicare program and the Federal budget is an important topic—one that will become increasingly

[19]Although the Trustees expect total worker compensation to grow at the same rate as GDP, wages and salaries would increase more slowly and fringe benefits (health insurance costs in particular) more rapidly. Thus, taxable earnings would gradually decline as a percentage of GDP. Absent any change to the tax rate scheduled under current law, HI payroll tax revenue would similarly decrease as a percentage of GDP (since fringe benefits are not subject to this tax). Over time, however, a growing proportion of workers will exceed the fixed earnings thresholds specified in the ACA ($200,000 and $250,000) and will become subject to the additional 0.9-percent HI payroll tax. The net effect of these factors is an increasing trend in payroll taxes as a percentage of GDP. See section V.C7 of the 2017 OASDI Trustees Report for more detailed information on the projection of income from taxation of Social Security benefits.

critical over time as the general revenue requirements for SMI continue to grow. Transfers from the general fund are the major source of financing for the SMI trust fund and are central to the automatic financial balance of the fund's two accounts, while representing a large and growing requirement for the Federal budget. SMI general revenues currently equal 1.5 percent of GDP and will increase to an estimated 2.7 percent in 2091 under current law. Moreover, in the absence of legislation to address the financial imbalance, interest earnings on trust fund assets and redemption of those assets will cover the difference between HI dedicated revenues and expenditures until 2029.[20] Both of these financial resources for the HI trust fund require cash transfers from the general fund of the Treasury, representing a draw on other Federal resources. In 2028, these transactions would require general fund transfers equal to 0.2 percent of GDP. Appendix F describes the interrelationship between the Federal budget and the Medicare and Social Security trust funds; it illustrates the programs' long-range financial outlook from both a trust fund perspective and a budget perspective.

Federal law requires the Board of Trustees to test whether the difference between program outlays and dedicated financing sources[21] exceeds 45 percent of Medicare outlays under current law. If this level is attained within the first 7 fiscal years of the projection, the law requires the Trustees to issue a determination of projected excess general revenue Medicare funding. The Trustees made such determinations in the 2006 through 2013 reports. For this year's report, the difference between program outlays and dedicated revenues is expected to exceed 45 percent in fiscal year 2023, and therefore the Trustees are issuing this determination. (Section V.B contains additional details on these tests.)

The ACA requires the Independent Payment Advisory Board (IPAB) to submit proposals to the President the year following a determination that the projected rate of growth in Medicare spending per beneficiary exceeds a target growth rate. Since 2013, the Chief Actuary at CMS has been required to determine the projected and target growth rates. If the Chief Actuary makes a determination that the projected Medicare per capita growth rate exceeds the per capita target growth rate in the implementation year, the Chief Actuary is required to

[20]After asset depletion in 2029, as described in section II.E, no provision exists to use general revenues or any other means to cover the HI deficit.

[21]The dedicated financing sources are HI payroll taxes, the HI share of income taxes on Social Security benefits, Part B receipts from the new fees on manufacturers and importers of brand-name prescription drugs, Part D State transfers, and beneficiary premiums. These sources are the first four layers depicted in figure II.D2.

establish a savings target for that year. As in prior years, the 2017 determination is that the target growth rate has not been exceeded. (Section V.B contains further details on the targets and projected growth rates.)

This section has summarized the total financial obligation posed by Medicare and the manner in which it is financed. However, the HI and SMI components of Medicare have separate and distinct trust funds, each with its own sources of revenues and mandated expenditures. Accordingly, it is necessary to assess the financial status of each Medicare trust fund separately. Sections II.E and II.F present such assessments for the HI trust fund and the SMI trust fund, respectively.

E. FINANCIAL STATUS OF THE HI TRUST FUND

1. 10-Year Actuarial Estimates (2017-2026)

Expenditures from the HI trust fund exceeded income each year from 2008 through 2015. In 2016, however, there was a fund surplus amounting to $5.4 billion. As a result of low spending growth for HI services and the assumed continuation of the economic recovery, the Trustees project that HI income (which includes payments from the general fund) will exceed expenditures by about $10.8 billion in 2017 and that trust fund surpluses will continue for the next 5 years. Deficits are projected to return beginning in 2023 and to persist for the remainder of the projection period. Beginning in 2023, payment of expenditures in full and on time will require redemption of trust fund assets until the trust fund's depletion in 2029.

Table II.E1 presents the projected operations of the HI trust fund under the intermediate assumptions for the next decade. At the beginning of 2017, HI assets represented 67 percent of annual expenditures. This ratio has declined from 150 percent since 2007. The Board has recommended an asset level at least equal to annual expenditures, to serve as an adequate contingency reserve in the event of adverse economic or other conditions.

The Trustees apply an explicit test of short-range financial adequacy, described in section III.B2 of this report. Based on the 10-year projection shown in table II.E1, the HI trust fund does not meet this test because estimated assets are below 100 percent of annual expenditures and are not projected to attain this level under the intermediate assumptions. This outlook indicates the need for prompt legislative action to achieve financial adequacy for the HI trust fund throughout the short-range period.

Table II.E1.—Estimated Operations of the HI Trust Fund under Intermediate Assumptions, Calendar Years 2016-2026

[Dollar amounts in billions]

Calendar year	Total income[1]	Total expenditures	Change in fund	Fund at year end	Ratio of assets to expenditures[2]
2016[3]	$290.8	$285.4	$5.4	$199.1	68%
2017	306.0	295.2	10.8	209.9	67
2018	324.0	307.3	16.7	226.6	68
2019	343.6	327.5	16.1	242.7	69
2020	364.2	351.0	13.2	255.9	69
2021	385.1	376.4	8.7	264.5	68
2022	405.3	404.1	1.2	265.8	65
2023	424.9	432.8	−8.0	257.8	61
2024	445.5	461.1	−15.7	242.1	56
2025	466.6	487.9	−21.2	220.9	50
2026	488.4	529.9	−41.5	179.4	42

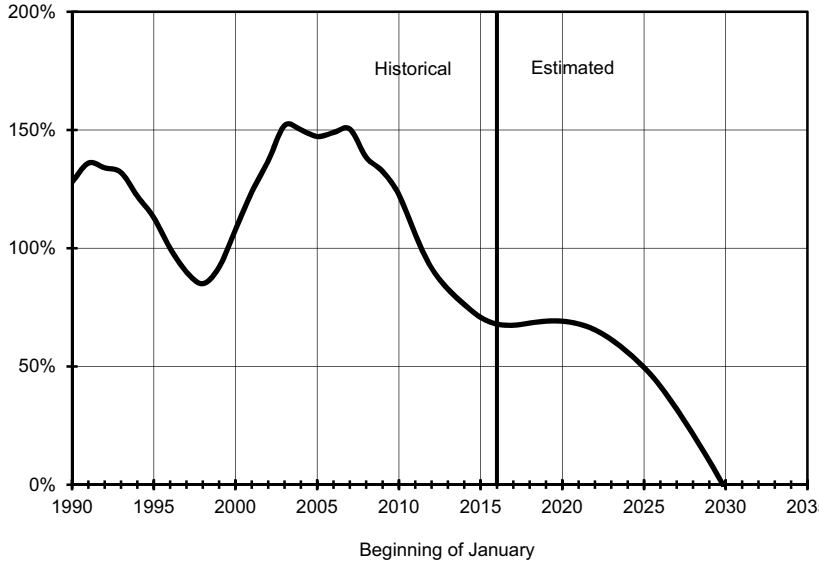
[1]Includes interest income.
[2]Ratio of assets in the fund at the beginning of the year to expenditures during the year.
[3]Figures for 2016 represent actual experience.

Note: Totals do not necessarily equal the sums of rounded components.

The short-range financial outlook for the HI trust fund has improved as compared to the projections in last year's annual report. This result is largely due to lower utilization assumptions for inpatient hospital services, which were primarily based on lower-than-expected utilization in 2016.

Under the intermediate assumptions, the assets of the HI trust fund would remain steady for a few years and then rapidly decrease as a percentage of annual expenditures throughout the rest of the short-range projection period, as illustrated in figure II.E1. After 2021 the ratio starts to decline quickly until the fund is depleted in 2029, one year later than the date projected last year. If assets were depleted, Medicare could pay health plans and providers of Part A services only to the extent allowed by ongoing tax revenues—and these revenues would be inadequate to fully cover costs. Beneficiary access to health care services would rapidly be curtailed. To date, Congress has never allowed the HI trust fund to become depleted.

Figure II.E1.—HI Trust Fund Balance at Beginning of Year as a Percentage of Annual Expenditures



There is substantial uncertainty in the economic, demographic, and health care projection factors for HI trust fund expenditures and revenues. Accordingly, the date of HI trust fund depletion could differ substantially in either direction from the 2029 intermediate estimate. As shown in greater detail in section III.B, trust fund assets would increase throughout the entire projection period under the low-cost assumptions. Under the high-cost assumptions, however, asset depletion would occur in 2023.

2. 75-Year Actuarial Estimates (2017-2091)

Each year, the Board prepares 75-year estimates of the financial and actuarial status of the HI trust fund. Although financial outcomes are inherently uncertain, particularly over periods as long as 75 years, such estimates are helpful for assessing the trust fund's long-term financial condition.

Due to the difficulty in comparing dollar values for different periods without some type of relative scale, the Trustees show income and expenditure amounts relative to the earnings in covered employment that are taxable under HI (referred to as *taxable payroll*). The ratio of HI income (including payroll taxes, income from taxation of Social Security benefits, premiums, general revenue transfers for uninsured beneficiaries, and monies from fraud and abuse control activities, but

excluding interest income) to taxable payroll is called the *income rate*, and the ratio of expenditures to taxable payroll is the *cost rate*.[22]

The standard HI payroll tax rate is scheduled to remain constant at 2.90 percent (for employees and employers, combined). In addition, starting in 2013, high-income workers pay an additional 0.9 percent of their earnings above $200,000 (for single workers) or $250,000 (for married couples filing joint income tax returns). Since these income thresholds are not indexed, over time an increasing proportion of workers and their earnings will become subject to the additional HI tax rate. (By the end of the long-range projection period, an estimated 79 percent of workers would be subject to this tax.) Thus, HI payroll tax revenues will increase steadily as a percentage of taxable payroll. HI income from taxation of Social Security benefits will also increase faster than taxable payroll because the income thresholds determining taxable benefits are not indexed for price inflation.

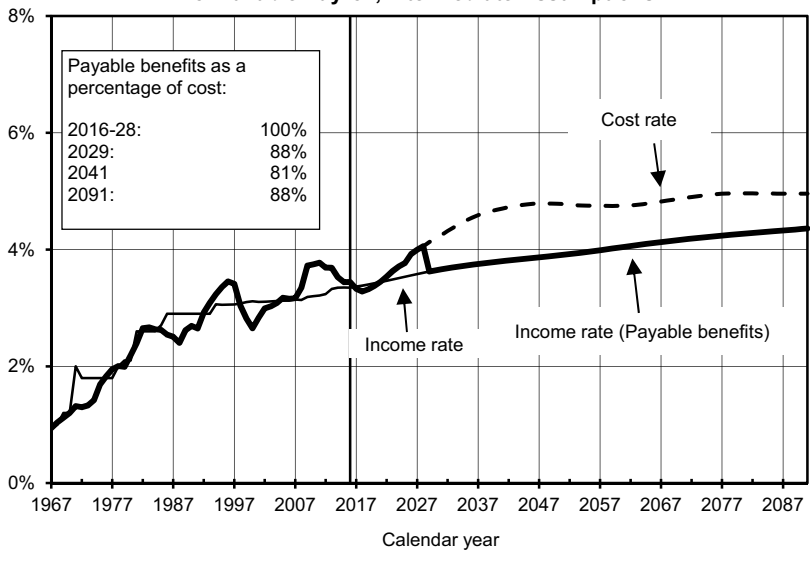
The cost rate declined for each of 2014 through 2016 and is projected to continue to decline through 2018, largely due to (i) expenditure growth that was constrained in part by low utilization and low payment updates and (ii) a rebound of taxable payroll growth from 2007-2009 recession levels. After 2018 the cost rate is projected to rise primarily due to retirements of those in the baby boom generation and partly due to a projected return to modest health services cost growth. This cost rate increase is moderated by the accumulating effect of the productivity adjustments to provider price updates, which are estimated to reduce annual HI per capita cost growth by an average of 0.8 percent through 2026 and 1.1 percent thereafter. After 25, 50, and 75 years, for example, the prices paid to HI providers under current law would be 21 percent, 40 percent, and 55 percent lower, respectively, than prices absent the productivity reductions.

Figure II.E2 shows projected income and cost rates under the intermediate assumptions. As indicated, estimated HI expenditures continued to exceed non-interest income for 2016. The income rate is then expected to exceed the cost rate through 2020, after which the cost rate will exceed the income rate for all future years. (The projected excess of costs over non-interest income from 2021 to 2029 is covered by interest earnings and the redemption of trust fund assets. Both of these sources of trust fund financing require transfers from the general fund of the Treasury.)

[22]The Trustees estimate these costs on an incurred basis.

The HI cost rate increases more rapidly than the income rate through about 2046. The projected annual deficits expressed as a share of taxable payroll increase from a negligible percentage in 2021 to a high of 0.93 percent in 2046 and then gradually decrease to 0.60 percent by the end of the projection period. The convergence of growth rates for income and costs reflects the continuing effects of the slower payment rate updates under the ACA, assumed decelerating growth in the volume and intensity of services, and the increasing portion of earnings that are subjected to the additional 0.9-percent payroll tax. The percentage of expenditures covered by non-interest income is projected to decrease from 88 percent in 2029 to 81 percent in 2041 and then to increase to about 88 percent again by the end of the projection period. (Under the illustrative alternative, the expenditures covered by non-interest income are projected to decline from 85 percent in 2029 to 72 percent in 2041 and then to decrease to about 54 percent by the end of the projection period.)

Figure II.E2.—Long-Range HI Non-Interest Income and Cost as a Percentage of Taxable Payroll, Intermediate Assumptions



It is possible to summarize the year-by-year cost rates and income rates shown in figure II.E2 into single values[23] representing, in effect, the average value over a given period. Based on the intermediate assumptions, the Trustees project an HI actuarial deficit of 0.64 percent of taxable payroll for the 75-year period under current law, which represents the difference between the summarized income

[23]See section III.B for details on the summarized income and cost rates.

rate of 3.92 percent and the corresponding cost rate of 4.56 percent. Based on this measure, the HI trust fund fails the Trustees' test for long-range financial balance, as it has for many years. (Under the illustrative alternative projections, the long-range HI deficit would be 1.76 percent of payroll.)

The following two examples illustrate the magnitude of the changes needed to eliminate the deficit. For the HI trust fund to remain solvent throughout the 75-year projection period, (i) the standard 2.90-percent payroll tax could be immediately increased by the amount of the actuarial deficit to 3.54 percent, or (ii) expenditures could be reduced immediately by 14 percent.[24,25] More realistically, the tax and/or benefit changes could occur gradually but would require ultimate adjustments that would be higher than adjustments that were done immediately. Lawmakers have many options to address the long-range financial imbalance.

The projected HI cost rates shown in this report are lower than those from the 2016 report for all years largely due to lower utilization assumptions for inpatient hospital services, which were primarily based on lower-than-expected utilization in 2016.

[24]Under the illustrative alternative projection, the corresponding immediate changes would be (i) an increase from 2.90 percent to 4.66 percent in the standard tax rate or (ii) a decrease in expenditure levels of 31 percent.

[25]Under the two examples for addressing the long-range financial imbalance, tax income would initially be substantially greater than expenditures, and trust fund assets would accumulate rapidly. Subsequently, however, tax income would be inadequate, and assets would be drawn down to cover the difference. This example illustrates that if lawmakers designed legislative solutions to eliminate only the 75-year actuarial deficit, without consideration of such year-by-year patterns, then a substantial financial imbalance could still remain at the end of the period, and the long-range sustainability of the program could still be in doubt.

F. FINANCIAL STATUS OF THE SMI TRUST FUND

SMI differs fundamentally from HI in regard to the nature of its financing and the method by which its financial status is evaluated. SMI comprises two parts, Part B and Part D, each with its own separate account within the SMI trust fund. The Trustees must determine the financial status of the SMI trust fund by evaluating the financial status of each account separately, since there is no provision in the law for transferring assets or income between the Part B and Part D accounts. The nature of the financing for both parts of SMI is similar in that the law establishes a mechanism by which income from the Part B premium and the Part D premium, and the corresponding transfers from general revenues for each part, are sufficient to cover the following year's estimated expenditures. Accordingly, each account within SMI is automatically in financial balance under current law. This result contrasts with OASDI and HI, for which financing established many years earlier may prove significantly higher or lower than subsequent actual costs. Moreover, Part B and Part D are voluntary (whereas OASDI and HI are generally compulsory), and payroll taxes are not the source of income for these programs. The financial assessment described in this section differs in important ways from that for OASDI or HI.

1. 10-Year Actuarial Estimates (2017-2026)

Table II.F1 shows the estimated operations of the Part B account, the Part D account, and the total SMI trust fund under the intermediate assumptions during calendar years 2016 through 2026. For Part B, expenditures grew at an average annual rate of 5.4 percent over the past 5 years, exceeding GDP growth by 1.7 percentage points annually, on average. Estimated Part B cost increases average about 7.8 percent for the 5-year period 2017 to 2021, faster than the GDP growth rate of 5.1 percent for the same 5-year period.

Table II.F1.—Estimated Operations of the SMI Trust Fund under Intermediate Assumptions, Calendar Years 2016-2026

[Dollar amounts in billions]

Calendar year	Total income[1]	Total expenditures	Change in fund	Fund at year end
Part B account:				
2016[2]	$313.2[3]	$293.4	$19.8	$88.0
2017	302.8	312.8	−9.9	78.0
2018	353.7	333.5	20.2	98.2
2019	372.9	363.9	9.0	107.2
2020	413.8[3]	394.0	19.8	127.0
2021	419.5[3]	427.5	−8.1	119.0
2022	469.8	462.2	7.6	126.5
2023	509.2	498.8	10.4	136.9
2024	551.3	541.1	10.1	147.1
2025	593.1	578.0	15.1	162.2
2026	673.9[3]	638.1	35.7	197.9
Part D account:				
2016[2]	106.2[3]	100.0	6.3	7.6
2017	98.7	99.2	−0.5	7.1
2018	103.4	102.8	0.6	7.7
2019	116.6	115.8	0.8	8.5
2020	127.1[3]	126.4	0.7	9.3
2021	136.8[3]	136.0	0.8	10.0
2022	147.3	146.5	0.8	10.8
2023	158.0	157.2	0.8	11.6
2024	170.0	169.2	0.9	12.4
2025	181.2	180.3	0.9	13.3
2026	195.1[3]	194.1	1.0	14.3
Total SMI:				
2016[2]	419.4[3]	393.3	26.1	95.6
2017	401.5	412.0	−10.4	85.1
2018	457.0	436.2	20.8	105.9
2019	489.5	479.7	9.8	115.7
2020	540.9[3]	520.3	20.6	136.3
2021	556.2[3]	563.6	−7.3	129.0
2022	617.1	608.7	8.4	137.3
2023	667.3	656.0	11.2	148.5
2024	721.3	710.3	11.0	159.5
2025	774.3	758.3	15.9	175.5
2026	869.0[3]	832.2	36.7	212.2

[1]Includes interest income.

[2]Figures for 2016 represent actual experience.

[3]Section 708 of the Social Security Act modifies the provisions for the payment of Social Security benefits when the regularly designated day falls on a Saturday, Sunday, or legal public holiday. Payment of those benefits normally due January 3, 2016 actually occurred on December 31, 2015. Consequently, the Part B and Part D premiums withheld from these benefits and the associated Part B general revenue contributions were added to the respective Part B (about $7.5 billion) or Part D (about $0.2 billion) account on December 31, 2015. Similarly, the payment date for those benefits normally due January 3, 2021 will be December 31, 2020, and the payment date for those benefits normally due January 3, 2027 will be December 31, 2026. Accordingly an estimated $14.1 billion will be added to the Part B account, and an estimated $0.3 billion will be added to the Part D account, on December 31, 2020; and an estimated $22.8 billion will be added to the Part B account, and an estimated $0.5 billion will be added to the Part D account, on December 31, 2026.

Due to the nature of Part B financing, Part B income growth is normally quite close to expenditure growth. The financing for 2016, including a transfer from the general fund of the Treasury provided for

by the Bipartisan Budget Act of 2015 (BBA), restored the assets held in the Part B account to the customary range by the end of 2016.[26]

The 2017 monthly Part B premium rate is $134.00, which is $12.20 higher than the 2016 monthly premium of $121.80. For determining an individual's monthly premium rate, there is a hold-harmless provision in the law that limits the dollar increase in the premium to the dollar increase in an individual's Social Security benefit. This provision applies to most beneficiaries who have their premiums deducted from their Social Security benefits, or roughly 70 percent of Part B enrollees in 2016 and 2017.[27] Because the cost-of-living adjustment (COLA) for Social Security benefits was 0.0 percent for 2016, premiums did not increase from the 2015 level of $104.90 for those beneficiaries to whom the provision applies. For 2017, the COLA was 0.3 percent, which limits the Part B premium increase for beneficiaries who are held harmless to an average of about $4.00. Because roughly 70 percent of beneficiaries have their premium increase limited, the remaining minority of beneficiaries must pay (or have paid on their behalf) a higher-than-normal premium to offset the financial effects of this premium restriction. In order to limit the premium increase for those not held harmless, the financing for 2017 was set to target a contingency reserve below the minimally adequate level. As a result, Part B assets are projected to decrease in 2017. For 2018 and later, financing rates and assets are expected to be increased to restore and maintain an adequate contingency reserve.

The projected short-range Part B expenditures shown in table II.F1 are slightly higher than the corresponding amounts in the 2016 Trustees Report. Among the reasons is slightly higher-than-expected actual spending in 2016 for outpatient hospital services and physician-administered drugs.

The Medicare prescription drug benefit began full operation in 2006. For the 10-year period 2017 to 2026, the Trustees project that income

---

[26]The traditional measure used to evaluate the status of the Part B account of the SMI trust fund is defined as the ratio of the excess of Part B assets over Part B liabilities to the next year's Part B incurred expenditures. The customary range for this ratio is 15 to 20 percent, and the minimally financially adequate level is 14 percent; the CMS Office of the Actuary developed these amounts based on private health insurance standards and past studies indicating that this asset reserve level is sufficient to protect against adverse events.

[27]About 30 percent of Part B enrollees are not eligible for the hold-harmless provision. This group consists of new enrollees during the year, enrollees who do not receive Social Security benefit checks, enrollees with high incomes who are subject to the income-related premium adjustment, and dual Medicare-Medicaid beneficiaries (whose premiums are paid by State Medicaid programs).

and expenditures for the Part D account will grow at an average annual rate of 6.9 percent, due to expected further increases in enrollment and growth in per capita drug costs. As with Part B, income and outgo would remain in balance as a result of the annual adjustment of premium and general revenue income to cover costs. The appropriation for Part D general revenues has generally been set such that amounts can be transferred to the Part D account on an as-needed basis; under this process, there is no need to maintain a contingency reserve. In September 2015, a new policy was implemented to transfer amounts from the Treasury into the account 5 business days before the benefit payments to the plans. As a result, the Part D account includes a more substantial balance at the end of most months to reflect this policy.

After 2015, the projected Part D costs shown in table II.F1 and elsewhere in this report are lower than those in the 2016 report. The difference is primarily attributable to significantly higher drug manufacturer rebates and lower utilization of hepatitis C drugs.

The primary test of financial adequacy for Parts B and D pertains to the level of the financing established for a given period (normally, through the end of the current calendar year). The financing for each part of SMI is considered satisfactory if it is sufficient to fund all services, including benefits and administrative expenses, provided through a given period. In addition, to protect against the possibility that cost increases under either part of SMI will be higher than expected, the accounts of the trust fund would normally need assets adequate to cover a reasonable degree of variation between actual and projected costs. For Part B, the Trustees estimate that the financing established through December 2017, although likely to draw down assets, will be sufficient to cover benefits and administrative costs incurred through that time period, and they estimate that assets will be adequate to cover potential variations in costs as a result of new legislation or cost growth factors that exceed expectations. The estimated financing established for Part D, together with the flexible appropriation authority for this trust fund account, would be sufficient to cover benefits and administrative costs incurred through 2017.

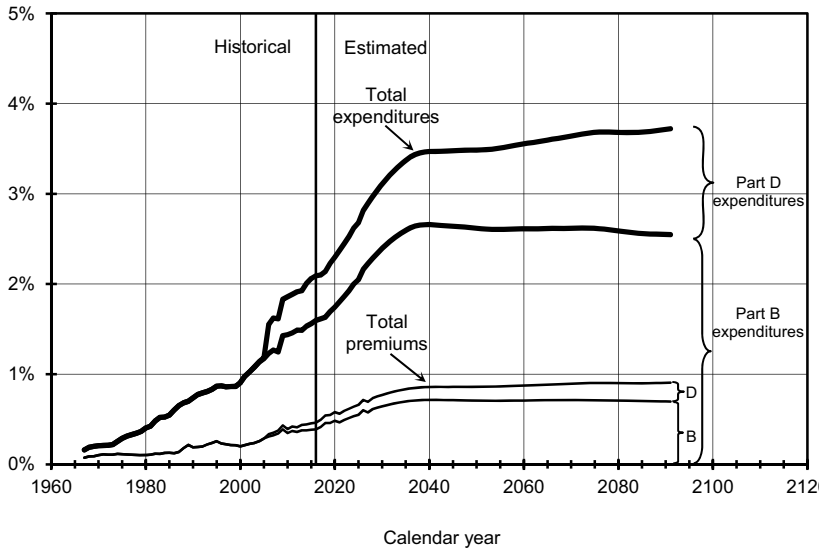
The amount of the contingency reserve needed in Part B is normally much smaller (both in absolute dollars and as a fraction of annual costs) than in HI or OASDI. A smaller reserve is adequate because the premium rate and corresponding general revenue transfers for Part B are determined annually based on estimated future costs, while the HI and OASDI payroll tax rates are fixed under law and are therefore much more difficult to adjust should circumstances change. A statutory

competitive bidding process establishes Part D revenues annually to cover estimated costs. Moreover, the flexible appropriation authority established by lawmakers for Part D allows additional general fund financing if costs are higher than anticipated.

2. 75-Year Actuarial Estimates (2017-2091)

Figure II.F1 shows past and projected total SMI expenditures and premium income as a percentage of the Gross Domestic Product (GDP). Total SMI expenditures amounted to 2.1 percent of GDP in 2016 and are projected to grow to about 3.5 percent of GDP within 25 years and to 3.7 percent by the end of the projection period. (Under the illustrative alternative, total SMI expenditures in 2091 would be 5.4 percent of GDP.)

Figure II.F1.—SMI Expenditures and Premiums as a Percentage of the Gross Domestic Product



Note: Percentages are affected by economic cycles.

3. Implications of SMI Cost Growth

Financing for the SMI trust fund is adequate because beneficiary premiums and general revenue contributions, for both Part B and Part D, are established annually to cover the expected costs for the upcoming year. Should actual costs exceed those anticipated when the financing is determined, future financing rates can include adjustments to recover the shortfall. Likewise, should actual costs be less than those anticipated, the savings would result in lower future

financing rates. As long as the future financing rates continue to cover the following year's estimated costs, both parts of the SMI trust fund will remain financially solvent.

A critical issue for the SMI program is the impact of the rapid growth of SMI costs, which places steadily increasing demands on beneficiaries and taxpayers. This section compares the past and projected growth in SMI costs with GDP growth; it also assesses the implications of the rapid growth on beneficiaries and the budget of the Federal Government.

Table II.F2 compares the growth in SMI expenditures with that of the economy as a whole. SMI costs are projected to continue to outpace growth in GDP but at a slower rate compared to the last 10 years. The relatively high growth during the period 2017-2026 is due to the continuing retirement of the baby boom generation, further economic recovery, and modest increases in cost trends. Growth rates are projected to decline during the 2027-2041 period primarily as a result of a deceleration in beneficiary population growth. For the last 50 years of the projection period, cost growth moderates further due to the continued deceleration in beneficiary population growth and lower health care cost growth rate assumptions. On a per capita basis, SMI expenditure growth has substantially exceeded GDP growth historically, but it is projected to slow and increase at approximately the same rate as GDP after 2050 as a result of several legislatively specified payment updates, including physician prices.

Table II.F2.—Average Annual Rates of Growth in SMI and the Economy

[In percent]

Calendar years	SMI			U.S. Economy			Growth differential[1]
	Beneficiary population	Per capita expenditures	Total expenditures	Total population	Per capita GDP	Total GDP	
Historical data:							
1968-1996	2.5%	11.8%	14.5%	1.0%	7.0%	8.0%	6.0%
1997-2006	1.1	10.6[2]	11.8[2]	1.0	4.5	5.5	5.9[2]
2007-2016	2.6	3.4	6.1	0.7	2.2	3.0	3.0
Intermediate estimates:							
2017-2026	2.7	5.1	8.0	0.9	3.9	4.8	3.0
2027-2041	1.1	4.7	5.9	0.6	3.7	4.4	1.4
2042-2066	0.6	3.9	4.5	0.5	3.9	4.4	0.2
2067-2091	0.6	3.8	4.5	0.5	3.9	4.3	0.1

[1]Excess of total SMI expenditure growth above total GDP growth, calculated as a multiplicative differential.
[2]Includes the addition of the prescription drug benefit to the SMI program in 2006. Excluding 2006, the average annual per capita expenditure increase is 7.9 percent, the total expenditure increase is 9.1 percent, and the growth differential is 3.4 percent.

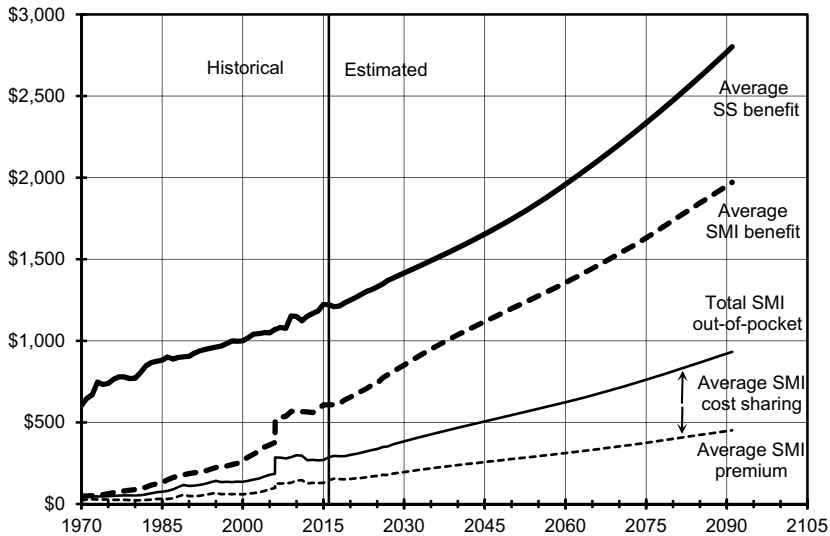
As SMI per capita benefits grow faster than average income or per capita GDP, the premiums and coinsurance amounts paid by beneficiaries represent a growing share of their total income. Figure II.F2 compares past and projected growth in average benefits

for SMI versus Social Security. The figure also shows amounts for the average SMI premium payments and average cost-sharing payments. To facilitate comparison across long time periods, all values are in constant 2016 dollars.

Over time, the average Social Security benefit tends to increase at about the rate of growth in average earnings. Health care costs generally reflect increases in the earnings of health care professionals, growth in the utilization and intensity of services, and other medical cost inflation. As indicated in figure II.F2, average SMI benefits in 1970 were only about one-twelfth the level of average Social Security benefits but had grown to more than one-third by 2005. With the introduction of the Part D prescription drug benefit in 2006, this ratio grew to almost one-half. Under the intermediate projections, SMI benefits would continue increasing at a faster rate and would represent about three-fourths of the average Social Security retired-worker benefit in 2091.

Figure II.F2.—Comparison of Average Monthly SMI Benefits, Premiums, and Cost Sharing to the Average Monthly Social Security Benefit

[Amounts in constant 2016 dollars]



Average beneficiary premiums and cost-sharing payments for SMI will increase at about the same rate as average SMI benefits.[28] Thus, a growing proportion of most beneficiaries' Social Security and other

[28]As a result, the projected ratio of average SMI out-of-pocket payments to average SMI benefits is nearly constant over time.

income would be necessary over time to pay total out-of-pocket costs for SMI, including both premiums and cost-sharing amounts. Most SMI enrollees have other income in addition to Social Security benefits. Other possible sources include earnings from employment, employer-sponsored pension benefits, and investment earnings. In addition, most draw down their accumulated assets to supplement their income in retirement. For simplicity, the comparisons in figure II.F2 apply to Social Security benefits only; a comparison of average SMI premiums and cost-sharing amounts to average total beneficiary income would likely lead to similar conclusions. For illustration, the Trustees estimate that the average Part B plus Part D premium in 2017 would equal about 13 percent of the average Social Security benefit but would increase to an estimated 16 percent in 2091. Similarly, an average cost-sharing amount in 2017 would be equivalent to about 12 percent of the Social Security benefit but would increase to about 17 percent in 2091.

The availability of SMI Part B and Part D benefits greatly reduces the costs that beneficiaries would otherwise pay for health care services. The introduction of the prescription drug benefit increased beneficiaries' costs for SMI premiums and cost sharing, but it reduced their costs for previously uncovered services by substantially more. Figure II.F2 highlights the impact of rapid cost growth for a given SMI benefit package.

The average OASI benefit amount for all retired workers is the basis for the Social Security benefits shown in figure II.F2; individual retirees may receive significantly more or less than the average, depending on their past earnings. For purposes of illustration, figure II.F2 shows the average SMI benefit value and cost-sharing liability for all beneficiaries. The value of SMI benefits to individual enrollees and their cost-sharing payments vary even more substantially than OASI benefits, depending on their income, assets, and use of covered health services in a given year. In particular, Medicaid pays Part B premiums and cost-sharing amounts for beneficiaries with very low incomes, and the Medicare low-income drug subsidy pays the corresponding Part D amounts (except for nominal copayments). Moreover, Part B beneficiaries with high incomes have been required to pay a higher income-related premium since 2007, and Part D enrollees have been required to pay an income-related premium since 2011. Further information on the nature of this comparison, and on the variations from the average results, is available in a memorandum by the CMS Office of the Actuary at http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/ReportsTrustFunds/Beneficiaryoop.html.

Another way to evaluate the implications of rapid SMI cost growth is to compare government contributions to the SMI trust fund with total Federal income taxes (personal and corporate income taxes). Table II.F3 shows SMI general revenues as a percentage of total Federal income taxes. Should such taxes in the future maintain their historical average level of the last 50 years relative to the national economy, then, based on the intermediate assumptions, SMI general revenue financing in 2091 would represent about 24.8 percent of total income taxes.

Table II.F3.—SMI General Revenues as a Percentage of Personal and Corporate Federal Income Taxes

Fiscal year	Percentage of income taxes[1]
Historical data:	
1970	0.8%
1980	2.2
1990	5.9
2000	5.4
2010	19.2
2011	17.2
2012	14.7
2013	13.8
2014	13.8
2015	13.5
2016	15.7
Intermediate estimates:	
2017	15.2
2020	15.6
2030	21.1
2040	23.6
2050	23.6
2060	24.0
2070	24.5
2080	24.7
2090	24.8
2091	24.8

[1]Includes the Part D prescription drug benefit beginning in 2006.

These examples illustrate the significant impact of SMI expenditure growth on beneficiaries, taxpayers, and the Federal budget. The projected SMI expenditure increases associated with the cost of providing health care, plus the impact of the baby boom generation reaching eligibility age, would continue to require a growing share of the economic resources available to finance these costs. This outlook reinforces the Trustees' recommendation for development and enactment of further reforms to reduce the rate of growth in SMI expenditures.

G. CONCLUSION

Total Medicare expenditures were $679 billion in 2016, and the Board projects that they will increase in most future years at a somewhat faster pace than either aggregate workers' earnings or the economy overall. The faster increase is primarily due to the number of beneficiaries increasing more rapidly than the number of workers, coupled with a continued increase in the volume and intensity of services delivered. Based on the intermediate set of assumptions under current law, expenditures as a percentage of GDP would increase from the current 3.6 percent to a projected 5.9 percent by 2091.

The HI trust fund fails to meet the Board of Trustees' short-range test of financial adequacy. In addition, as in past reports, the HI trust fund fails to meet the Trustees' long-range test of close actuarial balance.

HI experienced deficits from 2008 through 2015, but annual surpluses are expected from 2016 through 2022 before deficits return for the remainder of the 75-year projection period. The projected trust fund depletion date is 2029, one year later than estimated in last year's report. Actual HI expenditures in 2016 were slightly lower than the previous estimate. The projections are lower throughout the short-range period due to lower utilization and provider update assumptions. HI taxable payroll in 2016 was slightly higher than previously projected, and projections for HI tax income are lower after 2017 due to slower real-wage growth assumptions.

The HI actuarial deficit in this year's report is 0.64 percent of taxable payroll, down from 0.73 percent in last year's report. This result is due primarily to lower-than-estimated spending in 2016 and lower projected inpatient hospital utilization.

The financial outlook for SMI is fundamentally different than for HI due to the statutory differences in the methods of financing for these two components of Medicare. The Trustees project that both the Part B and Part D accounts of the SMI trust fund will remain in financial balance for all future years because beneficiary premiums and general revenue transfers are assumed to be set at a level to meet expected costs each year. However, SMI costs are projected to increase significantly as a share of GDP over the next 75 years, from 2.1 percent to 3.7 percent under current law. The projected Part B costs in this report are slightly higher over the short-range and long-range periods than the comparable projections in the previous report due to higher-than-expected actual spending for outpatient hospital services and physician-administered drugs in 2016 and a methodological change

resulting in higher drug spending for patients with end-stage renal disease. The Part D short-range and long-range projections are lower than in past years' reports, largely due to the increase in drug manufacturer rebates and lower utilization of hepatitis C drugs.

The financial projections shown for the Medicare program in this report reflect substantial, but very uncertain, cost savings deriving from provisions of the ACA and MACRA that lower increases in Medicare payment rates to most categories of health care providers. Without fundamental change in the current delivery system, these adjustments would probably not be viable indefinitely.

In view of these issues with provider payment rates, the Trustees note that the actual future costs for Medicare could exceed those shown in this report. Projections under an alternative scenario, as provided in appendix V.C and in a memorandum from the Office of the Actuary,[29] can help illustrate the potential magnitude of the understatement. For example, the total cost of Medicare in 2091 would be 9.0 percent of GDP under the alternative projections (versus 5.9 percent under current law), and the HI actuarial deficit would be 1.76 percent of taxable payroll (versus 0.64 percent). (The projected depletion date for the HI trust fund would be earlier in the same year.) Readers should interpret the projections shown in this report as illustrations of the very favorable impact of permanently slower growth in health care costs, if such slower growth is achievable. The illustrative alternative projections show the higher costs if not for these elements of current law.

Policy makers should determine effective solutions to the long-range HI financial imbalance. Even assuming that the provider payment rates will be adequate, the HI program does not meet either the Trustees' short-range test of financial adequacy or long-range test of close actuarial balance. HI revenues would cover only 88 percent of estimated expenditures in 2029 and 81 percent in 2050. By the end of the 75-year projection period, HI revenues could pay 88 percent of HI costs. Policy makers should also consider the likelihood that the price adjustments in current law may prove difficult to adhere to fully and may require even more changes to address the financial imbalance.

The projections in this year's report continue to demonstrate the need for timely and effective action to address Medicare's remaining financial challenges—including the projected depletion of the HI trust

[29]See http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/ReportsTrustFunds/Downloads/2017TRAlternativeScenario.pdf.

fund, this fund's long-range financial imbalance, and the rapid growth in Medicare expenditures. Furthermore, if the growth in Medicare costs is comparable to growth under the illustrative alternative projections, then these further policy reforms will have to address much larger financial challenges than those assumed under current law. The Board of Trustees believes that solutions can and must be found to ensure the financial integrity of HI in the short and long term and to reduce the rate of growth in Medicare costs through viable means. Consideration of such reforms should not be delayed. The sooner the solutions are enacted, the more flexible and gradual they can be. Moreover, the early introduction of reforms increases the time available for affected individuals and organizations—including health care providers, beneficiaries, and taxpayers—to adjust their expectations and behavior. The Board recommends that Congress and the executive branch work closely together with a sense of urgency to address these challenges.

III. ACTUARIAL ANALYSIS

A. INTRODUCTION

The Actuarial Analysis section focuses on the costs and financing of the individual HI and SMI trust fund accounts. The Trustees perform an analysis for each trust fund individually, to determine whether each account's income and expenditures are balanced as necessary to maintain solvency. (It is also valuable to consider Medicare's total expenditures and the sources and relative magnitudes of the program's revenues. Appendix V.B presents such information for Medicare overall.)

For this report, projections are shown in two different ways. The cash basis reflects the date when payment for the service was made, whereas the incurred basis reflects the date when the service was performed. The projections are first prepared on an incurred basis, and then adjustments are made to account for costs on a cash basis. Generally, trust fund operations show the actual or projected income and expenditures on a cash basis, while analysis and methodology are presented on an incurred basis.

The HI and SMI trust funds are separate and distinct, each with its own sources of financing. There are no provisions for using HI revenues to finance SMI expenditures, or vice versa, or for lending assets between the two trust funds. Moreover, the benefit provisions, financing methods, and, to a lesser degree, eligibility rules are very different between these Medicare components. In particular, both accounts of the SMI trust fund are automatically in financial balance, whereas the HI fund is not.

For these reasons, the Trustees can evaluate the financial status of the Medicare trust funds only by separately assessing the status of each fund. Sections III.B, III.C, and III.D of this report present such assessments for HI (Part A), SMI Part B, and SMI Part D, respectively. The Trustees also provide key results based on an illustrative alternative scenario in appendix V.C.

B. HI FINANCIAL STATUS

This section presents actual HI trust fund operations in 2016 and HI trust fund projections for the next 75 years. Section III.B1 discusses HI financial results for 2016, and sections III.B2 and III.B3 discuss the short-range HI projections and the long-range projections, respectively. The projections shown in sections III.B2 and III.B3 assume no changes will occur in the statutory provisions and regulations under which HI now operates.[30]

1. Financial Operations in Calendar Year 2016

On July 30, 1965, the Social Security Act established the Federal Hospital Insurance Trust Fund as a separate account in the U.S. Treasury. All the HI financial operations occur within this fund.

Table III.B1 presents a statement of the revenue and expenditures of the fund in calendar year 2016, and of its assets at the beginning and end of the calendar year.

The total assets of the trust fund amounted to $193.8 billion on December 31, 2015. During calendar year 2016, total revenue amounted to $290.8 billion, and total expenditures were $285.4 billion. Total assets thus increased by $5.4 billion during the year to $199.1 billion on December 31, 2016.

[30]The one exception is that the projections disregard payment reductions that would result from the projected depletion of the HI trust fund.

Table III.B1.—Statement of Operations of the HI Trust Fund during Calendar Year 2016

[In thousands]

Total assets of the trust fund, beginning of period	$193,758,269
Revenue:	
Payroll taxes	$253,517,712
Income from taxation of OASDI benefits	23,022,000
Interest on investments	7,697,129
Premiums collected from voluntary participants	3,281,512
Premiums collected from Medicare Advantage participants	359,667
ACA Medicare shared savings program receipts	2,182
Transfer from Railroad Retirement account	624,800
Reimbursement, transitional uninsured coverage	158,000
Reimbursement, program management general fund	781,622
CMS interfund interest receipts[1]	−4,075
Interfund interest payments to OASDI[1]	−428
Interest on reimbursements, Railroad Retirement	32,011
Other	1,980
Reimbursement, union activity	1,177
Fraud and abuse control receipts:	
Criminal fines	24,044
Civil monetary penalties	47,998
Civil penalties and damages, Department of Justice	881,166
Asset forfeitures, Department of Justice	63,230
3% administrative expense reimbursement, Department of Justice	27,252
General fund appropriation fraud and abuse, FBI	130,303
General fund transfer, Discretionary	119,925
Total revenue	$290,769,207
Expenditures:	
Net benefit payments	$280,512,329
Administrative expenses:	
Treasury administrative expenses	97,018
Salaries and expenses, SSA[2]	949,113
Salaries and expenses, CMS[3]	2,095,577
Salaries and expenses, Office of the Secretary, HHS	45,102
Medicare Payment Advisory Commission	6,585
Administration on aging funding	3,087
CMS program management–Affordable Care Act	28,360
Transfer to Patient-Centered Outcomes Research Trust Fund[4]	53,925
ACL State Health Insurance Assistance Program[5]	10,010
MACRA[6]	6,949
Fraud and abuse control expenses:	
HHS Medicare integrity program	642,872
HHS Office of Inspector General	273,432
Department of Justice	64,133
FBI	119,624
HCFAC Department of Justice Discretionary, CMS	76,170
HCFAC Office of Inspector General Discretionary, CMS	27,729
HCFAC Other HHS Discretionary, CMS	41,539
HCFAC Discretionary, CMS	337,012
Total administrative expenses	4,878,235
Total expenditures	$285,390,564
Net addition to the trust fund	5,378,643
Total assets of the trust fund, end of period	$199,136,912

[1]Reflects interest adjustments on the reallocation of administrative expenses among the Medicare trust funds, the OASDI trust funds, and the general fund of the Treasury. Estimated payments are made from the trust funds and then are reconciled, with interest, the next year when the actual costs are known. A positive figure represents a transfer to the HI trust fund from the other trust funds. A negative figure represents a transfer from the HI trust fund to the other funds.

[2]For facilities, goods, and services provided by SSA.

[3]Includes expenses of the Medicare Administrative Contractors.

[4]Reflects amount transferred from the HI trust fund to the Patient-Centered Outcomes Research trust fund, as authorized by the Patient Protection and Affordable Care Act of 2010.

[5]Reflects amount transferred from the HI trust fund to the Administration for Community Living (ACL) for administration of the State Health Insurance Assistance program, as authorized by the Consolidated Appropriations Act of 2014.
[6]Represents amounts transferred from the HI trust fund for administration of provisions of the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA).

Note: Totals do not necessarily equal the sums of rounded components.

a. Revenues

The trust fund's primary source of income consists of amounts appropriated to it, under permanent authority, on the basis of taxes paid by workers, their employers, and individuals with self-employment earnings, in work covered by HI. Included in HI are workers covered under the OASDI program, those covered under the Railroad Retirement program, and certain Federal, State, and local employees not otherwise covered under the OASDI program.

HI taxes are payable without limit on a covered individual's total wages and self-employment earnings. For calendar years prior to 1994, taxes were computed on a person's annual earnings up to a specified maximum annual amount called the *maximum tax base*. Table III.B2 presents the maximum tax bases for 1966-1993. Legislation enacted in 1993 removed the limit on taxable income beginning in calendar year 1994.

Table III.B2 also shows the HI tax rates applicable in each of calendar years 1966 and later. For 2018 and thereafter, the tax rates shown are the rates scheduled in current law. As indicated in the footnote to the table, in 2013 and later employees and self-employed individuals pay an additional HI tax of 0.9 percent on their earnings above certain thresholds.

Table III.B2.—Tax Rates and Maximum Tax Bases

Calendar years	Maximum tax base	Tax rate (Percentage of taxable earnings) Employees and employers, each	Self-employed
Past experience:			
1966	$6,600	0.35%	0.35%
1967	6,600	0.50	0.50
1968-71	7,800	0.60	0.60
1972	9,000	0.60	0.60
1973	10,800	1.00	1.00
1974	13,200	0.90	0.90
1975	14,100	0.90	0.90
1976	15,300	0.90	0.90
1977	16,500	0.90	0.90
1978	17,700	1.00	1.00
1979	22,900	1.05	1.05
1980	25,900	1.05	1.05
1981	29,700	1.30	1.30
1982	32,400	1.30	1.30
1983	35,700	1.30	1.30
1984	37,800	1.30	2.60
1985	39,600	1.35	2.70
1986	42,000	1.45	2.90
1987	43,800	1.45	2.90
1988	45,000	1.45	2.90
1989	48,000	1.45	2.90
1990	51,300	1.45	2.90
1991	125,000	1.45	2.90
1992	130,200	1.45	2.90
1993	135,000	1.45	2.90
1994-2012	no limit	1.45	2.90
2013-2017	no limit	1.45[1]	2.90[1]
Scheduled in current law:			
2018 & later	no limit	1.45[1]	2.90[1]

[1]Beginning in 2013, workers pay an additional 0.9 percent of their earnings above $200,000 (for those who file an individual tax return) or $250,000 (for those who file a joint income tax return).

Total HI payroll tax income in calendar year 2016 amounted to $253.5 billion—an increase of 5.1 percent over the amount of $241.1 billion for the preceding 12-month period. This increase in tax income resulted primarily from increases in the number of workers and their average earnings.

Up to 85 percent of an individual's or couple's OASDI benefits may be subject to Federal income taxation if their income exceeds certain thresholds. The income tax revenue attributable to the first 50 percent of OASDI benefits is allocated to the OASI and DI trust funds. The revenue associated with the amount between 50 and 85 percent of benefits is allocated to the HI trust fund. Income from the taxation of OASDI benefits amounted to $23.0 billion in calendar year 2016.

Another substantial source of trust fund income is interest credited from investments in government securities held by the fund. In calendar year 2016, the fund received $7.7 billion in such interest. A

description of the trust fund's investment procedures appears later in this section.

Section 1818 of the Social Security Act provides that certain persons not otherwise eligible for HI protection may obtain coverage by enrolling in HI and paying a monthly premium. In 2016, premiums collected from such voluntary participants (or paid on their behalf by Medicaid) amounted to about $3.3 billion.

The Railroad Retirement Act provides for a system of coordination and financial interchange between the Railroad Retirement program and the HI trust fund. This financial interchange requires a transfer that would place the HI trust fund in the same position in which it would have been if the Social Security Act had always covered railroad employment. In accordance with these provisions, a transfer of $625 million in principal and about $22 million in interest from the Railroad Retirement program's Social Security Equivalent Benefit Account to the HI trust fund balanced the two systems as of September 30, 2015. The trust fund received this transfer, together with interest to the date of transfer totaling about $10 million, in June 2016.

Legislation in 1982 added transitional entitlement for those Federal employees who retire before having had a chance to earn sufficient quarters of Medicare-qualified Federal employment. The general fund of the Treasury provides reimbursement for the costs of this coverage, including administrative expenses. In calendar year 2016, such reimbursement amounted to $158 million for estimated benefit payments for these beneficiaries.

The Health Insurance Portability and Accountability Act of 1996 established a health care fraud and abuse control account within the HI trust fund. Monies derived from the fraud and abuse control program are transferred from the general fund of the Treasury to the HI trust fund. During calendar year 2016, the trust fund received about $1.3 billion from this program.

b. Expenditures

The HI trust fund pays expenditures for HI benefit payments and administrative expenses. All HI administrative expenses incurred by the Department of Health and Human Services, the Social Security Administration, the Department of the Treasury (including the Internal Revenue Service), and the Department of Justice in administering HI are charged to the trust fund. Such administrative

duties include payment of benefits, the collection of taxes, fraud and abuse control activities, and experiments and demonstration projects designed to determine various methods of increasing efficiency and economy in providing health care services, while maintaining the quality of such services, under HI and SMI.

In addition, Congress has authorized expenditures from the trust funds for construction, rental and lease, or purchase contracts of office buildings and related facilities for use in connection with the administration of HI. Although trust fund expenditures include these costs, the statement of trust fund assets presented in this report does not carry the net worth of facilities and other fixed capital assets because the proceeds of sales of such assets revert to the General Services Administration. Since the value of fixed capital assets does not represent funds available for benefit or administrative expenditures, the Trustees do not consider it in assessing the actuarial status of the funds.

Of the $285.4 billion in total HI expenditures, $280.5 billion represented net benefits paid from the trust fund for health services.[31] Net benefit payments increased 2.6 percent in calendar year 2016 over the corresponding amount of $273.4 billion paid during the preceding calendar year. Enrollment increased by 2.3 percent, and per capita costs increased by 0.3 percent. This small increase was due to the continuing effects of implementation of certain provisions of the ACA and to a reduction in hospital admissions as more patients were being treated in outpatient settings. Further information on HI benefits by type of service is available in section IV.A.

The remaining $4.9 billion in expenditures was for net HI administrative expenses, after adjustments to the preliminary allocation of administrative costs among the Social Security and Medicare trust funds and the general fund of the Treasury. This amount included $1.6 billion for the health care fraud and abuse control program.

c. Actual experience versus prior estimates

Table III.B3 compares the actual experience in calendar year 2016 with the estimates presented in the 2015 and 2016 annual reports. A number of factors can contribute to differences between estimates and subsequent actual experience. In particular, actual values for key

[31]Net benefits equal the total gross amounts initially paid from the trust fund during the year, less recoveries of overpayments identified through fraud and abuse control activities.

economic and other variables can differ from assumed levels, and legislative and regulatory changes may occur after a report's preparation. The comparison in table III.B3 indicates that actual HI payroll tax income in 2016 was slightly higher than estimated in the 2016 report. This was the case because wages and adjustments for prior years were higher than estimated. The 2016 actual amount was slightly lower than estimated in the 2015 report mostly because of lower growth in average wages. Actual HI benefit payments in calendar year 2016 were slightly lower than projected in the 2016 and 2015 reports largely due to lower utilization of all types of services than previously estimated.

Table III.B3.—Comparison of Actual and Estimated Operations of the HI Trust Fund, Calendar Year 2016

[Dollar amounts in millions]

		Comparison of actual experience with estimates for calendar year 2016 published in—			
		2016 report		2015 report	
Item	Actual amount	Estimated amount[1]	Actual as a percentage of estimate	Estimated amount[1]	Actual as a percentage of estimate
Payroll taxes	$253,518	$250,942	101%	$256,208	99%
Benefit payments[2]	280,512	282,244	99	283,876	99

[1]Under the intermediate assumptions.

[2]Benefit payments include additional premiums for Medicare Advantage plans that are deducted from beneficiaries' Social Security benefits, costs of Quality Improvement Organizations, and health information technology payments.

d. Assets

The Department of the Treasury invests, on a daily basis, the portion of the trust fund not needed to meet current expenditures for benefits and administration in interest-bearing obligations of the U.S. Government. The Social Security Act authorizes the issuance of special public-debt obligations for purchase exclusively by the trust fund. The law requires that these special public-debt obligations bear interest at a rate based on the average market yield (computed on the basis of market quotations as of the end of the calendar month immediately preceding the date of such issue) for all marketable interest-bearing obligations of the United States forming a part of the public debt that are not due or callable until after 4 years from the end of that month. Currently, all invested assets of the HI trust fund are in the form of such special-issue securities.[32] Table V.H9, presented in appendix H, shows the assets of the HI trust fund at the end of fiscal years 2015 and 2016.

[32]The Department of the Treasury may also make investments in obligations guaranteed as to both principal and interest by the United States, including certain federally sponsored agency obligations.

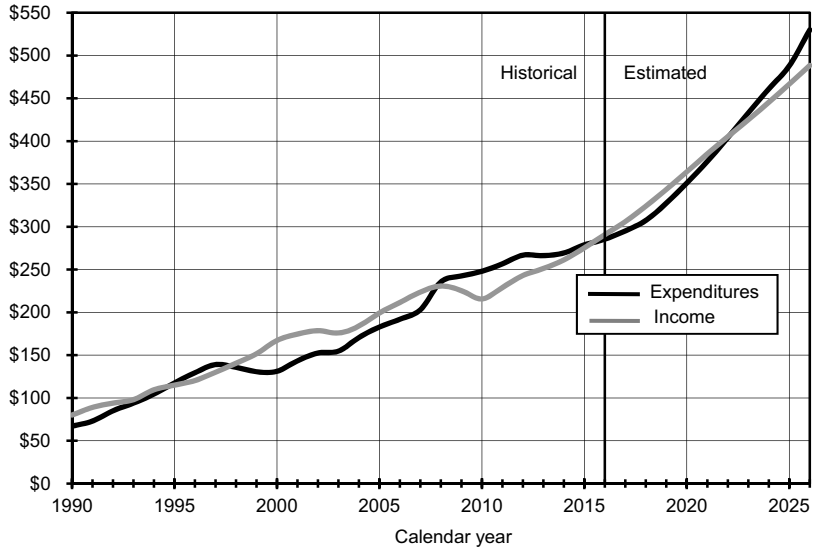
2. 10-Year Actuarial Estimates (2017-2026)

This section provides detailed information concerning the short-range financial status of the trust fund, including projected annual income, outgo, differences between income and outgo, and trust fund balances. Also discussed is the Trustees' test of short-range financial adequacy.

To illustrate the sensitivity of future costs to different economic and demographic factors and to portray a reasonable range of possible future trends, the Trustees show estimates under three alternative sets of economic and demographic assumptions—intermediate, low-cost, and high-cost assumptions. Due to the uncertainty inherent in such projections, however, the actual operations of the HI trust fund in the future could differ significantly from these estimates.

Figure III.B1 shows past and projected income and expenditures for the HI trust fund under the Trustees' intermediate assumptions. Following the Balanced Budget Act of 1997, the fund experienced annual surpluses in the range of $21 billion to $36 billion through 2003. This difference decreased to between $13 billion and $16 billion in 2004 and 2005, but then reached about $20 billion in 2006 and 2007—in large part as a result of a misallocation of certain hospice benefit costs to the Part B trust fund account. CMS corrected this accounting error in 2008. Beginning in 2008, expenditures exceeded total income, and this situation continued through 2015. In 2016, the fund once again experienced a surplus. Small annual surpluses are expected from 2017 through 2022, and annual deficits are expected to return in 2023 and to continue throughout the remainder of the projection period.

Figure III.B1.—HI Expenditures and Income
[In billions]



The impact of the December 2007 through June 2009 recession on HI payroll tax income is apparent in figure III.B1. In 2009 and 2010, payroll taxes decreased substantially as a result of higher unemployment and slow growth in wages along with collection lags; these factors contributed to the $32.3-billion trust fund deficit in 2010. For 2011 through 2015, revenues rebounded somewhat but not enough to reach the level of expenditures, which continued to grow due to increased enrollment and the regular updating of the payment rates. Together these factors resulted in a decline in trust fund deficits from $27.7 billion in 2011 to $3.5 billion in 2015. In 2016, a lower level of growth in expenditures combined with higher growth in payroll taxes led to a surplus of $5.4 billion in the trust fund.

The provisions of the ACA and other recent legislation, and an assumed strengthening economic recovery, result in small trust fund surpluses and deficits in the short-range period. A downward adjustment to price updates for all HI providers by the growth in economy-wide productivity will slow expenditure growth rates by 0.3 to 0.8 percentage point from 2016 through 2022. The significant reductions in Medicare Advantage payment benchmarks under the ACA have reduced the per person level of expenditures, and the additional 0.9-percent tax rate for high-income workers in 2013 and later will increase HI payroll tax revenues.

HI expenditures are further affected by the sequestration of non-salary Medicare expenditures. The sequestration reduces benefit payments by 2 percent from April 1, 2013 through March 31, 2025 and by 4 percent from April 1, 2025 through September 30, 2025. Due to sequestration, non-salary administrative expenses are reduced by an estimated 5 percent from March 1, 2013 through September 30, 2025. Due to these various statutory and economic factors, trust fund surpluses would occur from 2017 through 2022. After 2022, annual deficits would return.

As figure III.B1 illustrates, estimated HI income increases at a faster rate during 2011-2018 than projected HI expenditures, in contrast to the situation that has prevailed during most of the program's history. The projected recovery from the economic recession (which ended in 2009) accelerates income growth during this period. The additional 0.9-percent HI payroll tax rate, which began in 2013, also accelerates growth, since, over time, a growing proportion of workers will exceed the fixed earnings thresholds specified in the ACA ($200,000 for single taxpayers and $250,000 for married couples) and will become subject to this additional tax. At the same time, the other ACA provisions mentioned previously will slow expenditure growth significantly.

Table III.B4 shows the expected operations of the HI trust fund during calendar years 2017 to 2026 based on the intermediate set of assumptions, together with the past experience. Section IV.A of this report presents the detailed assumptions underlying the intermediate projections.

Table III.B4.—Operations of the HI Trust Fund during Calendar Years 1970-2026

[In billions]

	Income								Expenditures			Trust fund	
Calendar year	Payroll taxes	Income from taxation of benefits	Railroad Retirement account transfers	Reimburse-ment for uninsured persons	Premiums from voluntary enrollees	Payments for military wage credits	Interest and other[1,2]	Total	Benefit payments[2,3]	Adminis-trative expenses[4]	Total	Net change	Fund at end of year
Historical data:													
1970	$4.9	—	$0.1	$0.9	—	$0.0	$0.2	$6.0	$5.1	$0.2	$5.3	$0.7	$3.2
1975	11.5	—	0.1	0.6	$0.0	0.0	0.7	13.0	11.3	0.3	11.6	1.4	10.5
1980	23.8	—	0.2	0.7	0.0	0.1	1.1	26.1	25.1	0.5	25.6	0.5	13.7
1985	47.6	—	0.4	0.8	0.0	−0.7[5]	3.4	51.4	47.6	0.8	48.4	4.8[6]	20.5
1990	72.0	—	0.4	0.4	0.1	−1.0[7]	8.5	80.4	66.2	0.8	67.0	13.4	98.9
1995	98.4	$3.9	0.4	0.5	1.0	0.1	10.8	115.0	116.4	1.2	117.6	−2.6	130.3
2000	144.4	8.8	0.5	0.5	1.4	0.0	11.7	167.2	128.5[8]	2.6	131.1	36.1	177.5
2005	171.4	8.8	0.4	0.3	2.4	0.0	16.1	199.4	180.0	2.9	182.9	16.4	285.8
2010	182.0	13.8	0.5	−0.1	3.3	0.0	16.1	215.6	244.5	3.5	247.9	−32.3	271.9
2011	195.6	15.1	0.5	0.3	3.3	0.0	14.2	228.9	252.9	3.8	256.7	−27.7	244.2
2012	205.7	18.6	0.5	0.3	3.4	0.0	14.5	243.0	262.9	3.9	266.8	−23.8	220.4
2013	220.8	14.3	0.6	0.2	3.4	0.0	11.8	251.1	261.9	4.3	266.2	−15.0	205.4
2014	227.4	18.1	0.6	0.2	3.3	0.0	11.7	261.2	264.9	4.5	269.3	−8.1	197.3
2015	241.1	20.2	0.6	0.2	3.2	0.0	10.1	275.4	273.4	5.5	278.9	−3.5	193.8
2016	253.5	23.0	0.7	0.2	3.3	0.0	10.1	290.8	280.5	4.9	285.4	5.4	199.1
Intermediate estimates:													
2017	267.2	24.5	0.6	0.1	3.6	0.0	9.9	306.0	290.1	5.1	295.2	10.8	209.9
2018	281.7	27.1	0.6	0.1	3.7	0.0	10.7	324.0	301.8	5.5	307.3	16.7	226.6
2019	297.5	29.9	0.6	0.1	3.9	0.0	11.6	343.6	321.6	5.9	327.5	16.1	242.7
2020	314.0	32.9	0.7	0.1	4.2	0.0	12.4	364.2	344.7	6.3	351.0	13.2	255.9
2021	330.5	36.2	0.7	0.1	4.4	0.0	13.1	385.1	369.6	6.8	376.4	8.7	264.5
2022	346.7	39.7	0.7	0.1	4.7	0.0	13.4	405.3	396.9	7.2	404.1	1.2	265.8
2023	362.3	43.3	0.7	0.1	5.0	0.0	13.4	424.9	425.2	7.6	432.8	−8.0	257.8
2024	378.8	47.3	0.7	0.1	5.3	0.0	13.3	445.5	453.0	8.1	461.1	−15.7	242.1
2025	395.5	51.5	0.8	0.1	5.6	0.0	13.2	466.6	479.2	8.7	487.9	−21.2	220.9
2026	413.2	56.2	0.8	0.1	6.0	0.0	12.2	488.4	520.3	9.6	529.9	−41.5	179.4

[1]Other income includes recoveries of amounts reimbursed from the trust fund that are not obligations of the trust fund, receipts from the fraud and abuse control program, and a small amount of miscellaneous income. These receipts amount to $2.5-$4.9 billion each year for the 10-year projection period. In 2008, other income includes an adjustment of −$0.9 billion for interest earned as a result of Part A hospice costs that were misallocated to the Part B trust fund account.
[2]Values after 2005 include additional premiums for Medicare Advantage plans that are deducted from beneficiaries' Social Security benefits. These additional premiums are beneficiary obligations and occur when a beneficiary chooses an MA plan whose monthly plan payment exceeds the benchmark amount. Beneficiaries subject to such premiums may choose to either reimburse the plans directly or have the premiums deducted from their Social Security benefits. The premiums deducted from the Social Security benefits are transferred to the HI and SMI trust funds and then transferred from the trust funds to the plans.
[3]Includes costs of Peer Review Organizations from 1983 through 2001 (beginning with the implementation of the prospective payment system on October 1, 1983) and costs of Quality Improvement Organizations beginning in 2002.
[4]Includes costs of experiments and demonstration projects. Beginning in 1997, includes fraud and abuse control expenses, as provided for by Public Law 104-191.
[5]Includes the lump-sum general revenue adjustment of −$0.8 billion, as provided for by section 151 of Public Law 98-21.
[6]Includes repayment of loan principal, from the OASI trust fund, of $1.8 billion.
[7]Includes the lump-sum general revenue adjustment of −$1.1 billion, as provided for by section 151 of Public Law 98-21.
[8]For 1998 to 2003, includes monies transferred to the SMI trust fund for home health agency costs, as provided for by Public Law 105-33.

Note: Totals do not necessarily equal the sums of rounded components.

The increases in estimated income shown in table III.B4 primarily reflect increases in payroll tax income to the trust fund since such taxes are the main source of HI financing. As noted, payroll tax revenues increase in 2013 and later as a result of the additional 0.9-percent tax rate on earnings for high-income workers. For all other workers, while the payroll tax rate will remain constant under current law, covered earnings would increase every year under the intermediate assumptions due to projected increases in both the number of HI workers covered and the average earnings of these workers.

The Trustees project that over the next 10 years most of the smaller sources of financing for the HI trust fund will increase as well. More detailed descriptions of these sources of income were discussed earlier in this section.

Interest earnings have been a significant source of income to the trust fund for many years, surpassed only by payroll taxes and, recently, income from the taxation of OASDI benefits. As the trust fund balance begins to increase again in the next several years, interest earnings would follow the same pattern.

The Trustees have recommended maintenance of HI trust fund assets at a level of at least 100 percent of annual expenditures throughout the projection period. Such a level would provide a cushion of several years in the event that income falls short of expenditures, thereby allowing time for policy makers to implement legislative corrections. The trust fund balance has been below one year's expenditures in every year since 2012 and is not projected to reach that level under the intermediate assumptions.

The Trustees have also prepared projections using two alternative sets of assumptions. Table III.B5 summarizes the estimated operations under all three alternatives. Section IV.A presents in substantial detail the assumptions underlying the intermediate assumptions, as well as the assumptions used in preparing estimates under the low-cost and high-cost alternatives.

Table III.B5.—Estimated Operations of the HI Trust Fund during Calendar Years 2016-2026, under Alternative Sets of Assumptions

[Dollar amounts in billions]

Calendar year	Total income	Total expenditures	Net increase in fund	Fund at end of year	Ratio of assets to expenditures[1] (percent)	Expenditures as a percentage of taxable payroll
Intermediate:						
2016[2]	$290.8	$285.4	$5.4	$199.1	68%	3.38%
2017	306.0	295.2	10.8	209.9	67	3.33
2018	324.0	307.3	16.7	226.6	68	3.28
2019	343.6	327.5	16.1	242.7	69	3.32
2020	364.2	351.0	13.2	255.9	69	3.38
2021	385.1	376.4	8.7	264.5	68	3.45
2022	405.3	404.1	1.2	265.8	65	3.54
2023	424.9	432.8	−8.0	257.8	61	3.63
2024	445.5	461.1	−15.7	242.1	56	3.71
2025	466.6	487.9	−21.2	220.9	50	3.77
2026	488.4	529.9	−41.5	179.4	42	3.92
Low-cost:						
2016[2]	290.8	285.4	5.4	199.1	68	3.35
2017	308.5	288.2	20.3	219.5	69	3.21
2018	335.0	296.6	38.5	258.0	74	3.06
2019	364.3	315.8	48.5	306.5	82	3.03
2020	394.0	336.8	57.2	363.7	91	3.02
2021	422.8	357.8	65.0	428.7	102	3.03
2022	452.4	380.7	71.7	500.4	113	3.05
2023	484.0	404.9	79.1	579.4	124	3.07
2024	518.7	428.6	90.1	669.5	135	3.07
2025	556.0	450.6	105.5	775.0	149	3.06
2026	596.2	486.1	110.0	885.0	159	3.12
High-cost:						
2016[2]	290.8	285.4	5.4	199.1	68	3.40
2017	303.2	301.2	2.1	201.2	66	3.44
2018	308.6	313.3	−4.7	196.5	64	3.53
2019	317.6	331.5	−13.9	182.6	59	3.64
2020	331.7	357.2	−25.5	157.2	51	3.77
2021	345.5	386.5	−41.0	116.2	41	3.92
2022	359.0	419.1	−60.1	56.1	28	4.10
2023[3]	372.5	453.8	−81.2	−25.2	12	4.29
2024[3]	386.3	488.3	−102.0	−127.2	−5	4.46
2025[3]	397.0	521.1	−124.0	−251.2	−24	4.62
2026[3]	406.9	570.1	−163.1	−414.4	−44	4.90

[1]Ratio of assets in the fund at the beginning of the year to expenditures during the year.
[2]Figures for 2016 represent actual experience.
[3]Estimates for 2023 and later are hypothetical, since the HI trust fund would be depleted in those years.

Note: Totals do not necessarily equal the sums of rounded components.

These alternatives provide two possible Part A scenarios but represent a narrow range of possible outcomes for total expenditures. Given the considerable variation in future demographic, economic, and healthcare-usage factors, actual Part A expenditure experience could easily fall outside of this range. The low- and high-cost scenarios in this year's report once again result in a narrower dollar expenditure range than in reports before 2014, due to a change in the alternative CPI

assumptions.[33] The taxable payroll assumptions for the alternative scenarios are also affected by the assumption change. Therefore, spending as a percentage of taxable payroll provides better insight into the variability of spending than the nominal dollar amounts, as shown in table III.B5.

The Board of Trustees has established an explicit test of short-range financial adequacy. The requirements of this test are as follows: (i) if the HI trust fund ratio is at least 100 percent at the beginning of the projection period, then it must remain at or above 100 percent throughout the 10-year projection period; (ii) alternatively, if the fund ratio is initially less than 100 percent, it must reach a level of at least 100 percent within 5 years (with no depletion of the trust fund at any time during this period) and then remain at or above 100 percent throughout the rest of the 10-year period. The Trustees apply this test based on the intermediate projections.

The HI trust fund does not meet this short-range test. Failure of the trust fund to meet this test is an indication that HI solvency over the next 10 years is in question and that action is necessary to improve the short-range financial adequacy of the fund. While the short-range test is stringent, its purpose is to ensure that health care benefits continue to be available without interruption to the millions of aged and disabled Americans who rely on such coverage. Table III.B6 shows the ratios of assets in the HI trust fund at the beginning of a calendar year to total expenditures during that year. As table III.B6 shows, the Trustees project that the trust fund ratio, which was below the 100-percent level at the beginning of 2017, will increase slightly and then decrease through 2026. Accordingly, the financing for HI is not considered adequate in the short-range projection period (2017-2026).

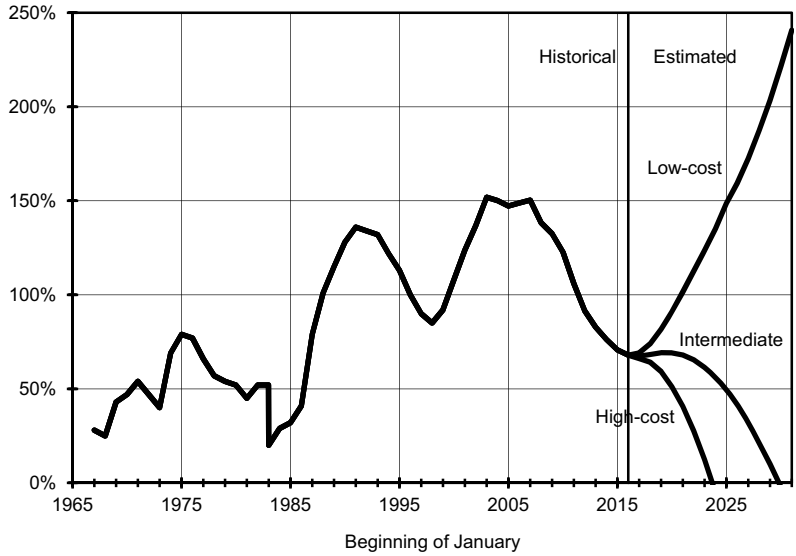
[33]Starting with the 2014 report, the Trustees' alternative CPI assumptions are reversed compared with those in previous reports, so that the high-cost assumptions are now the low-cost assumptions, and vice versa. Inflation rates are now ordered across alternatives according to their effect on the OASDI actuarial balance. This change resulted in a narrow range of impacts.

Table III.B6.—Ratio of Assets at the Beginning of the Year to Expenditures during the Year for the HI Trust Fund

Calendar year	Ratio
Historical data:	
1967	28%
1970	47
1975	79
1980	52
1985	32
1990	128
1995	113
2000	108
2005	147
2010	123
2011	106
2012	92
2013	83
2014	76
2015	71
2016	68
Intermediate Estimates:	
2017	67
2018	68
2019	69
2020	69
2021	68
2022	65
2023	61
2024	56
2025	50
2026	42

Figure III.B2 shows the historical trust fund ratios and the projected ratios under the three sets of assumptions. It also shows the declining level of assets (as a percentage of expenditures) through the beginning of 2017 under all three sets of assumptions, reflecting the current financial imbalance as exacerbated by the lingering effects of the economic recession. The fund ratio would rebound slightly through 2020 but then would continue declining under the intermediate assumptions. Under the high-cost assumptions, the fund ratio would continue to decline after 2017. Only under conditions of robust economic growth and extremely low health care cost increases, as assumed in the low-cost alternative, would HI assets grow significantly relative to expenditures under current law.

Figure III.B2.—HI Trust Fund Balance at the Beginning of the Year as a Percentage of Annual Expenditures



The HI trust fund is projected to be depleted in 2029 under the intermediate assumptions. Under the low-cost assumptions, trust fund assets are projected to increase throughout the entire projection period, while asset depletion would occur in 2023 under the high-cost assumptions.

3. Long-Range Estimates

This section examines the long-range actuarial status of the trust fund under the three alternative sets of economic and demographic assumptions, while section IV.A summarizes the assumptions used in preparing projections.

The Trustees measure the long-range actuarial status of the HI trust fund by comparing, on a year-by-year basis, the non-interest income (from payroll taxes, taxation of OASDI benefits, premiums, general revenue transfers for uninsured persons, and monies derived from the fraud and abuse control program) with the corresponding incurred costs, expressed as percentages of taxable payroll.[34] These percentages are referred to as *income rates* and *cost rates*, respectively.

[34]Taxable payroll is the total amount of wages, salaries, tips, self-employment income, and other earnings subject to the HI payroll tax.

Table III.B7 shows historical and projected HI costs and income under the intermediate assumptions, expressed as percentages of taxable payroll. The ratio of expenditures to taxable payroll has generally increased over time; it rose from 1.10 percent in 1967 to 3.46 percent in 1996, an increase that reflected rapid growth in HI expenditures, which more than offset growth in average earnings per worker, and increases in (and eventual elimination of) the maximum taxable wage base for HI. Cost rates declined significantly between 1996 and 2000 to 2.65 percent due to favorable economic performance, the impact of the Balanced Budget Act of 1997, and efforts to curb fraud and abuse in the Medicare program. The cost rate increased to 3.17 percent by 2005 as a result of legislation and, after remaining about level through 2007, increased rapidly to 3.73 percent in 2009, reflecting the impact of the recession, which lowered taxable payroll. The resulting deficit in 2009 as a percentage of taxable payroll was the largest since the program began (0.54 percent). Cost rates then increased slightly in 2010 and 2011 due to the lower taxable payroll, which was not offset by lower spending. In 2012, the cost rate decreased to 3.69 percent due to a lower increase in spending, and in 2013 it decreased to 3.68 percent. Taxable payroll increased by about 5 percent in 2014, whereas spending remained at approximately the 2013 level, leading to a further decrease in the cost rate to 3.51 percent. In 2015, taxable payroll increased by about 5 percent while spending grew at a slower 3 percent, resulting in a decrease in the cost rate to 3.42 percent. Similarly, in 2016, taxable payroll increased by about 4 percent while spending grew at 3 percent, resulting in another decrease in the cost rate to 3.38 percent.

Table III.B7.—HI Cost and Income Rates[1]

Calendar year	Cost rates	Income rates	Difference[2]
Historical data:			
1967	1.10%	1.09%	−0.01%
1970	1.35	1.41	+0.07
1975	1.79	1.90	+0.11
1980	2.27	2.16	−0.11
1985	2.70	2.75	+0.04
1990	2.72	2.92	+0.21
1995	3.36	3.05	−0.30
2000	2.65	3.11	+0.46
2005	3.17	3.12	−0.06
2010	3.75	3.20	−0.55
2011	3.75	3.21	−0.54
2012	3.69	3.24	−0.45
2013	3.68	3.33	−0.36
2014	3.51	3.34	−0.17
2015	3.42	3.35	−0.08
2016	3.38	3.35	−0.03
Intermediate estimates:			
2017	3.33	3.37	0.04
2018	3.28	3.38	0.10
2019	3.32	3.40	0.08
2020	3.38	3.42	0.04
2021	3.45	3.44	−0.01
2022	3.54	3.46	−0.07
2023	3.63	3.49	−0.15
2024	3.71	3.51	−0.20
2025	3.77	3.53	−0.23
2026	3.92	3.56	−0.36
2030	4.18	3.64	−0.54
2035	4.50	3.73	−0.77
2040	4.68	3.79	−0.89
2045	4.78	3.84	−0.93
2050	4.79	3.90	−0.89
2055	4.75	3.96	−0.79
2060	4.75	4.03	−0.72
2065	4.79	4.10	−0.69
2070	4.87	4.16	−0.71
2075	4.94	4.22	−0.72
2080	4.97	4.27	−0.70
2085	4.96	4.31	−0.65
2090	4.96	4.35	−0.61
2091	4.96	4.36	−0.60

[1]Based on the Trustees' intermediate assumptions, and expressed as a percentage of taxable payroll. Taxable payroll includes statutory wage credits for military service for 1957-2001.
[2]Difference between the income rates and cost rates. Negative values represent deficits.

The Trustees expect the continued recovery from the 2007-2009 recession and recently enacted legislation, including the ACA, to generate small surpluses from 2017 through 2020. Then the impact of demographic shifts—notably, the aging of the baby boom population—causes annual deficits to return and increase rapidly through about 2045. After 2045, the income rates are still insufficient, but the size of the projected deficits decreases throughout the period. Projected HI expenditures are 4.79 and 4.96 percent of taxable payroll in 2050 and 2091, respectively. (Under the illustrative alternative projections, the HI cost rates for 2050 and 2091 would equal 5.75 and 8.20 percent, respectively.)

Figure III.B3 shows the year-by-year costs as a percentage of taxable payroll for each of the three sets of assumptions. It also shows the income rates, but only for the intermediate assumptions in order to simplify the presentation.

Figure III.B3.—Estimated HI Cost and Income Rates as a Percentage of Taxable Payroll

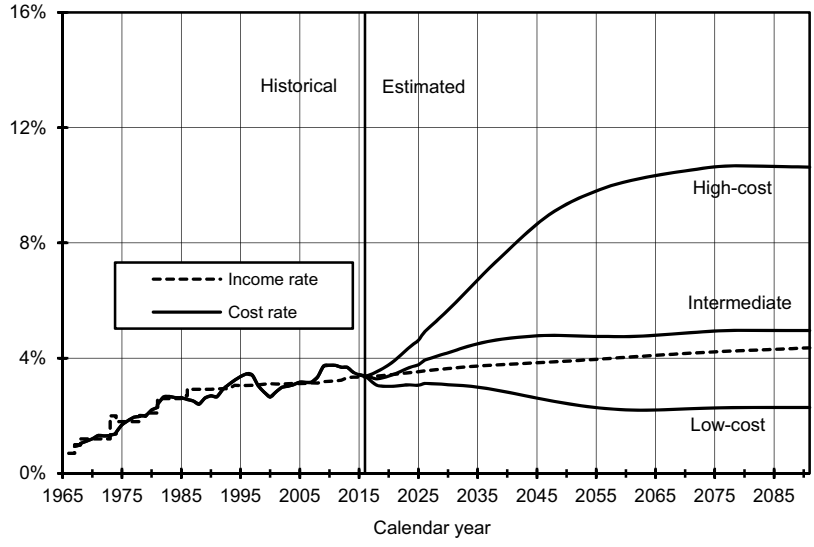


Figure III.B3 shows the remaining projected financial imbalance, based on the intermediate assumptions. The Trustees project that cost rates will continue to exceed income rates in all years during 2021-2091. By the end of the 75-year period, the difference between income rates and cost rates would be about 0.6 percent of taxable payroll. Throughout the period, cost rate growth is constrained by the productivity reductions in provider payments, and income rates continue to increase as a larger share of earnings becomes subject to the additional 0.9-percent payroll tax and a larger share of Social Security benefits becomes subject to income tax that is credited to the HI trust fund.

Under the more favorable economic and demographic conditions assumed in the low-cost assumptions, HI costs would be lower than scheduled income during 2017-2091, and surpluses would steadily grow throughout the entire 75-year projection period. This very favorable result is due in large part to HI expenditure growth rates that would average only about 5 percent per year, reflecting the

combined effects of slower growth in utilization and intensity of services, and slower improvement in beneficiary life expectancies.

The high-cost projections illustrate the large financial imbalance that could occur if future economic conditions resemble those of the 1973-95 period, if HI expenditure growth accelerates toward pre-1997 levels, and if fertility rates decline.[35]

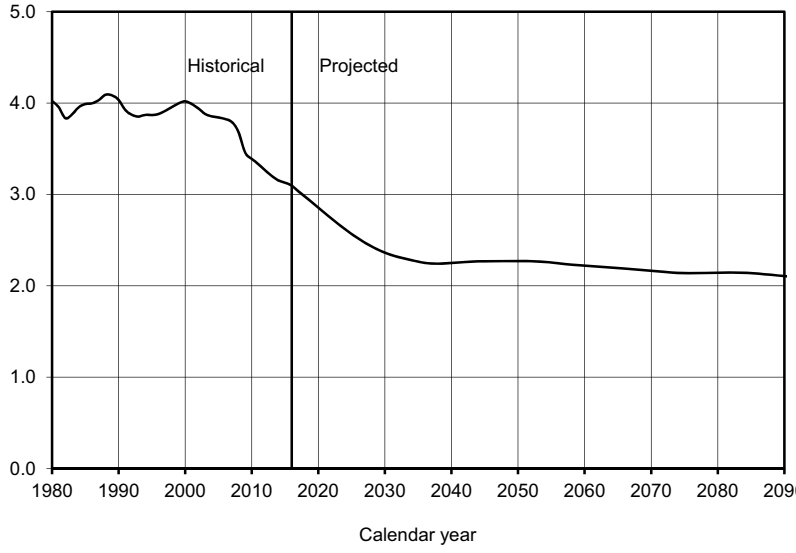
The Trustees project costs beyond the initial 25-year period for the intermediate estimate based on the assumption that average HI expenditures per beneficiary will increase at a rate determined by the economic model described in sections II.C and IV.D, less the price update adjustments based on economy-wide productivity gains. This net rate is about equal to the increase in Gross Domestic Product (GDP) per capita in 2041 and declines to about 0.3 percentage point *slower* than the growth in GDP by 2091. Beyond the initial 25-year projection period, the low-cost and high-cost alternatives assume that HI cost increases, relative to taxable payroll increases, are initially 2 percentage points less rapid and 2 percentage points more rapid, respectively, than the results under the intermediate assumptions. The assumed initial 2-percentage-point differentials decrease gradually until the year 2066, when HI cost increases (relative to taxable payroll) are assumed to be the same as under the intermediate assumptions.

Figure III.B3 shows the cost rates over a 75-year valuation period in order to present fully the future economic and demographic developments that one may reasonably expect to occur, such as the impact of the large increase in the number of people over age 65 that began to take place in 2011. Growth occurs in part because the ratio of workers to beneficiaries will decrease as persons born during the period between the end of World War II and the mid-1960s (known as the baby boom generation) reach eligibility age and begin to receive benefits.

Figure III.B4 shows the projected ratio of workers per HI beneficiary from 1980 to 2091. As figure III.B4 indicates, the ratio was about 4 workers per beneficiary from 1980 through 2008. It began to decline initially due to the recession but then declined further due to the retirement of the baby boom generation.

[35]Actual experience during these periods was similar on average to the high-cost economic and programmatic assumptions for the future.

Figure III.B4.—Workers per HI Beneficiary
[Based on intermediate assumptions]



While every beneficiary in 2016 had about 3.1 workers to pay for his or her HI benefit, in 2030 under the intermediate demographic assumptions there would be only about 2.4 workers for each beneficiary. This ratio would then continue to decline until there were only 2.1 workers per beneficiary in 2091. This reduction implies an increase in the HI cost rate of about 50 percent by 2091, relative to its current level, solely due to this demographic factor.[36]

While year-by-year comparisons of revenues and costs are necessary to measure the adequacy of HI financing, the financial status of the trust fund is often summarized, over a specific valuation period, by a single measure known as the *actuarial balance*. The actuarial balance of the HI trust fund is defined as the difference between the summarized income rate for the valuation period and the summarized cost rate for the same period.

The summarized income rates, cost rates, and actuarial balance are based upon the present values of future income, costs, and taxable payroll. The Trustees calculate the present values, as of the beginning of the valuation period, by discounting the future annual amounts of

[36]In addition to this factor, the projected increase in the HI cost rate reflects greater use of health care services as the beneficiary population ages and higher average costs per service due to medical price inflation and technological advances in care. The slower growth in Medicare payment rates to HI providers under the ACA substantially offsets these increases.

income and outgo using the projected effective rates of interest credited to the HI trust fund for the first 10 years and grade to the ultimate interest rate assumption by year 15. They then determine the summarized income and cost rates over the projection period by dividing the present value of income and cost, respectively, by the present value of taxable payroll. The difference between the summarized income rate and cost rate over the long-range projection period (after an adjustment to take into account the fund balance at the valuation date and a target trust fund balance at the end of the valuation period) is the actuarial balance.

The summarized cost rate includes the cost of maintaining a trust fund balance at the end of the period equal to the following year's estimated costs. While a zero or positive actuarial balance implies that the end-of-period trust fund balance is at least as large as the target trust fund balance, there is no such implication for the trust fund balance at other times during the projection period.

Table III.B8 shows the actuarial balances based on the Trustees' three sets of economic and demographic assumptions, for the next 25, 50, and 75 years. Based on the intermediate set of assumptions, the summarized income rate for the entire 75-year period is 3.92 percent of taxable payroll and the summarized cost rate is 4.56 percent. As a result, the actuarial balance is −0.64 percent, and the HI trust fund fails to meet the Trustees' long-range test of close actuarial balance.[37]

One can interpret the actuarial balance as the percentage that could be added to the income rates and/or subtracted from the cost rates immediately and throughout the entire valuation period in order for the financing to support HI costs and provide for the targeted trust fund balance at the end of the projection period. The income rate increase according to this method is 0.64 percent of taxable payroll. However, if no such changes occurred until 2029, when the trust fund would be depleted, then the required increase would be 0.80 percent of taxable payroll under the intermediate assumptions.[38]

[37]This test is defined in section V.I.

[38]Actuarial balance could also be reached by reducing benefits by 14 percent every year immediately, or by making no change until 2029 and then reducing benefits by 17 percent.

Table III.B8.—HI Actuarial Balances under Three Sets of Assumptions

	Intermediate assumptions	Alternative	
		Low-Cost	High-Cost
Valuation periods:[1]			
25 years, 2017-2041:			
Summarized income rate	3.69	3.66	3.75
Summarized cost rate	4.22	3.13	5.73
Actuarial balance	−0.53	0.53	−1.98
50 years, 2017-2066:			
Summarized income rate	3.81	3.79	3.86
Summarized cost rate	4.45	2.76	7.33
Actuarial balance	−0.64	1.03	−3.47
75 years, 2017-2091:			
Summarized income rate	3.92	3.91	3.97
Summarized cost rate	4.56	2.62	8.05
Actuarial balance	−0.64	1.29	−4.08

[1]Income rates include beginning trust fund balances, and cost rates include the cost of attaining a trust fund balance at the end of the period equal to 100 percent of the following year's estimated expenditures.

Note: Totals do not necessarily equal the sums of rounded components.

The divergence in outcomes among the three sets of assumptions is apparent both in the estimated operations of the trust fund on a cash basis (as discussed in section III.B2) and in the 75-year summarized costs. Under the low-cost economic and demographic assumptions, the summarized cost rate for the 75-year valuation period is 2.62 percent of taxable payroll, and the summarized income rate is 3.91 percent of taxable payroll; accordingly, HI income rates would be adequate under the highly favorable conditions assumed in the low-cost alternative. Under the high-cost assumptions, the summarized cost rate for the 75-year projection period is 8.05 percent of taxable payroll, which is more than twice the summarized income rate of 3.97 percent of taxable payroll.

As suggested earlier, past experience has indicated that economic and demographic conditions that are as financially adverse as those assumed under the high-cost alternative can, in fact, occur over many years. Readers should view all of the alternative sets of economic and demographic assumptions as plausible. The wide range of results under the three sets of assumptions is indicative of the uncertainty of HI's future cost and its sensitivity to future economic and demographic conditions. Accordingly, it is important to maintain an adequate balance in the HI trust fund as a reserve for contingencies and to promptly address financial imbalances through corrective legislation.

Table III.B9 shows the long-range actuarial balance under the intermediate projections with its component parts—the present values of tax income, expenditures, and asset requirement of the HI program over the next 75 years.

Table III.B9.—Components of 75-Year HI Actuarial Balance under Intermediate Assumptions (2017-2091)

Present value as of January 1, 2017 (in billions):	
a. Payroll tax income	$18,345
b. Taxation of benefits income	2,924
c. Fraud and abuse control receipts	167
d. Other Income	302
e. Total income (a + b + c + d)	21,738
f. Expenditures	25,270
g. Expenditures minus income (f − e)	3,532
h. Trust fund assets at start of period	199
i. Open-group unfunded obligation (g − h)	3,333
j. Ending target trust fund[1]	259
k. Present value of actuarial balance (e − f + h − j)	−3,592
l. Taxable payroll	559,294
Percent of taxable payroll:	
Actuarial balance (k ÷ l)	−0.64%

[1]The calculation of the actuarial balance includes the cost of accumulating a target trust fund balance equal to 100 percent of annual expenditures by the end of the period.

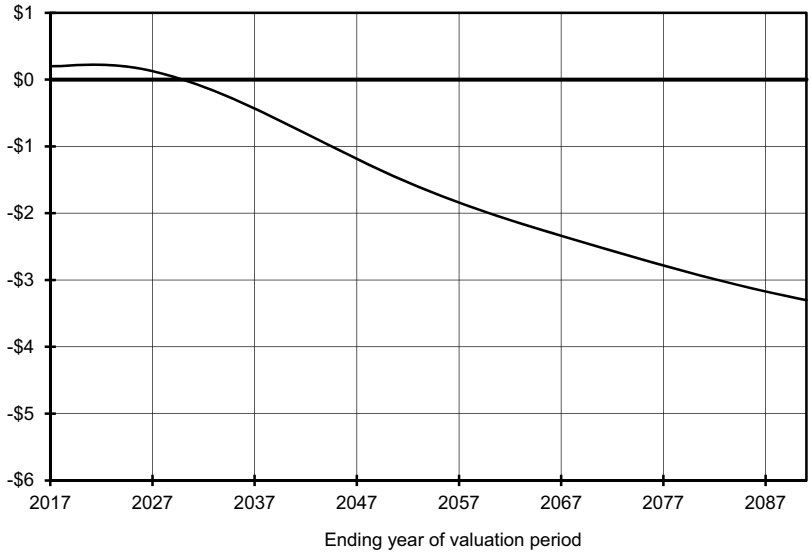
Note: Totals do not necessarily equal the sums of rounded components.

The present value of future expenditures less future tax income, decreased by the amount of HI trust fund assets on hand at the beginning of the projection, amounts to $3.3 trillion. This value is referred to as the 75-year unfunded obligation for the HI trust fund, and it is lower than last year's value of $3.6 trillion. The actuarial balance is like the unfunded obligation except that (i) it is a measure of the degree to which the program is funded rather than unfunded and so is opposite in sign; (ii) it includes the trust fund balance at the end of 75 years as a cost; and (iii) it is expressed as a percentage of taxable payroll. Specifically, the actuarial balance is −0.64 percent of taxable payroll and is calculated as the trust fund balance plus the present value of revenues less the present value of costs (−$3.0 trillion), less the present value of the target trust fund balance ($259 billion), all divided by the present value of future taxable payroll ($559.3 trillion).

Figure III.B5 shows the present values, as of January 1, 2017, of cumulative HI taxes less expenditures (plus the 2017 trust fund) through each of the next 75 years. The Trustees estimate these values under current-law expenditures and tax rates.

Figure III.B5.—Present Value of Cumulative HI Taxes Less Expenditures through Year Shown, Evaluated under Current-Law Tax Rates and Legislated Expenditures

[Present value as of January 1, 2017; in trillions]



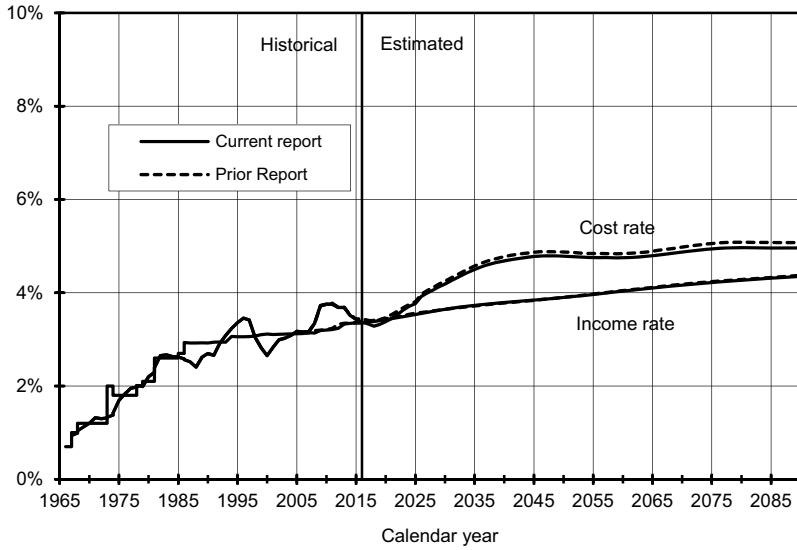
The cumulative annual balance of the trust fund at the beginning of 2017 is about $0.2 trillion. The cumulative present value increases slightly before it trends steadily downward over the projection period due to the anticipated shortfall of tax revenues, relative to expenditures, in all years beginning in 2022. The projected depletion date of the trust fund is 2029, at which time cumulative expenditures would have exceeded cumulative tax revenues by enough to equal the initial fund assets accumulated with interest. The continuing downward slope in the line thereafter further illustrates the difference between the HI expenditures projected under current law and the financing currently scheduled to support these expenditures. As noted previously, over the full 75-year period, the fund has a projected present value unfunded obligation of $3.3 trillion. This unfunded obligation indicates that if $3.3 trillion were added to the trust fund at the beginning of 2017, the program would meet the projected cost of expenditures over the next 75 years. More realistically, additional annual revenues and/or reductions in expenditures, with a present value totaling $3.3 trillion, would be necessary to reach financial balance (but with zero trust fund assets at the end of 2091).

The estimated unfunded obligation of $3.3 trillion and the closely associated present value of the actuarial deficit ($3.6 trillion) are useful indicators of the sizable financial burden facing the American

public. In other words, increases in revenues and/or reductions in benefit expenditures—equivalent to a lump-sum amount today of $3.6 trillion—would be necessary to bring the HI trust fund into long-range financial balance. At the same time, long-range measures expressed in dollar amounts can be difficult to interpret, even when calculated as present values, which are sensitive to the underlying discount rate assumptions. For this reason, the Board of Trustees has customarily emphasized relative measures, such as the income rate and cost rate comparisons shown earlier in this section, and comparisons to the present value of future taxable payroll or GDP.

Figure III.B6 compares the year-by-year HI cost and income rates for the current annual report with the corresponding projections from the 2016 report.

Figure III.B6.—Comparison of HI Cost and Income Rate Projections: Current versus Prior Year's Reports



As figure III.B6 indicates, the intermediate HI cost rate projections in this year's report are lower than those in the 2016 report, and the projected income rates vary. The lower cost projections are primarily due to lower 2016 spending and lower utilization assumptions for inpatient hospital and skilled nursing facility services. The income rate is slightly lower through 2025 and then becomes higher, but it is lower again by 2061. Payroll tax income is lower in all years after 2017 but becomes increasingly so throughout the projection period. This decrease is offset between 2026 and 2061 by increased estimates for

monies derived from the fraud and abuse control program throughout the 75 years and increased estimates for taxes on Social Security benefits for certain years.

The Trustees' estimate of the 75-year HI actuarial balance under the intermediate assumptions, −0.64 percent of taxable payroll, is 0.09 percentage point more favorable than estimated in the 2016 annual report. The reasons for this change, which are listed in table III.B10, are explained below:

(1) Change in valuation period: Updating the valuation period from 2016-2090 to 2017-2091 results in a change to the actuarial balance of −0.01 percent of taxable payroll.
(2) Updating the projection base: Actual 2016 incurred HI expenditures were lower than previously estimated, and taxable payroll was slightly higher. The result is a lower cost as a percentage of taxable payroll for 2016 than estimated previously. These base-year differences change the actuarial balance by 0.06 percent of taxable payroll.
(3) Private health plan assumptions: Payment rates to private health plans are lower than projected in last year's report beginning in 2018. This result is primarily due to lower projected 2018 fee-for-service costs, which serve as the basis for 2018 private plan payment rates. The net effect of this and other minor modifications is a 0.02-percent change in the actuarial balance.
(4) Hospital assumptions: The primary change in hospital assumptions in this report is lower utilization than assumed in last year's report. The impact of this and other minor modifications is a 0.08-percent change in the actuarial balance.
(5) Other provider assumptions: Lower assumed utilization for skilled nursing facility services results in a 0.01-percent change in the actuarial balance.
(6) Other economic and demographic assumptions: The net effect of several adjustments to the economic and demographic assumptions is a −0.07-percent change in the actuarial balance. For the assumptions in this year's report, the major change is lower taxable payroll, which is due to a slightly lower real wage differential in both the short term and the long term and less of a recovery from the recent recession than projected in the 2016 report. However, the updates to the payment rates—and, as a result, expenditures—are largely unchanged due to lower

productivity increases, which offset the lower increases in the market basket.

Table III.B10.—Change in the 75-Year Actuarial Balance since the 2016 Report

1. Actuarial balance, intermediate assumptions, 2016 report	−0.73%
2. Changes:	
a. Valuation period	−0.01
b. Base estimate	0.06
c. Private health plan assumptions	0.02
d. Hospital assumptions	0.08
e. Other provider assumptions	0.01
f. Other economic and demographic assumptions	−0.07
Net effect, above changes	0.09
3. Actuarial balance, intermediate assumptions, 2017 report	−0.64

4. Long-Range Sensitivity Analysis

This section presents estimates that illustrate the sensitivity of the long-range HI cost rate, income rate, and actuarial balance of HI to changes in selected individual assumptions. The estimates based on the three alternative sets of assumptions (intermediate, low-cost, and high-cost) demonstrate the effects of varying all of the principal assumptions simultaneously in order to portray a generally more optimistic or pessimistic future for the projected financial status of the HI trust fund. In the sensitivity analysis presented in this section, the intermediate set of assumptions is the reference point, and one assumption at a time varies within that alternative. In each case, the Trustees assume that the provisions of current law remain unchanged throughout the 75-year projection period.

Each table that follows shows the effects of changing a particular assumption on the HI summarized income rates, summarized cost rates, and actuarial balances for 25-year, 50-year, and 75-year valuation periods. The discussion of the tables generally does not include the income rate, since it varies only slightly with changes in assumptions. The change in each of the actuarial balances is approximately equal to the change in the corresponding cost rate, but in the opposite direction. For example, a lower projected cost rate would result in an improvement or increase in the corresponding projected actuarial balance.

a. Real-Wage Differential

Table III.B11 shows projected HI income rates, cost rates, and actuarial balances on the basis of the intermediate assumptions, with various assumptions about the real-wage differential (the difference between the percent increase in the average wage in covered employment and the CPI). The ultimate real-wage differential will be

0.6 percentage point (high-cost alternative), 1.2 percentage points (intermediate projections), and 1.8 percentage points (low-cost alternative). In each case, the assumed ultimate annual increase in the Consumer Price Index (CPI) is 2.6 percent (as assumed for the intermediate projections), yielding ultimate percentage increases in nominal average annual wages in covered employment of 3.2, 3.8, and 4.4 percent under the three illustrations, respectively.

Past increases in real earnings have exhibited substantial variation. During 1951-1970, real earnings grew by an average of 2.2 percent per year. During 1972-1996, however, the average annual increase in real earnings amounted to only 0.53 percent.[39] Poor performance in real-wage growth would have substantial consequences for the HI trust fund; as shown in table III.B11, projected HI cost rates are fairly sensitive to the assumed growth rates in real wages. For the 75-year period 2017-2091, the summarized cost rate decreases from 4.95 percent (for a real-wage differential of 0.6 percentage point) to 4.19 percent (for a differential of 1.8 percentage points). The HI actuarial balance over this period shows a corresponding improvement for faster rates of growth in real wages.

Table III.B11—Estimated HI Income Rates, Cost Rates, and Actuarial Balances, Based on Intermediate Estimates with Various Real-Wage Assumptions

[As a percentage of taxable payroll]

	Ultimate percentage increase in wages−CPI[1]		
Valuation period	3.2−2.6	3.8−2.6	4.4−2.6
Summarized income rate:			
25-year: 2017-2041	3.72	3.69	3.69
50-year: 2017-2066	3.78	3.81	3.87
75-year: 2017-2091	3.85	3.92	4.01
Summarized cost rate:			
25-year: 2017-2041	4.39	4.22	4.09
50-year: 2017-2066	4.73	4.45	4.20
75-year: 2017-2091	4.95	4.56	4.19
Actuarial balance:			
25-year: 2017-2041	−0.67	−0.53	−0.41
50-year: 2017-2066	−0.95	−0.64	−0.33
75-year: 2017-2091	−1.10	−0.64	−0.18

[1]The first value in each pair is the assumed ultimate annual percentage increase in average wages in covered employment. The second value is the assumed ultimate annual percentage increase in the CPI. The difference between the two values is the real-wage differential.

The sensitivity of the HI actuarial balance to different real-wage assumptions is significant, but not as substantial as one might intuitively expect. Higher real-wage differentials immediately increase both HI expenditures for health care and wages for all workers. Though there is a full effect on wages and payroll taxes, the effect on benefits

[39]The Trustees chose this period because it begins and ends with years in which the economy reached full employment. The period thus allows measurement of trend growth over complete economic cycles.

is only partial, since not all health care costs are wage-related. The HI cost rate decreases with increasing real-wage differentials because the higher real-wage levels increase the taxable payroll to a greater extent than they increase HI benefits. In particular, each 0.5-percentage-point increase in the assumed real-wage differential increases the long-range HI actuarial balance, on average, by about 0.38 percent of taxable payroll.

b. Consumer Price Index

Table III.B12 shows projected HI income rates, cost rates, and actuarial balances on the basis of the intermediate alternative, with various assumptions about the rate of increase for the CPI. The ultimate annual increase in the CPI will be 3.2 percent (low-cost alternative), 2.6 percent (intermediate projections), and 2.0 percent (high-cost alternative).[40] In each case, the assumed ultimate real-wage differential is 1.2 percent (as assumed for the intermediate projections), which yields ultimate percentage increases in average annual wages in covered employment of 4.4, 3.8, and 3.2 percent under the three illustrations.

Table III.B12.—Estimated HI Income Rates, Cost Rates, and Actuarial Balances, Based on Intermediate Estimates with Various CPI-Increase Assumptions

[As a percentage of taxable payroll]

	Ultimate percentage increase in wages−CPI[1]		
Valuation period	4.4−3.2	3.8−2.6	3.2−2.0
Summarized income rate:			
25-year: 2017-2041	3.74	3.69	3.66
50-year: 2017-2066	3.95	3.81	3.67
75-year: 2017-2091	4.08	3.92	3.71
Summarized cost rate:			
25-year: 2017-2041	4.20	4.22	4.24
50-year: 2017-2066	4.42	4.45	4.47
75-year: 2017-2091	4.54	4.56	4.59
Actuarial balance:			
25-year: 2017-2041	−0.46	−0.53	−0.58
50-year: 2017-2066	−0.47	−0.64	−0.80
75-year: 2017-2091	−0.46	−0.64	−0.88

[1]The first value in each pair is the assumed ultimate annual percentage increase in average wages in covered employment. The second value is the assumed ultimate annual percentage increase in the CPI.

The variation in the rate of change assumed for the CPI has only a small impact on the actuarial balance, as the summarized income rates are slightly affected while the summarized cost rates are virtually unchanged.

Faster assumed growth in the CPI results in a somewhat larger HI income rate because the income thresholds for the taxation of Social

[40]Prior to the 2015 report, the Trustees used the lower CPI for the low-cost alternative and the higher CPI for the high-cost alternative.

Security benefits and for the additional 0.9-percent payroll tax rate are not indexed. As a result, the share of Social Security benefits subject to income tax, as well as the share of earnings subject to the additional tax, increases over time. This impact accelerates under conditions of faster CPI growth. In contrast, the cost rate remains about the same with greater assumed rates of increase in the CPI. HI cost rates are relatively insensitive to the assumed level of general price inflation because price inflation has about the same proportionate effect on taxable payroll of workers as it does on medical care costs.

In practice, differing rates of inflation could occur between the economy in general and the medical-care sector. Readers can judge the effect of such a difference from the sensitivity analysis shown in section III.B4d on health care cost factors.

c. Real-Interest Rate

Table III.B13 shows projected HI income rates, cost rates, and actuarial balances under the intermediate alternative, with various assumptions about the annual real-interest rate for special public-debt obligations issuable to the trust fund. The ultimate annual real-interest rate will be 2.2 percent (high-cost alternative), 2.7 percent (intermediate projections), and 3.2 percent (low-cost alternative). In each case, the assumed ultimate annual increase in the CPI is 2.6 percent (as assumed for the intermediate projections), which results in ultimate annual yields of 4.8, 5.3, and 5.8 percent under the three illustrations.

Table III.B13.—Estimated HI Income Rates, Cost Rates, and Actuarial Balances, Based on Intermediate Estimates with Various Real-Interest Assumptions

[As a percentage of taxable payroll]

Valuation period	Ultimate annual real-interest rate		
	2.2 percent	2.7 percent	3.2 percent
Summarized income rate:			
25-year: 2017-2041	3.69	3.69	3.69
50-year: 2017-2066	3.82	3.81	3.80
75-year: 2017-2091	3.95	3.92	3.90
Summarized cost rate:			
25-year: 2017-2041	4.25	4.22	4.20
50-year: 2017-2066	4.49	4.45	4.41
75-year: 2017-2091	4.61	4.56	4.51
Actuarial balance:			
25-year: 2017-2041	−0.55	−0.53	−0.50
50-year: 2017-2066	−0.67	−0.64	−0.61
75-year: 2017-2091	−0.67	−0.64	−0.61

For all periods, the cost rate decreases slightly with increasing real-interest rates. Over 2017-2091, for example, the summarized HI cost rate would decline from 4.61 percent (for an ultimate real-interest rate of 2.2 percent) to 4.51 percent (for an ultimate real-interest rate of

3.2 percent). Accordingly, each 1.0-percentage-point increase in the assumed real-interest rate increases the long-range actuarial balance, on average, by about 0.06 percent of taxable payroll.

d. Health Care Cost Factors

Table III.B14 shows projected HI income rates, cost rates, and actuarial balances on the basis of the intermediate set of assumptions, with two variations on the relative annual growth rate in the aggregate cost of providing covered health care services to HI beneficiaries. Starting in 2017, the ratio of costs to taxable payroll will grow 1 percentage point more slowly than the intermediate projections, the same as the intermediate projections, and 1 percentage point faster than the intermediate projections. In each case, the taxable payroll will be the same as assumed for the intermediate projections.[41]

As noted previously, factors such as wage and price increases may simultaneously affect HI tax income and the costs incurred by hospitals and other providers of medical care to HI beneficiaries. (Sections III.B4a and III.B4b evaluate the sensitivity of the trust fund's financial status to these factors.) Other factors, such as the utilization of services by beneficiaries or the relative complexity of the services provided, can have an impact on provider costs without affecting HI tax income. The sensitivity analysis shown in table III.B14 illustrates the financial effect of any combination of these factors that results in the ratio of cost to payroll taxes increasing by 1 percentage point faster or slower than the intermediate assumptions.

Table III.B14.—Estimated HI Income Rates, Cost Rates, and Actuarial Balances, Based on Intermediate Estimates with Various Health Care Cost Growth Rate Assumptions

[As a percentage of taxable payroll]

	Annual cost/payroll relative growth rate		
Valuation period	−1 percentage point	0 percentage point	+1 percentage point
Summarized income rate:			
25-year: 2017-2041	3.69	3.69	3.69
50-year: 2017-2066	3.80	3.81	3.81
75-year: 2017-2091	3.92	3.92	3.93
Summarized cost rate:			
25-year: 2017-2041	3.68	4.22	4.86
50-year: 2017-2066	3.47	4.45	5.80
75-year: 2017-2091	3.25	4.56	6.68
Actuarial balance:			
25-year: 2017-2041	0.01	−0.53	−1.17
50-year: 2017-2066	0.33	−0.64	−1.99
75-year: 2017-2091	0.67	−0.64	−2.75

[41]These variations in HI cost growth rates are not equivalent to the high- and low-cost alternative assumptions, which use a different level and pattern of growth differentials and vary other assumptions in addition to the cost growth factors.

As illustrated in table III.B14, the financial status of the HI trust fund is extremely sensitive to the relative growth rates for health care service costs versus taxable payroll. For the 75-year period, the cost rate increases from 3.25 percent (for an annual cost/payroll growth rate of 1 percentage point less than the intermediate assumptions) to 6.68 percent (for an annual cost/payroll growth rate of 1 percentage point more than the intermediate assumptions). Each 1.0-percentage-point increase in the assumed cost/payroll relative growth rate decreases the long-range actuarial balance, on average, by about 1.71 percent of taxable payroll.

C. PART B FINANCIAL STATUS

This section presents actual operations of the Part B account in the SMI trust fund in 2016 and Part B projections for the next 75 years. Section III.C1 discusses Part B financial results for 2016, and sections III.C2 and III.C3 discuss the short-range Part B projections and the long-range projections, respectively. The projections shown in sections III.C2 and III.C3 assume no changes will occur in the statutory provisions and regulations under which Part B now operates.

1. Financial Operations in Calendar Year 2016

Table III.C1 presents a statement of the revenue and expenditures of the Part B account of the SMI trust fund in calendar year 2016, and of its assets at the beginning and end of the year.

Table III.C1.—Statement of Operations of the Part B Account in the SMI Trust Fund during Calendar Year 2016

[In thousands]

Total assets of the Part B account in the trust fund, beginning of period		$68,157,082
Revenue:		
Premiums from enrollees:		
Enrollees aged 65 and over	$60,617,788	
Disabled enrollees under age 65	11,437,574	
Total premiums		72,055,363
Premiums collected from Medicare Advantage participants		421,129
Government contributions:		
Enrollees aged 65 and over	163,036,770	
Disabled enrollees under age 65	42,693,055	
Repayable transfer from Treasury[1]	7,440,648	
Federal match of repayable transfer from Treasury[1]	23,990,761	
Repayment amount[1]	−587,312	
Adjustment for exempted amounts[1]	−1,884,050	
Health information technology (HIT) receipts	953,049	
Union activity	1,617	
Total government contributions		235,644,538
Other		9,665
Interest on investments		2,060,285
CMS interfund interest receipts[2]		4,075
Interfund interest payments to OASDI[2]		−666
ACA Medicare shared savings program receipts		1,662
Annual fees–branded Rx manufacturers and importers		3,000,000
Total revenue		$313,196,050
Expenditures:		
Net Part B benefit payments		$289,480,429
Administrative expenses:		
Transfer to Medicaid[3]	767,062	
Treasury administrative expenses	669	
Salaries and expenses, CMS[4]	1,759,341	
Salaries and expenses, Office of the Secretary, HHS	45,518	
Salaries and expenses, SSA	1,186,942	
Medicare Payment Advisory Commission	4,390	
Administration on aging funding	3,087	
Railroad Retirement administrative expenses	20,362	
Railroad Retirement administrative expenses, OIG	1,665	
CMS program management–Affordable Care Act	21,368	
Transfer to Patient-Centered Outcomes Research trust fund[5]	77,268	
ACL State Health Insurance Assistance Program[6]	10,010	
MACRA[7]	7,099	
Transfer to the Centers for Disease Control[8]	4,156	
Total administrative expenses		3,908,936
Total expenditures		$293,389,366
Net addition to the trust fund		19,806,685
Total assets of the Part B account in the trust fund, end of period		$87,963,767

[1]The Bipartisan Budget Act of 2015 (BBA) required a transfer of funds from the general fund to cover the premium income that was lost in 2016 as a result of the hold-harmless provision. The BBA further requires that, starting in 2016, the Part B premium otherwise determined be increased by $3.00, which is to be collected and repaid to the general fund of the Treasury. The additional repayment premium amounts will continue until the balance due (defined as transfer to the Part B account from the general fund plus forgone income-related premiums) has been repaid. The additional repayment premium is not to be matched by general revenue contributions; however, since CMS is not able to separate it from the standard premium, the additional repayment premium is matched. An adjustment for exempted amounts is therefore necessary to transfer this erroneous Federal matching amount back to the general fund.

[2]Reflects interest adjustments on the reallocation of administrative expenses among the Medicare trust funds, the OASDI trust funds, and the general fund of the Treasury. Estimated payments are made from the trust funds and then are reconciled, with interest, the next year when the actual costs are known. A positive figure represents a transfer to the Part B account in the SMI trust fund from the other trust funds. A negative figure represents a transfer from the Part B account of the SMI trust fund to the other funds.

[3]Represents amount transferred from the Part B account in the SMI trust fund to Medicaid to pay the Part B premium for certain qualified individuals, as legislated by the Balanced Budget Act of 1997.
[4]Includes expenses of the Medicare Administrative Contractors.
[5]Reflects amount transferred from the Part B account of the SMI trust fund to the Patient-Centered Outcomes Research trust fund, as authorized by the Patient Protection and Affordable Care Act of 2010.
[6]Reflects amount transferred from the Part B account of the SMI trust fund to the Administration for Community Living (ACL) for administration of the State Health Insurance Assistance program, as authorized by the Consolidated Appropriations Act of 2014.
[7]Represents amounts transferred from the Part B account of the SMI trust fund for administration of provisions of the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA).
[8]Reflects amount transferred from the Part B account of the SMI trust fund to the Centers for Disease Control as authorized by section 205 of the Consolidated Appropriations Act of 2016.

Note: Totals do not necessarily equal the sums of rounded components.

The total assets of the account amounted to $68.2 billion on December 31, 2015. During calendar year 2016, total revenue amounted to $313.2 billion, and total expenditures were $293.4 billion. Total assets were $88.0 billion as of December 31, 2016. The asset level increased during 2016 by approximately $19.8 billion.

a. Revenues

The major sources of revenue for the Part B account are (i) contributions of the Federal Government that the law authorizes to be appropriated and transferred from the general fund of the Treasury and (ii) premiums paid by eligible persons who voluntarily enroll. Another source of revenue is the annual fees assessed on manufacturers and importers of brand-name prescription drugs. Eligible persons aged 65 and over have been able to enroll in Part B since its inception in July 1966. Since July 1973, disabled persons who are under age 65 and who have met certain eligibility requirements have also been able to enroll.

Of the total Part B revenue, $72.1 billion represented premium payments by (or on behalf of) aged and disabled enrollees—an increase of 3.8 percent over the amount of $69.4 billion for the preceding year.

Government contributions matched the premiums paid for fiscal years 1967 through 1973 dollar for dollar. Beginning July 1973, the amount of government contributions corresponding to premiums paid by each of the two groups of enrollees is determined by applying a matching rate, prescribed in the law for each group, to the amount of premiums received from that group.[42] This ratio is equal to twice the monthly

[42]For 2016 through 2021, under the intermediate assumptions, the standard premium includes an additional amount ($3.00 through 2020 and $2.10 in 2021) to repay the balance due resulting from a 2016 general revenue transfer to the Part B account of the SMI trust fund, in accordance with the Bipartisan Budget Act of 2015. This additional amount is not included in the determination of the matching rates and is not to be matched by general revenue contributions.

actuarial rate applicable to the particular group of enrollees, minus the standard monthly premium rate, divided by the standard monthly premium rate.

The Secretary of Health and Human Services promulgates standard monthly premium rates and actuarial rates each year. Table III.C2 shows past monthly premium rates and actuarial rates together with the corresponding percentages of Part B costs covered by the premium rate. Estimated future premium amounts under the intermediate set of assumptions appear in tables V.E2 and V.E3.

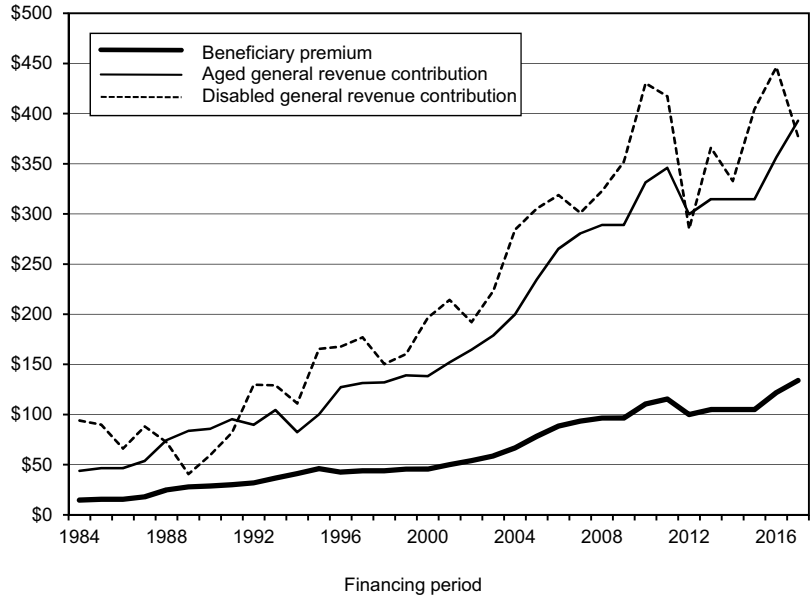
Table III.C2.—Standard Part B Monthly Premium Rates, Actuarial Rates, and Premium Rates as a Percentage of Part B Cost

	Standard monthly premium rate[1]	Monthly actuarial rate		Premium rates as a percentage of Part B cost	
		Enrollees aged 65 and over	Disabled enrollees under age 65	Enrollees aged 65 and over	Disabled enrollees under age 65
July 1966-March 1968	$3.00	—	—	50.0%	—
April 1968-June 1970	4.00	—	—	50.0	—
12-month period ending June 30 of					
1975	6.70	6.70	18.00	50.0	18.6
1980	8.70	13.40	25.00	32.5	17.4
Calendar year					
1985	15.50	31.00	52.70	25.0	14.7
1990	28.60	57.20	44.10	25.0	32.4
1991	29.90	62.60	56.00	23.9	26.7
1992	31.80	60.80	80.80	26.2	19.7
1993	36.60	70.50	82.90	26.0	22.1
1994	41.10	61.80	76.10	33.3	27.0
1995	46.10	73.10	105.80	31.5	21.8
1996	42.50	84.90	105.10	25.0	20.2
1997	43.80	87.60	110.40	25.0	19.8
1998	43.80	87.90	97.10	24.9	22.6
1999	45.50	92.30	103.00	24.6	22.1
2000	45.50	91.90	121.10	24.8	18.8
2001	50.00	101.00	132.20	24.8	18.9
2002	54.00	109.30	123.10	24.7	21.9
2003	58.70	118.70	141.00	24.7	20.8
2004	66.60	133.20	175.50	25.0	19.0
2005	78.20	156.40	191.80	25.0	20.4
2006	88.50	176.90	203.70	25.0	21.7
2007	93.50	187.00	197.30	25.0	23.7
2008	96.40	192.70	209.70	25.0	23.0
2009	96.40	192.70	224.20	25.0	21.5
2010	110.50	221.00	270.40	25.0	20.4
2011	115.40	230.70	266.30	25.0	21.7
2012	99.90	199.80	192.50	25.0	25.9
2013	104.90	209.80	235.50	25.0	22.3
2014	104.90	209.80	218.90	25.0	24.0
2015	104.90	209.80	254.80	25.0	20.6
2016	121.80	237.60	282.60	25.6	21.5
2017	134.00	261.90	254.20	25.6	26.4

[1]The amount shown for each year represents the standard Part B premium paid by, or on behalf of, most Part B enrollees. It does not reflect other amounts that certain beneficiaries must pay, such as the income-related monthly adjustment amount for beneficiaries with high incomes and the premium surcharge for beneficiaries who enroll late. In addition, it does not reflect a reduction in premium for beneficiaries covered by the hold-harmless provision. As a result of this provision, most Part B beneficiaries had their 2010 and 2011 monthly premium held to the 2009 rate of $96.40, had their 2016 monthly premium held to the 2015 rate of $104.90, and had the increase in their 2017 monthly premium limited to about $4.00, on average. Section V.E describes these amounts in more detail.

Figure III.C1 is a graph of the monthly per capita financing rates in all financing periods after 1983 for enrollees aged 65 and over and for disabled individuals under age 65. The graph shows the portion of the financing contributed by the beneficiaries and by general revenues. As indicated, general revenue financing is the largest income source for Part B.

Figure III.C1.—Part B Aged and Disabled Monthly Per Capita Trust Fund Income



Note: The amounts shown do not include the catastrophic coverage monthly premium rate for 1989.

In calendar year 2016, premium matching contributions received from the general fund of the Treasury amounted to $205.70 billion, which accounted for 65.7 percent of total revenue. The Bipartisan Budget Act of 2015 (BBA) required a transfer of $7.4 billion in 2016 from the general fund of the Treasury to the Part B account and specified that these funds be treated as premiums for general revenue matching purposes. The associated matching amounts received totaled $24.0 billion. The BBA also requires that payments be made from the Part B account of the SMI trust fund to the general fund of the Treasury, and these amounts totaled $0.6 billion in 2016. Transfers from the general fund of the Treasury for the health information technology (HIT) incentive payments were $1.0 billion in 2016. Transfers amounting to $1.9 billion were made from the Part B account to the general fund of the Treasury in order to adjust for certain transfers made for exempted amounts.[43] The annual fees assessed on manufacturers and importers of brand-name prescription drugs amounted to $3.0 billion in revenue.

Another source of Part B revenue is interest received on investments held by the Part B account. A description of the investment procedures of the Part B account appears later in this section. In calendar year

[43]See footnote 1 of table III.C1.

2016, $2.1 billion of revenue was from interest on the investments of the account.

The Department of the Treasury may accept and deposit in the Part B account unconditional money gifts or bequests made for the benefit of the fund. The Part B account received contributions in the amount of $11 million in calendar year 2016.

b. Expenditures

The account pays expenditures for Part B benefit payments and administrative expenses. All expenses incurred by the Department of Health and Human Services, the Social Security Administration, and the Department of the Treasury in administering Part B are charged to the account. Such administrative duties include payment of benefits, fraud and abuse control activities, and experiments and demonstration projects designed to determine various methods of increasing efficiency and economy in providing health care services while maintaining the quality of these services.

In addition, Congress has authorized expenditures from the trust funds for construction, rental and lease, or purchase contracts of office buildings and related facilities for use in connection with the administration of Part B. The account expenditures include such costs. The net worth of facilities and other fixed capital assets, however, does not appear in the statement of Part B assets presented in this report, since the value of fixed capital assets does not represent funds available for benefit or administrative expenditures and is not, therefore, pertinent in assessing the actuarial status of the funds.

Of total Part B expenditures, $289.5 billion represented net benefits paid from the account for health services.[44] Net benefits increased 5.0 percent over the corresponding amount of $275.8 billion paid during the preceding calendar year. This spending growth reflects the net change in both the number of beneficiaries and the price, volume, and intensity of services. Additional information on Part B benefits by type of service is available in section IV.B1.

The remaining $3.9 billion of expenditures was for administrative expenses and represented 1.3 percent of total Part B expenditures in

[44]Net benefits equal the total gross amounts initially paid from the trust fund during the year less recoveries of overpayments identified through fraud and abuse control activities.

2016.[45] Administrative expenses are shown on a net basis, after adjustments to the preliminary allocation of such costs among the Social Security and Medicare trust funds and the general fund of the Treasury.

c. Actual experience versus prior estimates

Table III.C3 compares the actual experience in calendar year 2016 with the estimates presented in the 2015 and 2016 annual reports. A number of factors can contribute to differences between estimates and subsequent actual experience. In particular, actual values for key economic and other variables can differ from assumed levels, and lawmakers may adopt legislative and regulatory changes after a report's preparation. Table III.C3 indicates that actual Part B benefit payments were slightly lower than estimated in the 2015 report and close to what was estimated in the 2016 report. Actual premiums and government contributions were slightly higher than estimated in 2016, as the financing rates were determined in the fall of 2015 and were included in the 2016 report, while premiums were lower and government contributions higher than estimated in 2015.

Table III.C3.—Comparison of Actual and Estimated Operations of the Part B Account in the SMI Trust Fund, Calendar Year 2016

[Dollar amounts in millions]

		Comparison of actual experience with estimates for calendar year 2016 published in:			
		2016 report		2015 report	
Item	Actual amount	Estimated amount[1]	Actual as a percentage of estimate	Estimated amount[1]	Actual as a percentage of estimate
Premiums from enrollees	$72,055	$71,354	101%	$77,765	93%
Government contributions	235,645	233,860	101	223,213	106
Benefit payments[2]	289,480	289,680	100	294,443	98

[1]Under the intermediate assumptions.

[2]Benefit payments include additional premiums for Medicare Advantage plans that are deducted from beneficiaries' Social Security benefits, costs of Quality Improvement Organizations, and health information technology payments.

d. Assets

The Department of the Treasury invests the portion of the Part B account not needed to meet current expenditures for benefits and administration in interest-bearing obligations of the U.S. Government.

The Social Security Act authorizes the issuance of special public-debt obligations for purchase exclusively by the account. The law requires

[45]In 2016, the Part B salaries and expenses for CMS, including the administrative expenses of the Medicare Administrative Contractors that process fee-for-service claims, amounted to $1.8 billion, or 0.6 percent of total Part B expenditures.

that these special public-debt obligations shall bear interest at a rate based on the average market yield (computed on the basis of market quotations as of the end of the calendar month immediately preceding the date of such issue) for all marketable interest-bearing obligations of the United States forming a part of the public debt that are not due or callable until after 4 years from the end of that month. Since the inception of the SMI trust fund, the Department of the Treasury has always invested the assets in special public-debt obligations.[46] Table V.H10, presented in appendix H, shows the assets of the SMI trust fund (Parts B and D) at the end of fiscal years 2015 and 2016.

2. 10-Year Actuarial Estimates (2017-2026)

Section III.C2 provides detailed information concerning the short-range financial status of the Part B account, including projected annual income, outgo, differences between income and outgo, and trust fund balances. The bases of the projected future operations of the Part B account are the Trustees' economic and demographic assumptions, as detailed in the OASDI Trustees Report, as well as other assumptions unique to Part B. Section IV.B1 presents an explanation of the effects of these assumptions on the estimates in this report. The Trustees also assume that financing for future periods will be determined according to the statutory provisions described in section III.C1a, although Part B financing rates have been set only through December 31, 2017.

In 2017 the monthly Part B premium rate is $134.00, which is $12.20 higher than the 2016 monthly premium of $121.80. For determining an individual's monthly premium rate, there is a hold-harmless provision in the law that limits the dollar increase in the premium to the dollar increase in an individual's Social Security benefit. This provision applies to most beneficiaries who have their premiums deducted from their Social Security benefits, or roughly 70 percent of Part B enrollees.[47] Because the cost-of-living adjustment (COLA) for Social Security benefits is 0.3 percent for 2017, the premium increase was limited to an average of about $4.00 for those beneficiaries to whom the provision applies.

---

[46]The Department of the Treasury may also make investments in obligations guaranteed as to both principal and interest by the United States, including certain federally sponsored agency obligations.

[47]About 30 percent of Part B enrollees are not eligible for the hold-harmless provision. This group consists of new enrollees during the year, enrollees who do not receive Social Security benefit checks, enrollees with high incomes who are subject to the income-related premium adjustment, and dual Medicare-Medicaid beneficiaries (whose premiums are paid by State Medicaid programs).

In 2016, the COLA for Social Security benefits was 0 percent, and premiums did not increase from the 2015 level for beneficiaries to whom the hold-harmless provision applies. Without the Bipartisan Budget Act of 2015 (BBA), Part B premiums for other beneficiaries would have been raised substantially to offset premiums forgone as a result of the hold-harmless provision. However, the BBA specified that the Part B premium for 2016 be determined as if the hold-harmless provision did not apply and that a transfer be made from the general fund of the Treasury to the Part B account of the SMI trust fund in the amount of the estimated forgone premiums (and that the transfer be treated as premiums for matching purposes).

The BBA further requires that, starting in 2016, the Part B premium otherwise determined be increased by $3.00, which is to be collected and repaid to the general fund of the Treasury. The additional repayment premium amounts will continue until the balance due (defined in the BBA as the transfer to the Part B account from the general fund plus forgone income-related premiums) has been repaid.[48] The 2017 premium of $134.00 includes $3.00 for this purpose.

MACRA replaced the physician payment updates under the sustainable growth rate (SGR) formula with specified physician payment updates for every future year. In 2016, physician payments are 0.5 percent higher than payment levels at the end of 2015. The physician payment update for 2017 through 2019 will be 0.5 percent. For 2020 through 2025, the update will be 0.0 percent. Additional payments of $500 million per year for physicians in the merit-based incentive payment system and 5-percent annual bonuses for those in advanced alternative payment models (APMs) are payable in 2019 through 2025. For 2026 and later, there will be two payment rates: for providers paid through an advanced APM, payment rates will be increased by 0.75 percent each year, while payment rates for all other providers will be increased each year by 0.25 percent. The income, expenditures, and assets for Part B reflect these provisions.

Projected Part B expenditures are further affected by the sequestration of Medicare expenditures required by current law. The sequestration reduces benefit payments by 2 percent from April 1, 2013 through March 31, 2025 and by 4 percent from April 1, 2025 through September 30, 2025. Due to sequestration, non-salary administrative

[48]In the final repayment year, the additional amount may be less than $3.00 in order to avoid overpayments.

expenses are reduced by an estimated 5 percent from March 1, 2013 through September 30, 2025.

Table III.C4 shows the estimated operations of the Part B account under the intermediate assumptions on a calendar-year basis through 2026.

Table III.C4.—Operations of the Part B Account in the SMI Trust Fund (Cash Basis) during Calendar Years 1970-2026

[In billions]

	Income				Expenditures			Account	
Calendar year	Premium income	General revenue[1]	Interest and other[2,3]	Total	Benefit payments[3,4]	Administrative expenses	Total	Net change	Balance at end of year[5]
Historical data:									
1970	$1.1	$1.1	$0.0	$2.2	$2.0	$0.2	$2.2	−$0.0	$0.2
1975	1.9	2.6	0.1	4.7	4.3	0.5	4.7	−0.1	1.4
1980	3.0	7.5	0.4	10.9	10.6	0.6	11.2	−0.4	4.5
1985	5.6	18.3	1.2	25.1	22.9	0.9	23.9	1.2	10.9
1990	11.3	33.0	1.6	45.9	42.5	1.5	44.0	1.9	15.5
1995	19.7	39.0	1.6	60.3	65.0	1.6	66.6	−6.3	13.1
2000	20.6	65.9	3.4	89.9	88.9[6]	1.8	90.7	−0.8	44.0
2005	37.5	118.1	1.4	157.0	149.2	3.2	152.4	4.6	24.0
2010	52.0[7]	153.5[7]	3.3	208.8	209.7	3.2	212.9	−4.1	71.4
2011	57.5	170.2	5.9	233.6	221.7	3.6	225.3	8.3	79.7
2012	58.0	163.8	5.2	227.0	236.5	3.9	240.5	−13.5	66.2
2013	63.1	185.8	6.1	255.0	243.8	3.3	247.1	7.9	74.1
2014	65.6	188.5	5.7	259.8	261.9	4.0	265.9	−6.1	68.1
2015	69.4[7]	203.9[7]	5.7	279.0	275.8	3.1	279.0	0.1	68.2
2016	72.1[7]	235.6[7]	5.5	313.2	289.5	3.9	293.4	19.8	88.0
Intermediate estimates:									
2017	80.7	215.5	6.6	302.8	309.7	3.1	312.8	−9.9	78.0
2018	94.4	252.2	7.0	353.7	330.2	3.3	333.5	20.2	98.2
2019	99.2	267.2	6.6	372.9	360.4	3.5	363.9	9.0	107.2
2020	110.1[7]	296.6[7]	7.1	413.8	390.2	3.8	394.0	19.8	127.0
2021	111.1[7]	300.8[7]	7.5	419.5	423.5	4.0	427.5	−8.1	119.0
2022	123.1	338.7	8.0	469.8	457.9	4.3	462.2	7.6	126.5
2023	134.0	366.7	8.6	509.2	494.2	4.6	498.8	10.4	136.9
2024	145.3	396.7	9.2	551.3	536.3	4.8	541.1	10.1	147.1
2025	156.5	426.5	10.1	593.1	572.8	5.2	578.0	15.1	162.2
2026	178.4[7]	484.4[7]	11.1	673.9	632.4	5.7	638.1	35.7	197.9

[1]General fund matching payments, plus certain interest-adjustment items.

[2]Other income includes recoveries of amounts reimbursed from the trust fund that are not obligations of the trust fund and other miscellaneous income. In 2008, includes an adjustment of $0.8 billion for interest earned as a result of Part A hospice costs that were misallocated to the Part B trust fund account.

[3]See footnote 2 of table III.B4.

[4]Includes costs of Peer Review Organizations from 1983 through 2001 and costs of Quality Improvement Organizations beginning in 2002.

[5]The financial status of Part B depends on both the assets and the liabilities of the trust fund (see table III.C8).

[6]Benefit payments less monies transferred from the HI trust fund for home health agency costs, as provided for by the Balanced Budget Act of 1997.

[7]Section 708 of the Social Security Act modifies the provisions for the payment of Social Security benefits when the regularly designated day falls on a Saturday, Sunday, or legal public holiday. Payment of those benefits normally due January 3, 2010 actually occurred on December 31, 2009, and payment of benefits normally due January 3, 2016 occurred on December 31, 2015. Consequently, the Part B premiums withheld from these benefits and the associated general revenue contributions were added to the Part B account on December 31, 2009 (about $14.8 billion) and December 31, 2015 (about $7.5 billion), respectively. Similarly, the payment date for those benefits normally due on January 3, 2021 will be December 31, 2020, and the payment date for those benefits normally due on January 3, 2027 will be December 31, 2026. Accordingly an estimated $14.1 billion will be added to the Part B account on

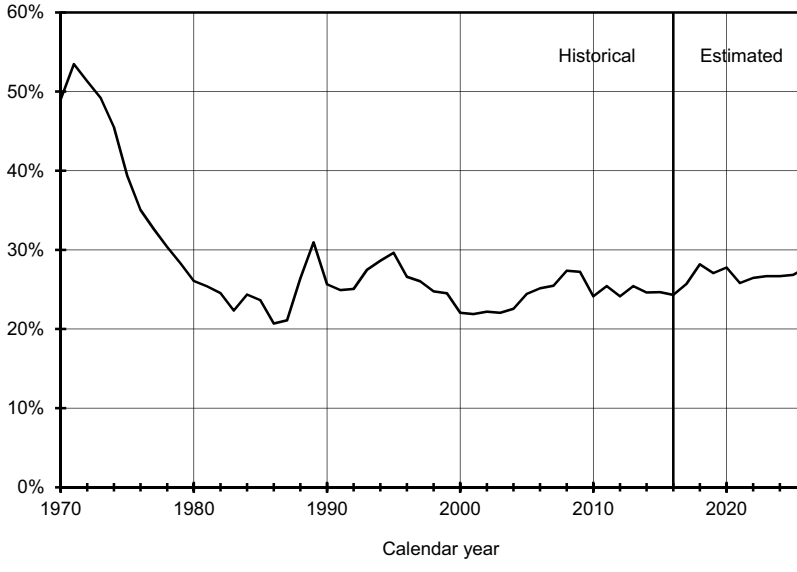
December 31, 2020, and an estimated $22.8 billion will be added to the Part B account on December 31, 2026.

Note: Totals do not necessarily equal the sums of rounded components.

As shown in table III.C4, the Part B account would decrease by the end of 2017 to an estimated $78.0 billion. The financing for 2017 was set to limit the Part B premium increase and will likely draw down Part B assets. As a result, increased premiums will likely be required in future years in order to restore Part B assets to a sufficient level.

The statutory provisions governing Part B financing have changed over time. Under current law, the standard Part B premium is set at the level of about 25 percent of average expenditures for beneficiaries aged 65 and over. The Bipartisan Budget Act of 2015 specified that the Part B premium otherwise estimated be increased by $3.00, starting with 2016, until the general revenue amount transferred in that year is repaid. In addition, Part B beneficiaries with high incomes pay a higher income-related premium. Figure III.C2 shows historical and projected ratios of premium income to Part B expenditures.

Figure III.C2.—Premium Income as a Percentage of Part B Expenditures



Beneficiary premiums are also affected by fees on the manufacturers and importers of brand-name prescription drugs that are allocated to the Part B account of the SMI trust fund. Because of these fees there is a reduction in the premium margin such that total revenues from premiums, matching general revenues, and the earmarked fees

relating to brand-name prescription drugs will equal the appropriate level needed for program financing.

The amount and rate of growth of benefit payments have caused concern for many years. Table III.C5 shows payment amounts in the aggregate, on a per capita basis, and relative to the Gross Domestic Product (GDP). Rates of growth appear historically and for the next 10 years based on the intermediate assumptions.

Aggregate Part B benefit growth has averaged 5.4 percent annually over the past 5 years. During 2016, Part B benefits grew 4.8 percent on an aggregate basis and were 1.55 percent of GDP.

Table III.C5.—Growth in Part B Benefits (Cash Basis) through December 31, 2026

Calendar year	Aggregate benefits [billions]	Percent change	Per capita benefits	Percent change	Part B benefits as a percentage of GDP
Historical data:					
1970	$2.0	5.9%	$101	3.5%	0.18%
1975	4.3	28.8	180	24.6	0.25
1980	10.6	22.1	390	19.3	0.37
1985	22.9	16.7	768	14.5	0.53
1990	42.5	10.9	1,304	9.1	0.71
1995	65.0	10.8	1,823	9.2	0.85
2000	90.6[1]	11.4	2,425	10.5	0.88
2005	147.1	9.1	3,699	7.3	1.12
2010	209.5	3.5	4,773	1.2	1.40
2011	221.5	5.7	4,931	3.3	1.43
2012	236.2	6.7	5,083	3.1	1.46
2013	243.4	3.0	5,076	−0.1	1.46
2014	261.5	7.4	5,291	4.2	1.50
2015	275.0	5.2	5,419	2.4	1.52
2016	288.1	4.8	5,532	2.1	1.55
Intermediate estimates:					
2017	307.3	6.6	5,740	3.8	1.58
2018	326.7	6.3	5,937	3.4	1.59
2019	356.7	9.2	6,297	6.1	1.65
2020	386.4	8.3	6,624	5.2	1.70
2021	419.5	8.6	6,992	5.6	1.76
2022	454.5	8.4	7,369	5.4	1.82
2023	491.3	8.1	7,756	5.2	1.88
2024	533.1	8.5	8,208	5.8	1.96
2025	569.5	6.8	8,555	4.2	2.00
2026	630.6	10.7	9,251	8.1	2.12

[1]See footnote 6 of table III.C4.

Note: Percentages are affected by economic cycles.

The Part B expenditures in 2013-2025 are affected by the sequestration of Medicare benefits required under current law. Projected Part B costs continue to increase faster than GDP in most years, as indicated in table III.C5.

The Trustees have prepared the estimates shown throughout the report using the intermediate set of assumptions. They have also prepared estimates using two alternative sets of assumptions. Table III.C6 summarizes the estimated operations of the Part B

account for all three alternatives. Section IV.B1 presents in substantial detail the assumptions underlying the intermediate estimates, as well as the assumptions used in preparing estimates under the low-cost and high-cost alternatives.

Table III.C6.—Estimated Operations of the Part B Account in the SMI Trust Fund during Calendar Years 2016-2026, under Alternative Sets of Assumptions

[Dollar amounts in billions]

Calendar year	Premiums from enrollees	Other income[1]	Total income	Total expenditures	Balance in fund at end of year	Expenditures as a percentage of GDP
Intermediate:						
2016[2]	$72.1[3]	$241.1[3]	$313.2	$293.4	$88.0	1.58%
2017	80.7	222.1	302.8	312.8	78.0	1.61
2018	94.4	259.3	353.7	333.5	98.2	1.62
2019	99.2	273.7	372.9	363.9	107.2	1.68
2020	110.1[3]	303.7[3]	413.8	394.0	127.0	1.73
2021	111.1[3]	308.3[3]	419.5	427.5	119.0	1.79
2022	123.1	346.7	469.8	462.2	126.5	1.85
2023	134.0	375.2	509.2	498.8	136.9	1.91
2024	145.3	405.9	551.3	541.1	147.1	1.99
2025	156.5	436.6	593.1	578.0	162.2	2.03
2026	178.4[3]	495.5[3]	673.9	638.1	197.9	2.15
Low-cost:						
2016[2]	72.1[3]	241.1[3]	313.2	293.4	88.0	1.58
2017	80.7	222.3	303.0	310.1	80.8	1.57
2018	95.1	259.9	355.0	331.1	104.6	1.56
2019	99.2	274.2	373.4	361.2	116.8	1.58
2020	108.2[3]	299.5[3]	407.7	388.5	136.0	1.60
2021	107.9[3]	301.6[3]	409.4	417.3	128.1	1.62
2022	118.2	334.7	453.0	447.0	134.1	1.64
2023	126.9	358.2	485.2	478.9	140.3	1.66
2024	137.2	385.6	522.8	516.0	147.1	1.69
2025	145.8	409.7	555.5	547.4	155.2	1.70
2026	166.8[3]	465.3[3]	632.1	599.8	187.4	1.76
High-cost:						
2016[2]	72.1[3]	241.1[3]	313.2	293.4	88.0	1.58
2017	80.7	222.0	302.7	314.6	76.0	1.64
2018	92.8	255.9	348.7	330.3	94.5	1.69
2019	99.0	272.2	371.2	359.7	106.0	1.79
2020	109.9[3]	302.5[3]	412.4	392.3	126.1	1.88
2021	112.1[3]	308.9[3]	421.0	429.1	118.0	1.98
2022	125.7	352.7	478.4	468.1	128.4	2.08
2023	137.6	384.2	521.8	510.3	139.9	2.20
2024	150.6	419.5	570.1	558.8	151.2	2.33
2025	163.5	454.8	618.4	601.9	167.7	2.43
2026	188.1[3]	520.7[3]	708.9	669.8	206.8	2.62

[1]Other income contains government contributions, fees on manufacturers and importers of brand-name prescription drugs, and interest.
[2]Figures for 2016 represent actual experience.
[3]See footnote 8 of table III.C4.

Notes: 1. Totals do not necessarily equal the sums of rounded components.
2. Percentages are affected by economic cycles.

These alternatives provide two possible Part B scenarios but represent a narrow range of possible outcomes for total expenditures. Given the considerable variation in future demographic, economic, and healthcare-usage factors, actual Part B experience could easily fall outside of this range. The low- and high-cost scenarios in this year's

report result in a narrower dollar range than shown prior to the 2014 report, due to a change in the alternative assumptions beginning with that report.[49] The GDP assumptions for the alternative scenarios are also affected by the assumption change. Therefore, spending as a percent of GDP provides better insight into the variability of spending than the nominal dollar amounts, as shown in table III.C6.

The alternative projections shown in table III.C6 illustrate two important aspects of the financial operations of the Part B account:

- Despite the differing assumptions underlying the three alternatives, the balance between Part B income and expenditures remains relatively stable. This result occurs because the Secretary of Health and Human Services annually reestablishes the premiums and general revenue contributions underlying Part B financing to cover each year's anticipated incurred benefit costs and other expenditures and then increases these amounts by a margin that reflects the uncertainty of the projection. Thus, Part B income automatically tracks Part B expenditures fairly closely, regardless of the specific economic and other conditions.

- As a result of the close matching of income and expenditures described above, projected account assets show similar, stable patterns of change under all three sets of assumptions.

Adequacy of Part B Financing Established for Calendar Year 2017

The traditional concept of financial adequacy, as it applies to Part B, is closely related to the concept as it applies to many private group insurance plans. Part B is somewhat similar to private yearly renewable term insurance, with financing established each year based on estimated costs for the year. For Part B, premium income paid by the enrollees and general revenues contributed by the Federal Government provide financing. As with private plans, the income during a 12-month period for which financing is being established should be sufficient to cover the costs of services expected to be rendered during that period (including associated administrative costs), even though payment for some of these services will not occur until after the period closes. The portion of income required to cover those benefits not paid until after the end of the year is added to the

[49]Starting with the 2014 report, the Trustees' alternative CPI assumptions are reversed compared with those in previous reports, so that the high-cost assumptions are now the low-cost assumptions, and vice versa. Inflation rates are now ordered across alternatives according to their effect on the OASDI actuarial balance. This change resulted in a narrow range of impacts.

account; thus assets in the account at any time should not be less than the costs of the benefits and the administrative expenses incurred but not yet paid.

Since the Secretary of Health and Human Services establishes the income per enrollee (premium plus government contribution) prospectively each year, it is subject to projection error. Additionally, legislation enacted after the financing has been established, but effective for the period for which financing has been set, may affect costs. Account assets, therefore, need to be maintained at a level that is adequate to cover not only the value of incurred-but-unpaid expenses but also a reasonable degree of variation between actual and projected costs (in case actual costs exceed projected).

The Trustees traditionally evaluate the actuarial status or financial adequacy of the Part B account over the period for which the enrollee premium rates and level of general revenue financing have been established. The primary tests are that (i) the assets and income for years for which financing has been established should be sufficient to meet the projected benefits and associated administrative expenses incurred for that period; and (ii) the assets should be sufficient to cover projected liabilities for benefits that have not yet been paid as of the end of the period. If Part B does not meet these adequacy tests, it can still continue to operate if the account remains at a level adequate to permit the payment of claims as presented. However, to protect against the possibility that costs will be higher than assumed, assets should be sufficient to include contingency levels that cover a reasonable degree of variation between actual and projected costs.

As noted above, the tests of financial adequacy for Part B rely on the incurred experience of the account, including a liability for the costs of services performed in a particular year but not yet paid in that year. Table III.C7 shows the estimated transactions of the account on an incurred basis. Readers should view the incurred experience as an estimate, even for historical years.[50]

[50]Part B experience is substantially more difficult to determine on an incurred basis than on a cash basis. For some services, reporting of payment occurs only on a cash basis, and it is necessary to infer the incurred experience from the cash payment information. Moreover, for recent time periods the tabulations of bills are incomplete due to normal processing time lags.

Table III.C7.—Estimated Part B Income and Expenditures (Incurred Basis) for Financing Periods through December 31, 2017

[In millions]

Financing period	Income: Premium income	Income: General revenue	Income: Interest and other	Income: Total	Expenditures: Benefit payments	Expenditures: Administrative expenses	Expenditures: Total	Net operations in year
Historical data:								
12-month period ending June 30,								
1970	$936	$936	$12	$1,884	$1,928	$213	$2,141	−$257
1975	1,887	2,396	105	4,388	3,957	438	4,395	−7
1980	2,823	6,627	421	9,871	9,840	645	10,485	−614
Calendar year								
1985	5,613	18,243	1,248	25,104	22,750	986	23,736	1,368
1990	11,320	33,035	1,558	45,913	42,577	1,541	44,118	1,795
1995	19,717	45,743	1,739	67,199	64,923	1,607	66,531	668
2000	20,555	65,898	3,450	89,903	91,059[1]	1,770	92,828	−2,925
2005	37,535	118,091	1,365	156,992	151,430	3,185	154,615	2,376
2010	55,580	163,660	3,281	222,520	212,350	3,153	215,502	7,018
2011	57,514	170,224	5,867	233,605	222,872	3,609	226,481	7,124
2012	58,024	163,827	5,164	227,015	236,748	3,947	240,695	−13,679
2013	63,085	185,894	6,068	255,046	245,225	3,280	248,505	6,542
2014	65,644	188,398	5,706	259,747	263,082	3,954	267,035	−7,288
2015	67,515	197,931	5,727	271,172	277,615	3,145	280,760	−9,588
2016	73,986	241,580	5,498	321,064	292,417	3,909	296,326	24,738
Intermediate estimates:								
2017	80,722	215,463	6,641	302,826	310,813	3,106	313,918	−11,092

[1]See footnote 6 of table III.C4.

Estimates of the liability amounts for benefits incurred but unpaid as of the end of each financing period, and of the administrative expenses related to processing these benefits, appear in table III.C8. In some years, account assets have not been as large as liabilities. Nonetheless, the fund has remained positive, which has allowed payment of all claims.

Table III.C8.—Summary of Estimated Part B Assets and Liabilities as of the End of the Financing Period, for Periods through December 31, 2017

[Dollar amounts in millions]

	Balance in trust fund	General revenue due but unpaid	Total assets	Benefits incurred but unpaid	Administrative costs incurred but unpaid	Total liabilities	Excess of assets over liabilities	Ratio[1]
Historical data:								
As of June 30,								
1970	$57	$15	$72	$567	—	$567	−$495	−0.21
1975	1,424	67	1,491	1,257	$14	1,271	—	0.04
1980	4,657	—	4,657	2,621	188	2,809	1,848	0.15
As of December 31,								
1985	10,924	—	10,924	3,142	−38	3,104	7,820	0.28
1990	15,482	—	15,482	4,060	20	4,080	11,402	0.24
1995	13,130	6,893[2]	20,023	4,298	−214	4,084	15,939	0.23
2000	44,027	—	44,027	8,715	−285	8,430	35,597	0.35
2005	24,008	—	24,008	13,556	0	13,556	10,452	0.06
2010	71,435	—	71,435	18,882	0	18,882	52,553	0.23
2011	79,882	—	79,882	19,928	0	19,928	59,954	0.25
2012	68,093	—	68,093	20,062	0	20,062	48,031	0.20
2013	74,204	—	74,204	21,624	0	21,624	52,580	0.20
2014	68,074	—	68,074	22,797	0	22,797	45,277	0.16
2015	68,157	—	68,157	24,712	0	24,712	43,445	0.15
2016	87,964	—	87,964	27,599	0	27,599	60,364	0.19
Intermediate estimates:								
2017	78,017	—	78,017	28,750	0	28,750	49,267	0.15

[1]Ratio of the excess of assets over liabilities to the following year's total incurred expenditures.

[2]This amount includes both the principal of $6,736 million and the accumulated interest through December 31, 1995 for the shortfall in the fiscal year 1995 appropriation for government contributions. Normally, this transfer would have occurred on December 31, 1995, and the trust fund balance would have reflected it. However, due to absence of funding, there was a delay in the transfer of the principal and the appropriate interest until March 1, 1996.

The amount of assets minus liabilities, compared with the estimated incurred expenditures for the following calendar year, forms a relative measure of the Part B account's financial status. The last column in table III.C8 shows such ratios for past years and the estimated ratio at the end of 2016. Actuarial analysis has indicated that a ratio of roughly 15-20 percent is sufficient to protect against unforeseen contingencies, such as unusually large increases in Part B expenditures.

The Secretary of Health and Human Services established Part B financing through December 31, 2017. Estimated incurred expenditures exceed estimated income in 2017, as shown in table III.C7. The excess of assets over liabilities decreases by an estimated $11.1 billion by the end of December 2017, as indicated in table III.C8. This decrease occurs because 2017 Part B financing was set to limit the premium increase for those not held harmless by establishing a contingency reserve below the estimated minimally financially adequate level. Future financing rates will likely need to be higher in order to restore the contingency reserve to a fully adequate level.

Since the financing rates are set prospectively, variations between assumed cost increases and subsequent actual experience could affect the actuarial status of the Part B account. To test the status of the account under varying assumptions, the Trustees prepared a lower-growth-range projection and an upper-growth-range projection by varying the key assumptions for 2016 and 2017. These two alternative sets of assumptions provide a range of financial outcomes within which one might reasonably expect the actual experience of Part B to fall. The Trustees determined the values for the lower- and upper-growth-range assumptions from a statistical analysis of the historical variation in the respective increase factors.

The methods underlying this sensitivity analysis are fundamentally different from the methods underlying the low-cost and high-cost projections discussed previously in this section. This sensitivity analysis is based on stochastic modeling and is shown for the period for which the financing has been established (through 2017 for this report), whereas the low-cost and high-cost projections illustrate the financial impact of slower or faster growth trends throughout the entire short-range (10-year) projection period.

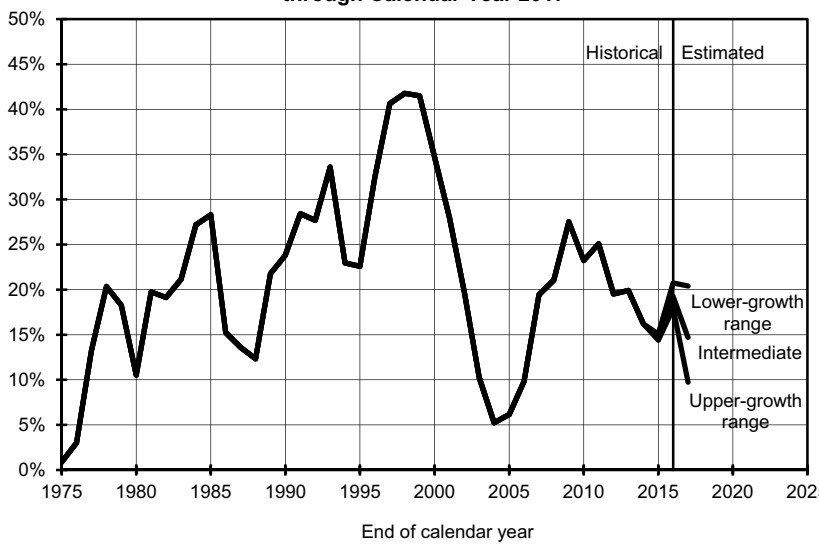
Table III.C9 indicates that, under the lower-growth-range scenario, account assets would exceed liabilities at the end of December 2017 by a margin equivalent to 20.4 percent of the following year's incurred expenditures. Under the upper-growth-range scenario, account assets would still exceed liabilities, but by a margin of 9.7 percent of incurred expenditures in 2017. Under the upper-growth-range scenario, future financing rates would need to increase to provide a fully adequate margin for adverse contingencies. Figure III.C3 shows the reserve ratio for historical years and for 2017 under the three cost growth scenarios.

Table III.C9.—Actuarial Status of the Part B Account in the SMI Trust Fund under Three Cost Sensitivity Scenarios for Financing Periods through December 31, 2017

As of December 31,	2015[1]	2016	2017
Intermediate scenario:			
Actuarial status (in millions)			
Assets	$68,157	$87,964	$78,017
Liabilities	24,712	27,599	28,750
Assets less liabilities	43,445	60,364	49,267
Ratio[2]	14.7%	19.2%	14.7%
Lower-range scenario:			
Actuarial status (in millions)			
Assets	$68,157	$87,964	$89,347
Liabilities	24,712	26,889	27,524
Assets less liabilities	43,445	61,074	61,823
Ratio[2]	15.1%	20.7%	20.4%
Upper-range scenario:			
Actuarial status (in millions)			
Assets	$68,157	$87,964	$66,039
Liabilities	24,712	28,240	30,051
Assets less liabilities	43,445	59,724	35,988
Ratio[2]	14.4%	17.9%	9.7%

[1]About $7,544 million of 2016 income was received by the Part B account of the SMI trust fund in 2015. The assets, assets less liabilities, and ratio for 2015 all reflect the early receipt of income.
[2]Ratio of assets less liabilities at the end of the year to the total incurred expenditures during the following year, expressed as a percent.

Figure III.C3.—Actuarial Status of the Part B Account in the SMI Trust Fund through Calendar Year 2017



Note: The Trustees measure the actuarial status of the Part B account in the SMI trust fund by the ratio of (i) assets minus liabilities at the end of the year to (ii) the following year's incurred expenditures.

Based on the test described above, the Trustees conclude that the financing established for the Part B account for calendar year 2017 is adequate to cover 2017 expected expenditures.

3. Long-Range Estimates

Section III.C2 presented the expected operations of the Part B account over the next 10 years. This section examines the long-range expenditures of the account under the intermediate assumptions. Due to its automatic financing provisions, the Trustees expect the Part B account to be adequately financed into the indefinite future and so have not conducted a long-range analysis using high-cost and low-cost assumptions.

Table III.C10 shows the estimated Part B incurred expenditures under the intermediate assumptions expressed as a percentage of GDP for selected years over the calendar-year period 2016-2091.[51] (The intermediate assumptions are discussed in sections II.C and IV.D.)

Table III.C10.—Part B Expenditures (Incurred Basis) as a Percentage of the Gross Domestic Product[1]

Calendar year	Part B expenditures as a percentage of GDP
2016	1.60%
2017	1.61
2018	1.63
2019	1.69
2020	1.74
2021	1.80
2022	1.86
2023	1.92
2024	2.00
2025	2.05
2026	2.16
2030	2.39
2035	2.59
2040	2.66
2045	2.64
2050	2.62
2055	2.60
2060	2.61
2065	2.61
2070	2.62
2075	2.62
2080	2.59
2085	2.56
2090	2.55
2091	2.55

[1]Expenditures are the sum of benefit payments and administrative expenses.

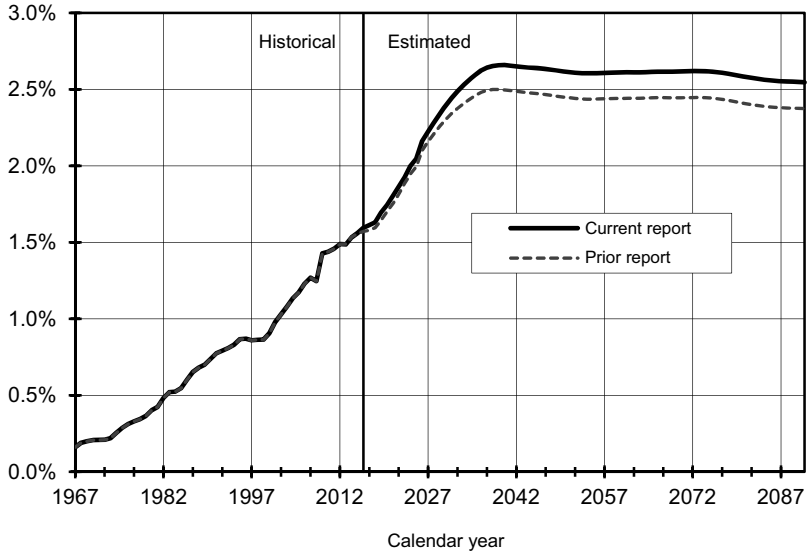
Note: Percentages are affected by economic cycles.

[51]These estimated incurred expenditures are for benefit payments and administrative expenses combined, unlike the values in table III.C5, which express only benefit payments on a cash basis as a percentage of GDP.

Under the intermediate assumptions, incurred Part B expenditures as a percentage of GDP increase from 1.60 percent in 2016 and reach 2.66 percent in 2041 before declining to 2.55 percent in 2091. (Part B expenditures instead increase to 4.24 percent in 2091 under the illustrative alternative scenario.)

Figure III.C4 compares the year-by-year Part B expenditures as a percentage of GDP for the 2017 report with the projections from the 2016 report. Both reports show a projected decline in the share of Part B spending as a percentage of GDP due to legislated updates, including those for physician payments. The expenditures in this year's report are slightly higher than last year's mostly due to higher-than-expected actual spending for outpatient hospital services and physician-administered drugs in 2016 and a methodological change resulting in higher projected drug spending for patients with end-stage renal disease.

Figure III.C4.—Comparison of Part B Projections as a Percentage of the Gross Domestic Product: Current versus Prior Year's Reports



Note: Percentages are affected by economic cycles.

D. PART D FINANCIAL STATUS

This section presents actual operations of the Part D account in the SMI trust fund in 2016 and Part D projections for the next 75 years. Section III.D1 discusses Part D financial results for 2016, and

sections III.D2 and III.D3 discuss the short-range Part D projections and the long-range projections, respectively. The projections shown in sections III.D2 and III.D3 assume no changes will occur in the statutory provisions and regulations under which Part D now operates.

1. Financial Operations in Calendar Year 2016

The total assets of the account amounted to approximately $1.3 billion on December 31, 2015. During calendar year 2016, total Part D expenditures were approximately $100.0 billion. General revenue was provided on an as-needed basis to cover the portion of these expenditures supported through Medicare subsidies. Total Part D receipts were $106.2 billion. As a result, total assets in the Part D account increased to $7.6 billion as of December 31, 2016.

Table III.D1 presents a statement of the revenue and expenditures of the Part D account of the SMI trust fund in calendar year 2016, and of its assets at the beginning and end of the calendar year.

Table III.D1—Statement of Operations of the Part D Account in the SMI Trust Fund during Calendar Year 2016

[In thousands]

Total assets of the Part D account in the trust fund, beginning of period		$1,313,354
Revenue:		
Premiums from enrollees:		
Premiums deducted from Social Security benefits	$4,497,712	
Premiums paid directly to plans[1]	9,301,248	
Total premiums		13,798,960
Government contributions:		
Prescription drug benefits	81,899,511	
Prescription drug administrative expenses	463,448	
Total government contributions		82,362,959
Payments from States		10,038,578
Interest on investments		40,960
Interfund interest payments[2]		−1,766
Total revenue		$106,239,692
Expenditures:		
Part D benefit payments[1]		$99,493,537
Part D administrative expenses		461,682
Total expenditures		$99,955,219
Net addition to the trust fund		6,284,472
Total assets of the Part D account in the trust fund, end of period		$7,597,826

[1]Premiums paid directly to plans are not displayed on Treasury statements and are estimated. These premiums have been added to the benefit payments reported on the Treasury statement to obtain an estimate of total Part D benefits. Direct data on such benefit amounts are not yet available.

[2]Reflects interest adjustments on the reallocation of administrative expenses among the Medicare trust funds, the OASDI trust funds, and the general fund of the Treasury. Estimated payments are made from the trust funds and then are reconciled, with interest, the next year when the actual costs are known. A positive figure represents a transfer to the Part D account in the SMI trust fund from the other trust funds. A negative figure represents a transfer from the Part D account in the SMI trust fund to the other funds.

Note: Totals do not necessarily equal the sums of rounded components.

a. Revenues

The major sources of revenue for the Part D account are (i) contributions of the Federal Government authorized to be apportioned and transferred from the general fund of the Treasury; (ii) premiums paid by eligible persons who voluntarily enroll; and (iii) contributions from the States.

Of the total Part D revenue, $4.5 billion represented premium amounts withheld from Social Security benefits or other Federal benefit payments. Total premium payments, including those paid directly to the Part D plans, amounted to an estimated $13.8 billion or 13.0 percent of total revenue.

In calendar year 2016, contributions received from the general fund of the Treasury amounted to $82.4 billion, which accounted for 77.5 percent of total revenue. The payments from the States were $10.0 billion.

Another source of Part D revenue is interest received on investments held by the Part D account. Since this account holds a very low amount of assets, and only for brief periods of time, the interest on the investments of the account in calendar year 2016 was negligible ($41 million).

b. Expenditures

Part D expenditures include both the costs of prescription drug benefits provided by Part D plans to enrollees and Medicare payments to retiree drug subsidy (RDS) plans on behalf of beneficiaries who obtain their primary drug coverage through such plans. Unlike Parts A and B of Medicare, the Part D account in the SMI trust fund does not directly support all Part D expenditures. In particular, enrollee premiums that are paid directly to Part D plans, and thus do not flow through the Part D account, finance a portion of these expenditures. However, these premium amounts are included in the Part D account operations (both income and expenditures) presented in this report. Total expenditures are characterized as either benefits (representing the gross cost of enrollees' prescription drug coverage plus RDS amounts) or Federal administrative expenses.

All expenses incurred by the Department of Health and Human Services, the Social Security Administration, and the Department of the Treasury in administering Part D are charged to the account. Such administrative duties include making payments to Part D plans, fraud

and abuse control activities, and experiments and demonstration projects designed to improve the quality, efficiency, and economy of health care services.

In addition, Congress has authorized expenditures from the trust funds for construction, rental and lease, or purchase contracts of office buildings and related facilities for use in connection with the administration of Part D. The account expenditures include such costs. However, the statement of Part D assets presented in this report does not carry the net worth of facilities and other fixed capital assets, because the value of fixed capital assets does not represent funds available for benefit or administrative expenditures and is not, therefore, pertinent in assessing the actuarial status of the funds.

Of the $100.0 billion in total Part D expenditures, $99.5 billion represented benefits, as defined above, and the remaining $0.5 billion was for Federal administrative expenses. The Medicare direct premium subsidy and reinsurance subsidy, together with enrollee premiums, implicitly cover administrative expenses incurred by Part D plans.

c. Actual experience versus prior estimates

Table III.D2 compares the actual experience in calendar year 2016 with the estimates presented in the 2015 and 2016 annual reports. A number of factors can contribute to differences between estimates and subsequent actual experience. In particular, actual values for key economic and other variables can differ from assumed levels, lawmakers may adopt legislative and regulatory changes after a report's preparation, and new, high-impact drugs can enter the market.

Compared to the 2016 report, actual premiums for calendar year 2016 were about the same as projected. Government contributions and benefit payments were lower than projected last year primarily because actual manufacturer rebates for 2015 were higher than projected. The actual State transfer was higher than projected in last year's report because the number of dual-eligible low-income beneficiaries was higher.

Compared to the 2015 report, actual premiums for 2016 were 11 percent lower than projected primarily because the projected risk scores were lower than those from the plan year 2016 bids. The assumed drug benefits for 2016 shown in the 2015 report were higher than the plans estimated in their plan year 2016 bid submissions,

mostly due to higher manufacturer rebates projected in the plan bids. However, because the 2015 reinsurance reconciliation amounts paid in 2016 were higher than projected in the 2015 report as a result of higher hepatitis C drug spending, the actual 2016 benefit payments were only slightly below the projected drug benefits in the 2015 report. The actual government contributions were higher than projected due to the new policy to transfer amounts to the Part D account 5 business days before the benefit payments to the plans. The actual State transfer was higher than projected in the 2015 report because the number of dual-eligible low-income beneficiaries was slightly higher.

Table III.D2.—Comparison of Actual and Estimated Operations of the Part D Account in the SMI Trust Fund, Calendar Year 2016

[Dollar amounts in millions]

		Comparison of actual experience with estimates for calendar year 2016 published in:			
		2016 report		2015 report	
Item	Actual amount	Estimated amount[1]	Actual as a percentage of estimate	Estimated amount[1]	Actual as a percentage of estimate
Premiums from enrollees	$13,799	$13,841	100%	$15,503	89%
State transfers	10,039	9,631	104	9,792	103
Government contributions	82,363	84,865	97	75,771	109
Benefit payments	99,494	102,544	97	100,517	99

[1]Under the intermediate assumptions.

d. Assets

The Department of the Treasury invests the portion of the Part D account not needed to meet current expenditures for benefits and administration in interest-bearing obligations of the U.S. Government.

The Social Security Act authorizes the issuance of special public-debt obligations for purchase exclusively by the account. The law requires that these special public-debt obligations shall bear interest at a rate based on the average market yield (computed on the basis of market quotations as of the end of the calendar month immediately preceding the date of such issue) for all marketable interest-bearing obligations of the United States forming a part of the public debt that are not due or callable until after 4 years from the end of that month. Since the inception of the SMI trust fund, the Department of the Treasury has always invested the assets in special public-debt obligations.[52] Table V.H10, presented in appendix H, shows the assets of the SMI trust fund (Parts B and D) at the end of fiscal years 2015 and 2016.

[52]The Department of the Treasury may also make investments in obligations guaranteed for both principal and interest by the United States, including certain federally sponsored agency obligations.

As explained in section III.D2, the flexible apportionment of general revenues for Part D eliminates the need to maintain a contingency reserve. As a result, Part D assets are very low and are held only briefly in anticipation of immediate expenditures.

2. 10-Year Actuarial Estimates (2017-2026)

Section III.D2 provides detailed information concerning the short-range financial status of the Part D account, including projected annual income, outgo, differences between income and outgo, and trust fund balances. The projected future operations of the Part D account are based on the Trustees' economic and demographic assumptions, as detailed in the OASDI Trustees Report, as well as other assumptions unique to Part D. Section IV.B2 presents an explanation of the effects of the Trustees' intermediate assumptions and other assumptions unique to Part D on the estimates in this report. This section presents estimates of the trust fund's operations and financial status for the next 10 years. Section III.D3 discusses the long-range actuarial status of the trust fund.

Generally, the income to the Part D account includes the beneficiary premiums described above and transfers from the general fund of the Treasury to cover each year's incurred benefit costs and other expenditures. The language that has generally been included in the Part D appropriation provides, without further Congressional action, resources for benefit payments under the Part D drug benefit program on an as-needed basis. The transfers from the Treasury reflect the direct premium subsidy, amounts of reinsurance payments, RDS amounts, low-income subsidies, net risk-sharing payments, administrative expenses, and advanced discount payments. This income requirement is reduced by the anticipated State transfers for the full-benefit dually eligible beneficiaries who used to be covered under Medicaid.

Until 2015, actual cash transfers from the Treasury were made on the day the benefit payments to plans were due, typically the first business day of a month, causing the Part D account balance at the end of a month to include only a modest amount from the State transfers to the account after the benefit payments were made. A new policy was developed prior to the end of the 2015 fiscal year[53] to transfer amounts from the Treasury into the account 5 business days before the benefit

[53]The new policy was applied prior to the October 2015 plan payment and again prior to the February 2016 plan payment, and it has been consistently applied after February 2016.

payments to the plans. As a result, the Part D account includes a more substantial balance at the end of most months to reflect this policy.

The beneficiary premiums and direct subsidy rate are calculated based on the national average bid amounts and defined prior to each year's operations. The average basic premium constitutes 25.5 percent of the expected total plan costs for basic Part D coverage. Beginning in 2011, beneficiaries with modified adjusted gross incomes exceeding a specified threshold pay income-related premiums in addition to the premiums charged by the plans in which the individuals have enrolled. The extra premiums are credited to the Part D trust fund account and reduce the general fund financing amounts. Starting in 2011, the drug manufacturers provide a 50-percent ingredient cost discount for brand-name drugs in the coverage gap that reduces beneficiary out-of-pocket expenses. Medicare Part D pays advanced discount payments prospectively to the non-employer Part D plans and will be reimbursed for these amounts once the plans receive the discounts from the drug manufacturers.

Expenditures from the account include the premiums withheld from beneficiaries' Social Security benefits and transferred to the private drug plans, the direct premium subsidy payments, reinsurance payments, RDS amounts, low-income subsidy payments, net risk-sharing payments, administrative expenses, and advanced discount payments. As noted previously, the Trustees supplement these expenditures to include the amount of enrollee premiums paid directly to Part D plans, thereby providing an estimate of total Part D benefit payments and other expenditures.

Part D expenditures on direct premium subsidy payments, RDS amounts, advanced discount payments, and administrative expenses are affected by the sequestration of Medicare expenditures required by current law. Reinsurance, low-income cost-sharing subsidy amounts, and net risk-sharing payments are not affected. The sequestration reduces benefit payments by 2 percent from April 1, 2013 through March 31, 2025 and by 4 percent from April 1, 2025 through September 30, 2025. Due to sequestration, non-salary administrative expenses are reduced by an estimated 5 percent from March 1, 2013 through September 30, 2025.

Table III.D3 shows the estimated operations of the Part D account under the intermediate assumptions on a calendar-year basis through 2026.

Table III.D3.—Operations of the Part D Account in the SMI Trust Fund (Cash Basis) during Calendar Years 2004-2026

[In billions]

	Income					Expenditures			Account	
Calendar year	Premium income[1]	General revenue[2]	Transfers from States[3]	Interest and other	Total	Benefit payments[4]	Administrative expense	Total	Net change	Balance at end of year[5]
Historical data:										
2004	—	$0.4	—	—	$0.4	$0.4	—	$0.4	—	—
2005	—	1.1	—	—	1.1	1.1	—	1.1	—	—
2006	$3.5	39.2	$5.5	$0.0	48.2	47.1	$0.3	47.4	$0.8	$0.8
2007	4.1	38.8	6.9	0.0	49.7	48.8	0.9	49.7	0.0	0.8
2008	5.0	37.3	7.1	0.0	49.4	49.0	0.3	49.3	0.1	0.9
2009	6.3[6]	47.1	7.6	0.0	61.0	60.5	0.3	60.8	0.1	1.1
2010	6.5[6]	51.1	4.0	0.0	61.7	61.7	0.4	62.1	−0.4	0.7
2011	7.7	52.6	7.1	0.0	67.4	66.7	0.4	67.1	0.3	1.0
2012	8.3	50.1	8.4	0.0	66.9	66.5	0.4	66.9	0.0	1.0
2013	9.9	51.0	8.8	0.0	69.7	69.3	0.4	69.7	−0.0	1.0
2014	11.4	58.1	8.7	0.0	78.2	77.7	0.4	78.1	0.1	1.1
2015	12.8[6]	68.4	8.9	0.0	90.0	89.5	0.3	89.8	0.3	1.3
2016	13.8[6]	82.4	10.0	0.0	106.2	99.5	0.5	100.0	6.3	7.6
Intermediate estimates:										
2017	15.4	71.9	11.4	0.0	98.7	98.8	0.5	99.2	−0.5	7.1
2018	17.0	74.4	12.0	0.0	103.4	102.3	0.5	102.8	0.6	7.7
2019	19.3	84.4	12.9	0.0	116.6	115.3	0.5	115.8	0.8	8.5
2020	21.6[6]	91.4	14.1	0.0	127.1	125.9	0.5	126.4	0.7	9.3
2021	22.8[6]	98.6	15.4	0.0	136.8	135.5	0.5	136.0	0.8	10.0
2022	25.0	105.5	16.7	0.0	147.3	146.0	0.6	146.5	0.8	10.8
2023	27.0	112.9	18.1	0.0	158.0	156.7	0.6	157.2	0.8	11.6
2024	29.1	121.4	19.5	0.0	170.0	168.6	0.6	169.2	0.9	12.4
2025	31.2	128.9	21.0	0.0	181.2	179.7	0.6	180.3	0.9	13.3
2026	34.1[6]	138.4	22.5	0.0	195.1	193.4	0.7	194.1	1.0	14.3

[1]Premiums include both amounts withheld from Social Security benefits or other Federal payments and those paid directly to Part D plans.

[2]Includes, net of transfers from States, all government transfers required to fund benefit payments, administrative expenses, and State expenses for making low-income eligibility determinations.

[3]Payments from States with respect to the Federal assumption of Medicaid responsibility for drug expenditures for full-benefit dually eligible individuals.

[4]Includes payments to Part D plans, payments to retiree drug subsidy plans, payments to States for making low-income eligibility determinations, Part D drug premiums collected from beneficiaries, and transfers to Medicare Advantage plans and private drug plans. Includes amounts for the Transitional Assistance program of $0.4, $1.0, and $0.1 billion in 2004-2006, respectively.

[5]See text concerning nature of general revenue appropriations process and implications for contingency reserve assets.

[6]Section 708 of the Social Security Act modifies the provisions for the payment of Social Security benefits when the regularly designated day falls on a Saturday, Sunday, or legal public holiday. Payment of those benefits normally due January 3, 2010 actually occurred on December 31, 2009, and payment of benefits normally due January 3, 2016 occurred on December 31, 2015. Consequently, the Part D premiums withheld from these benefits were added to the Part D account on December 31, 2009 (about $0.2 billion) and December 31, 2015 (about $0.2 billion), respectively. Similarly, the expected payment date for those benefits normally due January 3, 2021 is December 31, 2020, and the expected payment date for those benefits normally due January 3, 2027 is December 31, 2026. Accordingly an estimated $0.3 billion will be added to the Part D account on December 31, 2020, and an estimated $0.5 billion will be added to the Part D account on December 31, 2026.

Note: Totals do not necessarily equal the sums of rounded components.

Table III.D4 shows prescription drug payment amounts in the aggregate, on a per capita basis, and relative to the Gross Domestic Product (GDP). It also shows rates of growth for the next 10 years based on the intermediate set of assumptions.

Over the past 10 years, Part D benefit payments have increased by an annual rate of 7.8 percent in aggregate and by 3.0 percent on a per enrollee basis. These results reflect the rapid growth in enrollment as the new program began, together with a substantial increase in the proportion of prescriptions filled with low-cost generic drugs and patent expiration for certain major drugs in 2012.

For 2016, per capita benefits increased at a high rate because of price increases for brand-name drugs and the significant amount of 2015 reconciliation payments by Medicare for the higher-than-expected use of expensive hepatitis C drugs. However, these per capita benefits are projected to decrease in 2017 mainly due to reduced reconciliation payments from Part D to plans in 2017, which are primarily attributable to lower utilization of hepatitis C drugs in 2016.

Table III.D4.—Growth in Part D Benefits (Cash Basis) through December 31, 2026

Calendar year	Aggregate benefits [billions]	Percent change	Per capita benefits	Percent change	Part D benefits as a percentage of GDP
Historical data:					
2004	$0.4	—	$362	—	0.00%
2005	1.1	—	596	—	0.01
2006	47.1	—	1,708	—	0.34
2007	48.8	3.7%	1,556	−8.9%	0.34
2008	49.0	0.4	1,504	−3.3	0.33
2009	60.5	23.4	1,798	19.6	0.42
2010	61.7	2.0	1,775	−1.3	0.41
2011	66.7	8.1	1,868	5.3	0.43
2012	66.5	−0.4	1,776	−5.0	0.41
2013	69.3	4.2	1,772	−0.2	0.42
2014	77.7	12.1	1,919	8.3	0.45
2015	89.5	15.1	2,140	11.5	0.50
2016	99.5	11.2	2,304	7.7	0.54
Intermediate estimates:					
2017	98.8	−0.7	2,221	−3.6	0.51
2018	102.3	3.6	2,220	−0.0	0.50
2019	115.3	12.7	2,411	8.6	0.53
2020	125.9	9.2	2,557	6.1	0.55
2021	135.5	7.6	2,674	4.6	0.57
2022	146.0	7.7	2,801	4.7	0.58
2023	156.7	7.3	2,927	4.5	0.60
2024	168.6	7.6	3,070	4.9	0.62
2025	179.7	6.6	3,191	3.9	0.63
2026	193.4	7.7	3,354	5.1	0.65

Note: Percentages are affected by economic cycles.

In the future, the average per capita drug benefit growth rate is expected to exceed the rate of increase in other categories of medical spending. The relatively rapid projected aggregate benefit growth reflects the expected per capita cost increase and projected increases in Part D enrollment. Over the next 10 years, aggregate benefits are projected to increase at 6.9 percent annually, on average, while the average per capita rate of growth is 3.8 percent, as shown in table III.D4. Compared with last year's report, these growth rates are

lower mainly due to a significant increase in drug manufacturer rebates and lower utilization of hepatitis C drugs.

The payment structure of the Part D program causes the somewhat volatile pattern of annual growth rates; prospective payments to the plans are made based on the plan bids and then are reconciled with actual prescription drug expenditures after the end of the year. For example, since actual prescription drug expenditures in 2006 were substantially less than the plan bids, the plans owed the Part D program over $4 billion in the form of risk-sharing returns and reimbursement of overpayments for reinsurance and low-income subsidy capitation amounts. These reconciliation payments reduced Part D spending in 2007 and 2008, resulting in per capita drug cost growth rates that were lower than normal for those years. In 2014 and 2015, spending exceeded plan bids due to increased spending on high-cost hepatitis C drugs, and accordingly about $11 billion and $10 billion in reconciliation payments were paid by Part D in 2015 and 2016, respectively. For 2016, the plans increased their bids to better reflect the hepatitis C drugs, and as a result reconciliation payments are expected to be significantly lower, with about $2 billion projected to be paid by Part D in 2017.

Legislation and policy also contribute to the volatility of the annual growth rates. For example, the ACA will close the coverage gap from 2012 through 2020, a factor that will increase plan benefits and result in higher Part D expenditures and premiums. Additionally, a new policy to start paying advanced reinsurance amounts to the employer/union-only group waiver plans in 2017 will affect the timing of these payments, which were previously provided exclusively through the reconciliation process.

The Trustees have also prepared estimates using two alternative sets of assumptions. Table III.D5 summarizes the estimated operations of the Part D account for all three alternatives. Section IV.B2 presents in substantial detail the assumptions underlying the intermediate estimates, as well as the assumptions used in preparing estimates under the low-cost and high-cost alternatives.

Table III.D5.—Estimated Operations of the Part D Account in the SMI Trust Fund during Calendar Years 2016-2026, under Alternative Sets of Assumptions

[Dollar amounts in billions]

Calendar year	Premiums from enrollees	Other income[1]	Total income	Total expenditures	Balance in account at end of year	Expenditures as a percentage of GDP
Intermediate:						
2016[2]	$13.8[3]	$92.4	$106.2	$100.0	$7.6	0.54%
2017	15.4	83.3	98.7	99.2	7.1	0.51
2018	17.0	86.4	103.4	102.8	7.7	0.50
2019	19.3	97.3	116.6	115.8	8.5	0.54
2020	21.6[3]	105.6	127.1	126.4	9.3	0.56
2021	22.8[3]	114.0	136.8	136.0	10.0	0.57
2022	25.0	122.3	147.3	146.5	10.8	0.59
2023	27.0	131.0	158.0	157.2	11.6	0.60
2024	29.1	140.9	170.0	169.2	12.4	0.62
2025	31.2	150.0	181.2	180.3	13.3	0.63
2026	34.1[3]	161.0	195.1	194.1	14.3	0.65
Low-cost:						
2016[2]	13.8[3]	92.4	106.2	100.0	7.6	0.54
2017	15.4	79.8	95.2	95.8	7.0	0.49
2018	15.1	76.5	91.6	91.6	7.1	0.43
2019	16.8	87.4	104.2	103.7	7.7	0.45
2020	18.6[3]	93.1	111.7	111.2	8.2	0.46
2021	19.4[3]	98.3	117.7	117.2	8.6	0.46
2022	21.1	103.1	124.2	123.7	9.1	0.45
2023	22.6	108.2	130.8	130.3	9.6	0.45
2024	24.1	114.1	138.2	137.7	10.1	0.45
2025	25.7	119.0	144.7	144.2	10.6	0.45
2026	27.8[3]	125.2	153.0	152.4	11.2	0.45
High-cost:						
2016[2]	13.8[3]	92.4	106.2	100.0	7.6	0.54
2017	15.4	87.0	102.4	102.8	7.2	0.54
2018	18.7	95.5	114.2	113.1	8.2	0.58
2019	21.7	105.9	127.7	126.6	9.3	0.63
2020	24.6[3]	117.2	141.9	140.8	10.3	0.67
2021	26.3[3]	129.3	155.6	154.5	11.4	0.71
2022	29.2	142.0	171.1	170.0	12.5	0.76
2023	31.9	156.0	187.9	186.7	13.8	0.80
2024	34.7	171.8	206.6	205.2	15.2	0.85
2025	37.6	187.2	224.8	223.4	16.6	0.90
2026	41.6[3]	205.6	247.2	245.6	18.3	0.96

[1]Other income contains Federal and State government contributions and interest.
[2]Figures for 2016 represent actual experience.
[3]See footnote 6 of table III.D3.

Notes: 1. Totals do not necessarily equal the sums of rounded components.
2. Percentages are affected by economic cycles.

These alternatives provide two possible Part D scenarios. However, given the considerable variation in future demographic, economic, and healthcare-usage factors, actual Part D experience could fall outside of this range. The low- and high-cost scenarios in this year's report result in a narrower dollar range than in years prior to 2014 due to a change in the alternative assumptions in the 2014 Trustees Report.[54] The GDP

[54]The Trustees' alternative CPI assumptions were reversed in the 2014 report compared with those in previous reports, so that the high-cost assumptions in prior reports are the low-cost assumptions for the 2014 and later reports, and vice versa. Inflation rates are now ordered across alternatives according to their effect on the OASDI actuarial balance. This change resulted in a narrow range of impacts.

assumptions for the alternative scenarios are also affected by the assumption change. Therefore, spending as a percentage of GDP provides better insight into the variability of spending than the nominal dollar amounts, as shown in table III.D5.

The alternative projections shown in table III.D5 illustrate two important aspects of the financial operations of the Part D account:

- Despite the differing assumptions underlying the three alternatives, the balance between Part D income and expenditures remains relatively stable. This result occurs because the premiums and general revenue contributions underlying the Part D financing are reestablished annually. Thus, Part D income automatically tracks Part D expenditures fairly closely, regardless of the specific economic and other conditions.

- As a result of the close matching of income and expenditures described above, together with anticipated continuing flexibility in the apportionment of general revenues, the need for a contingency reserve to handle unanticipated fluctuations is minimal.

Adequacy of Part D Financing Established for Calendar Year 2017

As noted previously, the Part D account in the SMI trust fund will be in financial balance indefinitely because the premiums paid by enrollees and the amounts apportioned from the general fund of the Treasury are determined each year so as to adequately finance Part D expenditures. Moreover, the appropriation for Part D general revenues has generally included an indefinite authority provision allowing for amounts to be transferred to the Part D account on an as-needed basis. This provision allows previously apportioned amounts to change without additional Congressional action if those amounts are later determined to be insufficient. Consequently, once an appropriation with this provision has been made, no deficit will occur in the Part D account, and no contingency fund will be necessary to cover deficits.[55]

As described in section III.C on the financial status of the Part B account, it is important to maintain an appropriate level of assets to cover the liability for claims that have been incurred but not yet reported or paid. In the case of Part D, however, most such claims are the responsibility of the prescription drug plans rather than the Part D program. Accordingly, the Part D account is generally not at risk for

[55]The indefinite authority applies to all Part D outlays other than Federal administrative expenses. Those amounts are specifically appropriated each year.

incurred-but-unreported claim amounts, and no asset reserve is necessary for this purpose.

Another potential Part D liability exists to the extent that Part D reinsurance payments and low-income cost-sharing subsidy payments are based on plan estimates.[56] Since actual Part D costs, as subsequently determined, will generally differ from the plan bids, payment adjustments are made after the close of the year as needed to reconcile the accounts. When the plan bids have been below actual costs, Medicare has made such settlements in favor of the plans from the following year's appropriated general revenues; thus, creation of a reserve for payment of such settlement amounts is not required.

For these reasons, the Trustees have concluded that maintenance of Part D account assets for contingency or liability purposes is unnecessary at this time. Accordingly, evaluation of the adequacy of Part D assets is also unnecessary, and the Part D account is considered to be in satisfactory financial condition for 2016 and all future years as a consequence of its basis for financing.

3. Long-Range Estimates

Section III.D2 presented the expected operations of the Part D account over the next 10 years. This section describes the long-range expenditures of the account under the intermediate assumptions. Due to its automatic financing provisions, the Trustees expect adequate financing of the Part D account into the indefinite future and so have not conducted a long-range analysis using high-cost and low-cost assumptions. The 10-year projections under the alternative assumptions are presented in section IV.B2.

Table III.D6 shows the estimated Part D incurred expenditures under the intermediate assumptions expressed as a percentage of GDP, for selected years over the calendar-year period 2016-2091.[57] The 75-year projection period fully allows for the presentation of likely future trends, such as the large increase in enrollees after 2010 as the baby boom generation begins to receive benefits.

[56]These estimates are subject to actuarial review by the CMS Office of the Actuary.

[57]These estimated incurred expenditures are for benefit payments and administrative expenses combined, unlike the values in table III.D4, which express only benefit payments on a cash basis as a percentage of GDP.

Table III.D6.—Part D Expenditures (Incurred Basis) as a Percentage of the Gross Domestic Product[1]

Calendar year	Part D expenditures as a percentage of GDP
2016	0.50%
2017	0.49
2018	0.51
2019	0.53
2020	0.55
2021	0.57
2022	0.59
2023	0.60
2024	0.62
2025	0.63
2026	0.65
2030	0.71
2035	0.77
2040	0.81
2045	0.84
2050	0.87
2055	0.90
2060	0.94
2065	0.98
2070	1.02
2075	1.06
2080	1.09
2085	1.12
2090	1.17
2091	1.17

[1]Expenditures are the sum of benefit payments and administrative expenses.

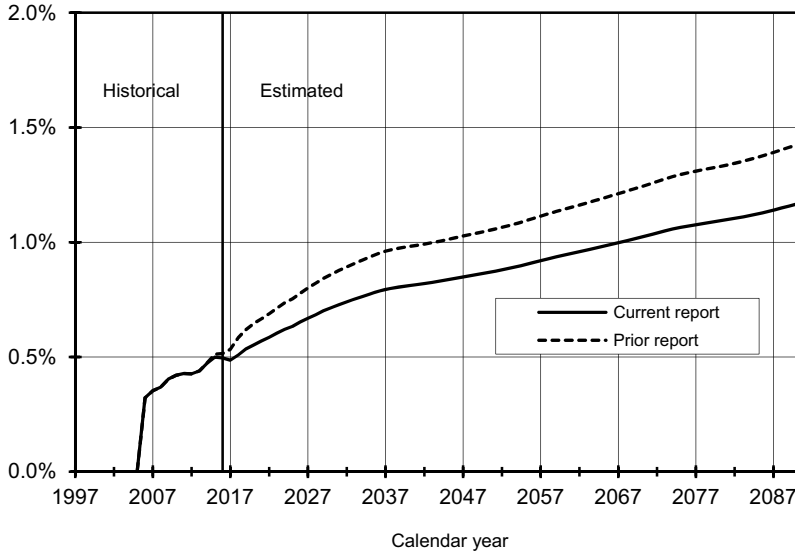
Note: Percentages are affected by economic cycles.

The Trustees assume that increases in Part D costs per enrollee during the initial 25-year period will decline gradually to the growth rates described in sections II.C and IV.D. Based on these assumptions and projected demographic changes, incurred Part D expenditures as a percentage of GDP would increase from 0.50 percent in 2016 to 1.17 percent in 2091. The projected percentages are significantly reduced from last year's Trustees Report primarily due to an upward revision in the level of drug manufacturer rebates and lower utilization of hepatitis C drugs.

The long-range Part D projections are based on the cost growth assumptions described previously. More information on these assumptions is available in section IV.D of this report. Section IV.B2 describes the data sources and assumptions underlying the updated Part D estimates.

Figure III.D1 compares the year-by-year Part D expenditures as a percentage of GDP for the current annual report with the corresponding projections from 2016. The Part D expenditure increase is slower than in last year's report because of the lower drug benefit growth rates discussed in the 10-year actuarial estimates.

Figure III.D1.—Comparison of Part D Projections as a Percentage of the Gross Domestic Product: Current versus Prior Year's Reports



Note: Percentages are affected by economic cycles.

IV. ACTUARIAL METHODOLOGY AND PRINCIPAL ASSUMPTIONS FOR COST ESTIMATES FOR THE HOSPITAL INSURANCE AND SUPPLEMENTARY MEDICAL INSURANCE TRUST FUNDS

This section describes the basic methodology and assumptions used in the estimates for the HI and SMI trust funds under the intermediate assumptions and presents projections of HI and SMI costs under two alternative sets of assumptions.

The economic and demographic assumptions underlying the projections of HI and SMI costs shown in this report are consistent with those in the 2017 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds. That report describes these assumptions in more detail.

A. HOSPITAL INSURANCE

1. Cost Projection Methodology

The principal steps involved in projecting future HI costs are (i) establishing the present cost of services provided to beneficiaries, by type of service, to serve as a projection base; (ii) projecting increases in HI payments for inpatient hospital services; (iii) projecting increases in HI payments for skilled nursing, home health, and hospice services covered; (iv) projecting increases in payments to private health plans; and (v) projecting increases in administrative costs.

a. Projection Base

To establish a suitable base from which to project future HI costs, the incurred payments for services provided must be constructed for the most recent period for which a reliable determination can be made. Accordingly, payments to providers must be attributed to dates of service, rather than to payment dates; in addition, the nonrecurring effects of any changes in regulations, legislation, or administration, and of any items affecting only the timing and flow of payments to providers, must be eliminated. As a result, the rates of increase in the HI incurred costs differ from the increases in cash expenditures shown in the tables in section III.B.

For those expenses still reimbursed on a reasonable-cost basis, the costs for covered services are determined on the basis of provider cost reports. Due to the time required to obtain cost reports from providers, to verify these reports, and to perform audits (where appropriate), final settlements have lagged behind the original costs by as much as

several years for some providers. Additional complications arise from legislative, regulatory, and administrative changes, the effects of which cannot always be determined precisely.

The process of allocating the various types of HI payments made to the proper incurred period—using incomplete data and estimates of the impact of administrative actions—presents difficult problems, and the solutions to these problems can be only approximate. Under the circumstances, the best that one can expect is that the actual HI incurred cost for a recent period can be estimated within a few percent. This process increases the projection error directly by incorporating any error in estimating the base year into all future years.

b. Fee-for-Service Payments for Inpatient Hospital Costs

Payment for almost all inpatient hospital services for fee-for-service beneficiaries occurs under a prospective payment system. The law stipulates that the annual increase in the payment rate for each admission relate to a hospital input price index (also known as the hospital market basket), which measures the increase in prices for goods and services purchased by hospitals for use in providing care to hospital inpatients. For fiscal year 2017, the prospective payment rates have already been determined. For fiscal years 2018 and later, the statute mandates that the annual increase in the payment rate per admission equal the annual increase in the hospital input price index (for those hospitals submitting required quality measure data), minus a specified percentage. For this report, the Trustees assume that all hospitals will submit these data.

Increases in aggregate payments for inpatient hospital care covered under HI can be analyzed in five broad categories, presented in table IV.A1:

(1) Hospital input price index—the increase in prices for goods and services purchased by the hospital;

(2) Unit input intensity allowance—an amount added to or subtracted from the input price index (generally called for in legislation) to yield the prospective payment update factor;

(3) Volume of services—the increase in total output of units of service (as measured by covered HI hospital admissions);

(4) Case mix—the financial effect of changes in the average complexity of hospital admissions; and

(5) Other sources—a residual category reflecting all other factors affecting hospital cost increases (such as enacted legislative changes).

Table IV.A1 shows the estimated historical values of these principal components, as well as the projected trends used in the estimates. Unless otherwise indicated, the following discussions apply to projections under the intermediate assumptions.

Table IV.A1.—Components of Historical and Projected Increases in HI Inpatient Hospital Payments[1]

Calendar year	Input price index	Unit input intensity allowance[2]	Volume of services: HI enrollment	Volume of services: Managed care shift effect	Volume of services: Admission incidence	Case mix	Other sources	HI inpatient hospital payments
Historical data:								
2007	3.4%	0.0%	2.2%	−3.4%	1.0%	−0.2%	−2.3%	0.6%
2008	3.4	0.0	2.6	−3.1	−4.4	1.9	2.6	2.8
2009	3.2	0.0	2.5	−2.4	−2.8	2.7	−1.6	1.4
2010	2.2	−0.2	2.4	−0.9	−0.9	0.9	−2.0	1.5
2011	2.7	−0.5	2.5	−1.1	−1.6	0.0	−0.6	1.3
2012	2.9	−1.0	4.1	−1.8	−4.4	0.5	2.6	2.7
2013	2.6	−0.8	3.2	−2.2	−4.3	1.4	1.7	1.5
2014	2.6	−0.8	3.1	−2.5	−3.2	1.7	−0.7	0.1
2015	2.8	−0.7	2.7	−2.1	−0.8	0.6	−3.1	−0.8
2016	2.5	−0.8	2.3	−1.3	−3.4	2.7	−0.5	1.2
Intermediate estimates:								
2017	3.0	−1.2	3.2	−2.0	−1.9	0.5	−1.6	−0.1
2018	3.9	−1.5	2.9	−1.1	−0.9	0.5	−0.2	3.6
2019	3.8	−1.3	3.1	−0.7	−0.1	0.5	0.3	5.6
2020	3.7	−0.7	3.0	−0.1	0.0	0.5	0.3	6.9
2021	3.6	−0.8	2.9	−0.2	0.0	0.5	0.4	6.6
2022	3.5	−0.8	2.9	−0.4	0.1	0.5	0.4	6.3
2023	3.4	−0.9	2.7	−0.4	0.1	0.5	0.4	6.0
2024	3.4	−0.9	2.6	−0.3	0.0	0.5	0.0	5.4
2025	3.4	−1.0	2.6	−0.2	0.0	0.5	−0.5	4.8
2026	3.4	−1.1	2.4	−0.2	0.1	0.5	2.5	7.8

[1]Percent increase in year indicated over previous year, on an incurred basis.
[2]Reflects the allowances provided for in the prospective payment update factors. Also reflects the downward adjustments to price updates based on the 10-year moving average of economy-wide productivity growth in 2012 and later, and additional decreases in updates ranging from 0.1 percentage point to 0.75 percentage point from 2010 through 2019, as introduced by the ACA.

The input price index is a weighted average of the price proxies (prices of specific inputs) used in delivery of HI inpatient services. The methodology underlying this report utilizes least-squares regression models for each price proxy to project this index. The process begins by regressing the historical time series for each price proxy on one of three independent variables: average hourly compensation, GDP deflator, and CPI. The regression results are then applied to the projected independent variables to produce projections for each detailed price proxy, which are weighted together to produce the aggregate input price index.

The unit input intensity allowance is generally a downward adjustment provided for by law in the prospective payment update factor; that is, it is the amount subtracted from the input price index to yield the update factor.[58] Beginning in fiscal year 2004, the law provides that increases in payments to prospective payment system hospitals for covered admissions will equal the increase in the hospital input price index for those hospitals that submit the required quality measure data. For other hospitals, the increase will be slightly smaller. For this report, the Trustees assume that all hospitals will submit these data. Beginning in fiscal year 2010, the ACA mandates amounts to be subtracted from the input price index, including the increase in economy-wide productivity in 2012 and later, and amounts ranging from 0.1 percentage point to 0.75 percentage point for 2010 through 2019. As a result of these adjustments, the unit input intensity allowance, as indicated in table IV.A1, is negative throughout the first 10-year projection period.

Increases in payments for inpatient hospital services also reflect growth in the number of inpatient hospital admissions covered under HI fee-for-service. As shown in table IV.A1, increases in admissions are attributable to growth in both HI enrollment and admission incidence (admissions per beneficiary).[59] The historical and projected growth in enrollment reflects a more rapid increase in the population aged 65 and over than in the total population of the United States, as well as increasing numbers of disabled beneficiaries and persons with end-stage renal disease. Growth in enrollment is expected to continue and to mirror the ongoing demographic shift into categories of the population eligible for HI benefits and reduced by an increasing proportion of beneficiaries enrolling in private health plans.

In recent years the choice of more beneficiaries to join private health plans was an offsetting factor to the HI enrollment growth, as shown in the "managed care shift effect" column of table IV.A1. In other words, greater enrollment in private health plans reduced the number of beneficiaries with fee-for-service Medicare coverage and thereby reduced hospital admissions paid through fee-for-service. Private

[58]The update factors are generally prescribed on a fiscal-year basis, while table IV.A1 is on a calendar-year basis. Calculations have therefore been performed to estimate the unit input intensity allowance on the basis of calendar years. The sum of the input price index and the unit input intensity allowance generally reflects the prescribed prospective payment update factor, but on a calendar-year, rather than a fiscal-year, basis.

[59]This factor is estimated to be negative for most of the projection period, reflecting the influx of beneficiaries aged 65 (and the resulting reduction in the average age of beneficiaries) due to the retirement of the baby boom generation. By the end of the projection period, the aging of this group is expected to increase the incidence of admissions.

Medicare health plan membership is projected to continue to grow for most of the projection period.

Since the beginning of the prospective payment system (PPS), inpatient hospital payments have varied based on the complexity of admissions. These variations are primarily due to (i) the changes in diagnosis-related group (DRG) coding as hospitals continue to adjust to the PPS and (ii) the trend toward treating less complicated (and thus less expensive) cases in outpatient settings, which results in an increase in the average prospective payment per admission.

The average complexity of hospital admissions (case mix) is expected to increase by 0.5 percent annually in fiscal years 2017 through 2026 as a result of an assumed continuation of the current trend toward treating less complicated cases in outpatient settings, ongoing changes in DRG coding, and the overall impact of new technology. This assumption is based on Recommendation II-9 of the 2010-2011 Medicare Technical Review Panel.

Hospital payments are also affected by other factors, as reflected in the "other sources" column of table IV.A1. For example, statutory budget neutrality adjustments offset costs from significant increases in case mix that occurred when the new Medicare severity diagnosis-related group (MS-DRG) system was introduced in 2008. Although the law limited the size of these adjustments in 2008 and 2009, it allows subsequent recovery of any extra payments that resulted. The "other sources" column reflects all of these actual and anticipated effects and adjustments. In addition, one can attribute part of the increase from "other sources" to the increase in payments for certain costs, not included in the DRG payment, that are generally growing at a rate slower than the input price index. These other costs include capital, medical education (both direct and indirect), disproportionate share hospital (DSH) payments, and payments to hospitals not included in the prospective payment system. A particularly important change affecting these costs is the reduction in Medicare DSH payments under the ACA. This change reflects the major coverage expansions that began in 2014 and that continue to result in significantly fewer uninsured hospital patients.

Additional possible sources of changes in payments include (i) a shift to higher-cost or lower-cost admissions due to changes in the demographic characteristics of the covered population; (ii) changes in medical practice patterns; and (iii) adjustments in the relative payment levels for various DRGs, or addition/deletion of DRGs, in response to changes in technology.

The "other sources" column reflects, as appropriate, the impact of certain enacted legislation—including the sequestration process, which is the cause of the large increase in 2026. Also reflected in this column is the impact of the estimated bonus payments and penalties for hospitals due to the health information technology incentives.

The increases in the input price index (less any intensity allowance specified in the law), units of service, and other sources are compounded to calculate the total increase in payments for inpatient hospital services. The last column of table IV.A1 shows these overall increases.

c. Fee-for-Service Payments for Skilled Nursing Facility, Home Health Agency, and Hospice Services

To project fee-for-service payments for skilled nursing facilities (SNFs), a method similar to that for inpatient hospitals is used. First, the number of covered days is determined, and then the average reimbursement per day is calculated. Historically, the number of days of care covered in SNFs under HI has varied widely. This extremely volatile experience has resulted, in part, from legislative and regulatory changes and from judicial decisions affecting the scope of coverage. From 2006 to 2008, utilization rates increased by fairly high amounts. Since 2009, this trend has leveled off. The intermediate projections assume that these increases in covered SNF days will reflect the growth and aging of the population plus 1 percent annually, as an underlying trend beginning in 2019. This assumption is based on Recommendation II-10 of the 2010-2011 Medicare Technical Review Panel.

As with hospitals, a least-squares regression model was used to develop the market basket increases for SNFs. These market basket increases are reduced by the increase in economy-wide productivity beginning in 2012. Cost per day also increases by a case mix increase. The implementation of the new resource utilization group-53 (RUG-53) system of payment in 2006 was accompanied by an increase of over 7 percent in case mix for 2006 and more than 3 percent for 2007 through 2009. In 2010, a reduction of about 3.3 percent was applied to all the rates to better match payments from the old payment system to the new payment system. The implementation of a new RUG system again caused a very large increase in case mix in 2011, and a reduction of about 12.6 percent was applied in 2012 to once again match payments. Since then, case mix increases have been between 1 and 2 percent each year. For the projection, the case mix increases are assumed to grow at a level of 1.5 percent annually, based on

Recommendation II-9 of the 2010-2011 Medicare Technical Review Panel. The required reduction in costs due to sequestration is also reflected in the projected expenditures. These assumed trends result in projected rates of increase in cost per day that are assumed to decline to a level slightly higher than increases in general earnings throughout the projection period.

Table IV.A2 shows the resulting increases in fee-for-service expenditures for SNF and other types of services.

Table IV.A2.—Relationship between Increases in HI Expenditures and Increases in Taxable Payroll[1]

Calendar year	Inpatient hospital	Skilled nursing facility	Home health agency[2]	Hospice	Private plans	Weighted average	HI administrative costs[3]	HI expenditures[3]	HI taxable payroll	Growth rate differential[4]
Historical data:										
2007	0.6%	8.3%	3.9%	12.3%	22.5%	5.8%	−1.0%	5.7%	5.4%	0.3%
2008	2.8	9.2	7.8	8.4	21.6	7.7	10.0	7.7	2.0	5.6
2009	1.4	5.5	4.4	7.6	19.2	6.2	−2.5	6.1	−4.8	11.4
2010	1.5	6.2	3.3	6.9	2.9	2.7	8.1	2.8	2.0	0.8
2011	1.3	11.8	−5.3	6.6	6.6	4.0	7.0	4.0	4.1	−0.1
2012	2.7	−9.1	−1.2	7.4	8.8	2.9	7.9	3.0	4.9	−1.8
2013	1.5	1.6	−0.1	1.0	4.6	2.3	8.4	2.4	2.4	−0.0
2014	0.1	1.3	−1.2	0.2	0.0	0.2	4.8	0.3	5.2	−4.7
2015	−0.8	1.8	4.2	4.7	8.0	2.4	20.7	2.7	5.3	−2.5
2016	1.2	−1.1	1.1	6.4	6.8	2.9	−9.1	2.6	4.1	−1.4
Intermediate estimates:										
2017	−0.1	4.5	2.9	6.9	9.2	3.7	5.2	3.7	5.2	−1.4
2018	3.6	5.0	4.9	6.5	4.2	4.2	6.8	4.2	5.7	−1.4
2019	5.6	7.2	7.6	7.9	8.1	6.8	7.0	6.8	5.5	1.2
2020	6.9	8.6	8.3	8.1	7.0	7.2	7.6	7.2	5.4	1.7
2021	6.6	8.5	8.2	7.9	7.6	7.2	7.0	7.2	5.1	2.1
2022	6.3	8.7	7.9	7.8	8.4	7.4	6.4	7.3	4.6	2.6
2023	6.0	8.6	7.8	7.6	8.0	7.1	6.1	7.1	4.3	2.7
2024	5.4	8.3	7.7	7.3	7.3	6.5	6.2	6.5	4.3	2.1
2025	4.8	7.8	7.1	7.6	6.4	5.9	7.6	5.9	4.3	1.5
2026	7.8	11.1	10.4	9.9	9.1	8.5	10.2	8.5	4.3	4.1

[1]Percent increase in year indicated over previous year.
[2]Includes the declining share of costs drawn from HI for coverage of certain home health services transferred from HI to SMI Part B.
[3]Includes costs of Quality Improvement Organizations.
[4]The ratio of the increase in HI costs to the increase in taxable payroll. This ratio is equivalent to the percent increase in the ratio of HI expenditures to taxable payroll (the cost rate).

A similar methodology is used to project home health agency (HHA) payments. For most historical years, HI experience with HHA payments had shown an upward trend, frequently with sharp increases in the number of visits from year to year. For 2006 through 2009, the increases were large. Moreover, in certain areas of the country, outlier payments for treatment episodes increased at extraordinary rates during this period, prompting special rules to limit abusive practices. In 2010, limits were placed on the proportion of total payments that an agency could receive in the form of outlier payments, and prosecution of fraud cases resulted in the closing of a number of purported home health agencies. There was a slight decrease in

utilization in 2010, followed by large decreases in 2011 and 2012 and a rebound in 2013 and 2014. Preliminary data for 2016 show no growth in utilization. For 2017 and the rest of the projection period, these utilization and intensity increases are assumed to be equal to the growth and aging of the population plus 1 percent annually. This assumption is based on Recommendation II-11 of the 2010-2011 Medicare Technical Review Panel.

Reimbursement per episode of care[60] is assumed to increase at a slightly higher rate than increases in general earnings, but adjustments to reflect statutory limits on HHA reimbursement per episode are included where appropriate. As with other services, a least-squares regression model was used to develop market basket increases, which are reduced by the increase in economy-wide productivity beginning in 2015. Costs also increase by a case mix increase factor. Case mix increases have been modest and decreased over the last several years before rebounding in 2013 and 2014. Based on Recommendation II-9 of the 2010-2011 Medicare Technical Review Panel, HHA case mix increases are projected to increase until reaching 1.5 percent annually beginning in 2016. CMS adjusted HHA payment levels from 2008 through 2013 to gradually offset the financial effect of the unduly high mix of services in the first and subsequent years. Under the ACA, HHA payment rates are rebased starting in 2014, with an estimated 14-percent reduction in payments to be phased in over a 4-year period. Projected HHA costs reflect these regulatory adjustments. As is the case for all types of Medicare benefits, the projected home health expenditures also reflect the specified reductions due to sequestration. Table IV.A2 shows the resulting increases in fee-for-service expenditures for HHA services.

HI covers certain hospice care for terminally ill beneficiaries. Hospice payments were originally very small relative to total HI benefit payments, but they have grown rapidly in most years and now substantially exceed the level of HI home health expenditures. This growth rate is composed of two factors: (i) the price update, which is a function of the hospital market basket with an adjustment for economy-wide productivity, and (ii) a residual, which includes all other factors. This residual grew rapidly through 2007, grew at a slower rate from 2008 to 2013, became negative in 2014, and rebounded in 2015. For 2016 and the remainder of the projection period, it is expected to increase at the 2008-2013 rate. Although detailed hospice data are scant at this time, estimates for hospice benefit payment increases are

[60]Under the HHA prospective payment system, Medicare payments are made for each episode of care, rather than for each individual home health visit.

based on mandated daily payment rates and annual payment caps, and these estimates assume a deceleration in the growth in the number of covered days.

d. Private Health Plan Costs

HI payments to private health plans have generally increased significantly from the time that such plans began to participate in the Medicare program in the 1970s. Most of the growth in expenditures has been attributable to the increasing numbers of beneficiaries who have enrolled in these plans. Section IV.C of this report contains a description of the private health plan assumptions and methodology.

e. Administrative Expenses

Historically, the cost of administering the HI trust fund has remained relatively small in comparison with benefit amounts. The ratio of administrative expenses to benefit payments has generally fallen within the range of 1 to 3 percent. The short-range projection of administrative cost is based on estimates of workloads and approved budgets for Medicare Administrative Contractors and CMS. In addition, the administrative costs reflect an assumed 5-percent reduction due to the sequester for the period April 2013 through September 2025. In the long range, administrative cost increases are based on assumed increases in workloads, primarily due to growth and aging of the population, and on assumed unit cost increases equal to the increases in average annual covered wages.

2. Summary of Aggregate Reimbursement Amounts on an Incurred Basis under the Intermediate Assumptions

Table IV.A3 shows aggregate historical and projected reimbursement amounts by type of service on an incurred basis under the intermediate assumptions.

Table IV.A3.—Aggregate Part A Reimbursement Amounts on an Incurred Basis
[In millions]

Calendar year	Inpatient hospital	Skilled nursing facility	Home health agency	Hospice	Total FFS	Private health plans	Total Part A
Historical data:							
2007	$126,000	$22,753	$6,268	$10,518	$165,540	$40,690	$206,230
2008	129,513	24,855	6,756	11,404	172,527	49,480	222,007
2009	131,365	26,216	7,052	12,274	176,906	58,958	235,865
2010	133,294	27,848	7,281	13,126	181,550	60,681	242,231
2011	135,051	31,126	6,894	13,986	187,057	64,703	251,760
2012	138,669	28,295	6,811	15,026	188,802	70,412	259,214
2013	140,776	28,746	6,805	15,176	191,502	73,659	265,161
2014	140,950	29,126	6,726	15,205	192,006	73,666	265,672
2015	139,851	29,642	7,007	15,925	192,425	79,575	271,999
2016	141,570	29,324	7,083	16,937	194,914	84,987	279,901
Intermediate estimates:							
2017	141,400	30,637	7,288	18,105	197,429	92,837	290,267
2018	146,542	32,160	7,647	19,285	205,634	96,760	302,394
2019	154,793	34,469	8,231	20,812	218,305	104,558	322,863
2020	165,480	37,423	8,917	22,497	234,316	111,878	346,195
2021	176,332	40,620	9,645	24,277	250,874	120,328	371,202
2022	187,446	44,141	10,408	26,166	268,161	130,471	398,633
2023	198,656	47,933	11,220	28,161	285,970	140,956	426,925
2024	209,329	51,915	12,088	30,219	303,550	151,272	454,823
2025	219,299	55,943	12,940	32,501	320,683	161,005	481,688
2026	236,395	62,145	14,282	35,707	348,529	175,723	524,252

Note: Amounts do not reflect the effects of the Independent Payment Advisory Board (IPAB).

3. Financing Analysis Methodology

Because payroll taxes are the primary basis for financing the HI trust fund, HI costs can be compared on a year-by-year basis with the taxable payroll in order to analyze costs and evaluate the financing.

a. Taxable Payroll

Taxable payroll increases occur as a result of increases in both average covered earnings and the number of covered workers. The taxable payroll projection used in this report is based on the same economic assumptions used in the 2017 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds (OASDI). Table IV.A2 shows the projected increases in taxable payroll for this report, under the intermediate assumptions.

b. Relationship between HI Costs and Taxable Payroll

The most meaningful measure of HI cost increases, with regard to the financing of the system, is the relationship between cost increases and taxable payroll increases. If costs increase more rapidly than taxable payroll, either income rates must be increased or costs reduced (or some combination thereof) to finance the system in the future. Table IV.A4 shows the projected increases in HI costs relative to

taxable payroll over the 10-year projection period. These relative increases fluctuate, starting at −1.4 percent per year in 2017, remaining negative through 2018 as the assumed continuation of the economic recovery leads to faster growth in employment and earnings, changing to a positive differential of 1.2 percent per year in 2019, and then increasing to 4.1 percent per year by 2026 for the intermediate assumption. The result of these relative growth rates is an initial decrease, followed by a steady increase, in the year-by-year ratios of HI expenditures to taxable payroll, as shown in table IV.A4.

Table IV.A4.—Summary of HI Alternative Projections

Calendar year	Changes in the relationship between expenditures and payroll[1]: HI expenditures[2,3]	Taxable payroll	Ratio of expenditures to payroll	HI effective interest rate[4]	Nominal interest rate[4]
Intermediate estimates:					
2017	3.7%	5.2%	−1.4%	3.775%	2.700%
2018	4.2	5.7	−1.4	3.790	3.700
2019	6.8	5.5	1.2	3.814	4.340
2020	7.2	5.4	1.7	3.867	4.640
2021	7.2	5.1	2.1	3.906	4.840
2022	7.3	4.6	2.6	3.868	4.990
2023	7.1	4.3	2.7	3.853	5.030
2024	6.5	4.3	2.1	3.932	5.170
2025	5.9	4.3	1.5	4.112	5.250
2026	8.5	4.3	4.1	4.137	5.300
Low-cost:					
2017	2.1	6.4	−4.1	3.855	3.500
2018	3.1	8.1	−4.7	4.168	5.090
2019	6.7	7.8	−1.0	4.556	5.660
2020	6.7	7.0	−0.3	4.879	5.740
2021	6.3	6.0	0.2	5.102	5.750
2022	6.4	5.7	0.7	5.269	5.900
2023	6.3	5.6	0.7	5.469	6.090
2024	5.8	5.7	0.1	5.701	6.250
2025	5.3	5.7	−0.5	5.945	6.360
2026	7.8	5.7	2.0	6.123	6.400
High-cost:					
2017	5.2	3.9	1.3	3.728	2.020
2018	4.2	1.6	2.5	3.552	1.770
2019	6.1	2.7	3.3	3.260	3.060
2020	7.8	4.3	3.5	2.949	3.770
2021	8.2	4.0	4.1	2.291	3.970
2022	8.4	3.7	4.5	1.100	4.110
2023	8.2	3.5	4.6	4.250	4.220
2024	7.6	3.4	4.1	4.250	4.250
2025	6.8	3.2	3.5	4.250	4.250
2026	9.3	3.0	6.1	4.250	4.200

[1]Percent increase for the year indicated over the previous year.
[2]On an incurred basis.
[3]Includes hospital, SNF, HHA, private health plan, and hospice expenditures; administrative costs; and costs of Quality Improvement Organizations.
[4]The Trustees calculate present values by discounting the future annual amounts of income and outgo using the projected effective rates of interest credited to the HI trust fund for the first 10 years and grade to the ultimate nominal interest rate assumption by year 15. The ultimate nominal interest rates for the intermediate, low-cost, and high-cost projections are 5.3, 6.4, and 4.2 percent, respectively.

4. Projections under Alternative Assumptions

Projected HI expenditures under current law are subject to considerable uncertainty. To illustrate this uncertainty, HI costs have been projected under three alternative sets of assumptions.

Under the low-cost alternative over the 10-year projection period, increases in HI expenditures, relative to increases in taxable payroll, follow a pattern similar to that for the intermediate assumption, but at a somewhat lower rate; the rate for expenditures becomes 4.1 percent less than the rate for taxable payroll by 2017 but then increases, reaching 2.0 percent more per year than taxable payroll by 2026. Under the high-cost alternative, the ratio of expenditures to payroll fluctuates from 1.3 percent in 2017 to 6.1 percent by 2026, as shown in table IV.A4.

Beyond the first 25-year projection period, HI costs under the intermediate assumptions are based on the assumption that average per beneficiary expenditures (excluding demographic impacts) will increase at the baseline rates determined by the economic model described in sections II.C and IV.D less the economy-wide productivity adjustments. This rate is about the same as the increase in the Gross Domestic Product (GDP) per capita in 2041 but would decelerate to 0.3 percentage point slower than GDP per capita by 2091. HI expenditures, which were 3.4 percent of taxable payroll in 2016, increase to 4.7 percent by 2041 and to 5 percent by 2091 under the intermediate assumptions. Accordingly, if all of the projection assumptions were realized over time, the HI income rates (3.92 percent of taxable payroll summarized over 75 years) would be inadequate to support the HI cost.

During the first 25-year projection period, the low-cost and high-cost alternatives contain assumptions that result in HI costs increasing, relative to taxable payroll increases, approximately 2 percentage points less rapidly and 2 percentage points more rapidly, respectively, than the results under the intermediate assumptions. Costs beyond the first 25-year projection period assume that the 2-percentage-point differential gradually decreases until 2066, when HI cost increases relative to taxable payroll are approximately the same as under the intermediate assumptions.

Assumptions regarding income to the HI trust fund—including payroll taxes, income from the taxation of benefits, interest, and other income items—and assumptions regarding administrative costs are consistent with those underlying the OASDI report.

B. SUPPLEMENTARY MEDICAL INSURANCE

SMI consists of Part B and, since 2004, Part D. The benefits provided by each part are quite different. The actuarial methodologies used to produce the estimates for each part reflect these differences and thus appear in separate sections (IV.B1 and IV.B2).

1. Part B

a. Cost Projection Methodology

Estimates under the intermediate assumptions are calculated separately for each category of enrollee and for each type of service. The estimates are prepared by establishing the allowed charges or costs incurred per enrollee for a recent year (to serve as a projection base) and then projecting these charges through the estimation period. The per enrollee charges are then converted to reimbursement amounts by subtracting the per enrollee values of the deductible and coinsurance. Aggregate reimbursement amounts are calculated by multiplying the per enrollee reimbursement amounts by the projected enrollment. In order to estimate cash expenditures, an allowance is made for the delay between receipt of, and payment for, the service.

(1) Projection Base

To establish a suitable base from which to project the future Part B costs, the incurred payments for services provided must be constructed for the most recent period for which a reliable determination can be made. Accordingly, payments to providers must be attributed to dates of service, rather than to payment dates; in addition, the nonrecurring effects of any changes in regulations, legislation, or administration, and of any items affecting only the timing and flow of payments to providers, must be eliminated. As a result, the rates of increase in the Part B incurred cost differ from the increases in cash expenditures.

(a) Practitioner Services

Private contractors acting for the Centers for Medicare & Medicaid Services (CMS) pay reimbursement amounts for services billed by practitioners, including physician services, durable medical equipment (DME), laboratory tests performed in physician offices and independent laboratories, and other services (such as physician-administered drugs, free-standing ambulatory surgical center facility services, ambulance, and supplies). These Medicare Administrative Contractors (MACs) use CMS guidelines to determine whether Part B covers billed services, establish the allowed charges for covered

services, and transmit to CMS a record of the allowed charges, the applicable deductible and coinsurance, and the amount reimbursed after reduction for coinsurance and the deductible.

The data are tabulated on an incurred basis. As a check on the validity of the projection base, incurred reimbursement amounts are compared with cash expenditures.

(b) Institutional Services

The same MACs also pay reimbursement amounts for institutional services covered under Part B. These include outpatient hospital services, home health agency services, laboratory services performed in hospital outpatient departments, and such services as renal dialysis performed in free-standing dialysis facilities, services in outpatient rehabilitation facilities, and services in rural health clinics.

Separate payment systems exist for almost all the Part B institutional services. For these systems, the MACs determine whether Part B covers billed services, establish the allowed payment for covered services, and send to CMS a record of the allowed payment, the applicable deductible and coinsurance, and the amount reimbursed after reduction for coinsurance and the deductible.

For those services still reimbursed on a reasonable-cost basis, the costs for covered services are determined on the basis of provider cost reports. Reimbursement for these services occurs in two stages. First, bills are submitted by providers to the MACs, and interim payments are made on the basis of these bills. The second stage takes place at the close of a provider's accounting period, when a cost report is submitted and lump-sum payments or recoveries are made to correct for the difference between interim payments and final settlement amounts for providing covered services (net of coinsurance and deductible amounts). Tabulations of the bills are prepared by date of service, and the lump-sum settlements, which are reported only on a cash basis, are adjusted (using approximations) to allocate them to the time of service.

(c) Private Health Plan Services

Private health plans with contracts to provide Part B services to Medicare beneficiaries are reimbursed directly by CMS on either a reasonable-cost or capitation basis. Section IV.C of this report contains a description of the assumptions and methodology used to estimate payments to private plans.

(2) Projected Fee-for-Service Payments for Aged Enrollees and Disabled Enrollees without End-Stage Renal Disease (ESRD)

Part B enrollees with ESRD have per enrollee costs that are substantially higher and quite different in nature from those of most other beneficiaries. Accordingly, the analysis in this section excludes their Part B costs. Those costs, as well as costs associated with beneficiaries enrolled in private health plans, are discussed later in this section.

(a) Practitioner Services

i. Physician Services

Medicare payments for physician services are based on a fee schedule, which reflects the relative level of resources required for each service. The fee schedule amount is equal to the product of the procedure's relative value, a conversion factor, and a geographic adjustment factor. Payments are based on the lower of the actual charge and the fee schedule amount.

Table IV.B1 shows the actual and projected physician updates for 2007 through 2026. The physician fee schedule updates are specified by law. MACRA was enacted into law in 2015 and specifies the physician update for every future year. The update was 0 percent for January-June 2015 and 0.5 percent for July-December 2015. The update for 2016, relative to the payment level that applied for the last 6 months of 2015, was 0.5 percent. For 2017-2019, the update each year will be 0.5 percent, and for 2020-2025 the annual update will be 0 percent. Starting in 2026, the annual update for physicians in advanced alternative payment models (APMs) will be 0.75 percent, and, for all other physicians, the update each year will be 0.25 percent. The modified update shown in column 3 reflects the physician update and legislative impacts. The sequestration of all Medicare payments in 2013 through September 2025 does not affect allowed charges and therefore is not reflected in table IV.B1; rather, that impact is included in table IV.B2.

Table IV.B1.—Components of Increases in Total Allowed Charges per Fee-for-Service Enrollee for Practitioner Services

[In percent]

Calendar year	Physician fee schedule: MEI	Physician update	Modified update[1]	Residual factors	Total increase[2]	CPI	DME	Lab	Other
Aged:									
2007	2.1%	0.0%	−1.4%	3.5%	2.1%	2.9%	2.9%	9.8%	4.7%
2008	1.8	0.5	−0.3	4.0	3.7	4.1	6.4	7.3	4.2
2009	1.6	1.1	1.4	1.6	3.0	−0.7	−7.4	8.4	7.9
2010	1.2	1.3[3]	2.3	1.6	3.9	2.1	1.2	1.4	3.3
2011	0.4	0.9	0.8	2.3	3.1	3.6	−3.7	−2.8	4.4
2012	0.6	0.0	−1.2	1.0	−0.3	2.1	0.7	6.4	3.2
2013	0.8	0.0	−0.1	0.2	0.1	1.4	−10.4	0.1	2.6
2014	0.8	0.5	0.5	0.6	1.2	1.5	−14.3	6.4	2.6
2015	0.8	0.2[4]	−0.5	0.7	0.2	−0.4	6.7	2.6	4.4
2016	1.1	0.8	−0.4	−0.2	−0.6	1.0	−5.8	−2.5	7.2
2017	1.2	0.5	0.1	1.5	1.6	2.2	−5.7	6.0[5]	4.1
2018	1.8	0.5	−0.5	2.0	1.6	3.0	4.9	−0.8	2.9
2019	3.0	0.5	0.9	4.0[6]	4.9	2.6	11.3	5.1	4.0
2020	2.8	0.0	0.3	3.1	3.4	2.6	5.5	5.3	4.5
2021	2.6	0.0	0.1	3.4	3.5	2.6	5.5	13.8	4.3
2022	2.6	0.0	0.1	3.5	3.7	2.6	5.3	5.2	4.5
2023	2.4	0.0	0.1	3.5	3.7	2.6	5.3	5.2	3.8
2024	2.3	0.0	0.0	3.5	3.5	2.6	5.3	13.6	5.6
2025	2.2	0.0	0.0	1.0	1.0	2.6	5.3	5.2	4.7
2026	2.2	0.6	0.1	3.6	3.8	2.6	5.2	5.2	4.7
Disabled (excluding ESRD):									
2007	2.1	0.0	−1.4	1.7	0.3	2.9	2.2	10.4	4.1
2008	1.8	0.5	−0.3	3.7	3.4	4.1	6.3	11.8	8.7
2009	1.6	1.1	1.4	4.5	5.9	−0.7	−2.4	21.0	9.7
2010	1.2	1.3[3]	2.3	2.6	4.9	2.1	1.4	−4.3	2.8
2011	0.4	0.9	0.8	1.9	2.7	3.6	−3.0	6.4	3.4
2012	0.6	0.0	−1.2	2.1	0.9	2.1	1.0	24.7	1.9
2013	0.8	0.0	−0.1	1.3	1.2	1.4	−9.5	10.6	1.2
2014	0.8	0.5	0.5	1.8	2.3	1.5	−11.2	13.4	4.1
2015	0.8	0.2[4]	−0.5	0.4	−0.2	−0.4	7.2	5.9	6.2
2016	1.1	0.8	−0.4	0.4	0.0	1.0	−4.0	−12.9	8.7
2017	1.2	0.5	0.1	1.3	1.4	2.2	−6.0	5.7[5]	4.1
2018	1.8	0.5	−0.5	1.9	1.5	3.0	4.7	−0.8	3.1
2019	3.0	0.5	0.9	4.0[6]	4.9	2.6	11.2	5.1	4.0
2020	2.8	0.0	0.3	3.1	3.4	2.6	5.5	5.3	4.7
2021	2.6	0.0	0.1	3.3	3.5	2.6	5.4	13.8	4.5
2022	2.6	0.0	0.1	3.4	3.5	2.6	5.2	5.0	4.5
2023	2.4	0.0	0.1	3.3	3.5	2.6	5.2	5.0	3.6
2024	2.3	0.0	0.0	3.4	3.4	2.6	5.1	13.4	5.7
2025	2.2	0.0	0.0	0.8	0.8	2.6	5.1	5.0	4.7
2026	2.2	0.6	0.1	3.4	3.6	2.6	5.1	5.0	4.6

[1]Reflects the physician update and all legislation affecting physician services—for example, the addition of new preventative services enacted in 1997, 2000, and 2010.
[2]Equals combined increases in the modified update and residual factors.
[3]A physician payment price change occurred on June 1, 2010.
[4]A physician payment price change occurred on July 1, 2015.
[5]Beginning in 2018, payments under the laboratory fee schedule will no longer include an adjustment for economy-wide productivity. Instead, payments will reflect a survey of private sector lab payments and will be updated every 3 years.
[6]For 2019-2024, physicians in an advanced APM will receive an incentive payment amounting to 5 percent of their Medicare payments for the year. For those same years, a total of $500 million is available for additional payment adjustment under the merit-based incentive payment system (MIPS) for certain high-performing physicians.

Per capita physician charges have also changed each year as a result of a number of other factors besides fee increases, including more

physician visits and related services per enrollee, the aging of the Medicare population, greater use of specialists and more expensive techniques, and certain administrative actions. The fourth column of table IV.B1 shows the increases in physician charges per enrollee resulting from these residual factors. Because the measurement of increased allowed charges per service is subject to error, residual causes implicitly include any such errors. Part B expenditures are further affected by the sequestration of non-salary Medicare expenditures. Based on the increases in table IV.B1, and incorporating the sequestration of Medicare expenditures, table IV.B2 shows the estimates of the average incurred reimbursement for practitioner services per fee-for-service enrollee.

Table IV.B2.—Incurred Reimbursement Amounts per Fee-for-Service Enrollee for Practitioner Services

Calendar year	Fee-for-service enrollment [millions]	Physician fee schedule	DME	Lab	Other
Aged:					
2007	26.936	$1,836.65	$231.38	$122.22	$486.45
2008	26.457	1,905.33	246.10	131.10	506.47
2009	26.230	1,963.19	227.83	142.10	546.20
2010	26.427	2,037.16	229.67	144.05	564.03
2011	26.592	2,114.57	221.24	139.97	590.35
2012	26.900	2,131.69	223.55	148.96	610.03
2013	27.108	2,101.76	197.42	146.87	616.54
2014	27.224	2,126.45	168.90	155.55	630.42
2015	27.437	2,128.63	180.54	159.59	658.82
2016	28.038	2,096.20	169.72	155.54	706.23
2017	28.312	2,117.97	159.25	164.80	734.29
2018	28.894	2,150.07	167.32	163.56	755.78
2019	29.594	2,269.60	186.81	171.86	786.14
2020	30.507	2,347.92	197.26	180.91	821.72
2021	31.426	2,429.75	208.11	205.94	857.00
2022	32.344	2,517.85	219.19	216.59	895.08
2023	33.293	2,608.51	230.82	227.84	929.02
2024	34.237	2,699.47	242.92	258.83	981.43
2025	35.218	2,690.79	254.49	270.74	1,023.17
2026	36.191	2,858.53	274.34	292.20	1,097.83
Disabled (excluding ESRD):					
2007	5.311	1,440.08	353.99	109.09	426.27
2008	5.374	1,491.27	376.01	121.91	462.48
2009	5.556	1,581.12	367.01	147.47	506.85
2010	5.729	1,669.00	371.44	141.13	521.49
2011	5.772	1,722.18	360.69	150.23	540.35
2012	5.783	1,763.98	365.56	187.36	551.21
2013	5.726	1,759.75	326.24	204.04	549.00
2014	5.597	1,822.38	289.11	230.34	569.49
2015	5.445	1,813.77	310.28	243.82	605.58
2016	5.223	1,794.65	297.06	212.30	658.74
2017	5.153	1,809.62	273.60	224.45	685.42
2018	5.146	1,835.06	286.93	222.56	706.88
2019	5.209	1,936.85	319.73	233.81	735.27
2020	5.197	2,003.57	337.27	246.14	769.86
2021	5.106	2,072.08	355.40	280.06	804.29
2022	4.993	2,143.38	373.78	294.06	840.01
2023	4.869	2,216.33	393.11	308.77	869.67
2024	4.746	2,289.56	413.20	350.16	919.33
2025	4.626	2,276.04	432.17	365.71	957.33
2026	4.521	2,414.36	465.55	393.93	1,026.92

Note: Amounts do not reflect the effects of the Independent Payment Advisory Board (IPAB).

MACRA introduced changes to physician payments beyond the physician updates. Starting in 2019, physicians who are part of an advanced APM will receive payments that are different from those received by physicians who are not part of an advanced APM. For 2019 through 2024, physicians in an advanced APM will receive an annual incentive payment equal to 5 percent of their Medicare payments. Physicians who are not in an advanced APM will instead be under the merit-based incentive payment system (MIPS) and will receive a payment adjustment according to their performance. The performance adjustment could range from −4 percent to 12 percent in 2019, from

−5 percent to 15 percent in 2020, from −7 percent to 21 percent in 2021, and from −9 percent to 27 percent for 2022 and later. For 2019 through 2024, MIPS physicians could receive an additional payment adjustment for high performance of up to 10 percent. The total of all additional payment adjustments made to MIPS physicians in a year must not exceed $500 million. For 2026 and later, physicians in an advanced APM will receive an update of 0.75 percent while MIPS physicians will receive a 0.25-percent update. Based on these payment mechanisms, the existing demonstration and payment models, the requirements for becoming an advanced APM physician, and consideration of a recently released final rule,[61] the Trustees assume that physician participation in advanced APMs will grow from 25 percent of spending in 2019 to 100 percent by 2065.

ii. Durable Medical Equipment (DME), Laboratory, and Other Practitioner Services

Unique fee schedules or reimbursement mechanisms have been established not only for physician services but also for virtually all other non-physician practitioner services. Table IV.B1 shows the increases in the allowed charges per fee-for-service enrollee for DME, laboratory services, and other services. As noted previously, allowed charges are not affected by the sequestration of payment. Based on the increases in table IV.B1, table IV.B2 shows the corresponding estimates of the average incurred reimbursement amounts for these services per fee-for-service enrollee; these amounts are affected by the sequestration.

The fee schedules for each of these expenditure categories are updated by increases in the CPI, together with any applicable legislated limits on payment updates. In particular, starting in 2011 these fees are updated by the increase in the CPI minus the increase in the 10-year moving average of economy-wide productivity. Starting in 2018, laboratory services will no longer be affected by the annual productivity adjustments, as payments for Medicare laboratory services are linked to private payment rates.[62] In addition, certain DME items are paid based on a competitive-bidding process. Per capita

[61]This final rule, titled "Medicare Program; Merit-Based Incentive Payment System (MIPS) and Alternative Payment Model (APM) Incentive Under the Physician Fee Schedule, and Criteria for Physician-Focused Payment Models," was published in the *Federal Register* on November 4, 2016 and can be found at https://www.federalregister.gov/documents/2016/11/04/2016-25240/medicare-program-merit-based-incentive-payment-system-mips-and-alternative-payment-model-apm.

[62]Under the Protecting Access to Medicare Act of 2014, these changes were to be effective in 2017; however, CMS delayed implementation until 2018. These changes also apply to outpatient hospital laboratory services.

charges for these expenditure categories have also grown as a result of other factors, including increased number of services provided, the aging of the Medicare population, more expensive services, and certain administrative actions. This expenditure growth is projected based on recent past trends in growth per enrollee.

(b) Institutional Services

Over the years, legislation has established new payment systems for virtually all Part B institutional services, including a fee schedule for tests performed in laboratories in hospital outpatient departments. The Balanced Budget Act of 1997 implemented a prospective payment system (PPS), which began on August 1, 2000, for services performed in the outpatient department of a hospital. It also implemented a PPS for home health agency services, which began on October 1, 2000. Table IV.B3 shows the historical and projected increases in charges and costs per fee-for-service enrollee for institutional services, excluding the impact of sequestration.

Table IV.B3.—Increases in Costs per Fee-for-Service Enrollee for Institutional Services

[In percent]

Calendar year	Outpatient hospital	Home health agency	Outpatient lab	Other
Aged:				
2007	8.3%	18.9%	3.0%	7.5%
2008	6.3	12.4	5.1	6.0
2009	5.7	14.7	−5.9	21.2
2010	6.6	1.9	2.7	4.0
2011	7.1	−6.2	4.5	4.3
2012	7.2	−3.7	3.9	5.4
2013	7.3	−1.3	−0.8	−0.9
2014	12.5[1]	−0.4	−29.1[1]	4.5
2015	7.4	1.4	2.4	5.0
2016	5.0	−0.6	2.7	2.6
2017	6.9	2.4	2.9[2]	5.2
2018	8.3	3.2	−3.4	−7.2
2019	8.2	5.3	2.5	4.9
2020	8.7	5.3	2.9	5.2
2021	8.4	5.3	11.5	4.9
2022	8.4	5.3	3.2	4.9
2023	8.1	5.2	3.2	4.8
2024	7.8	5.3	11.4	4.8
2025	7.7	4.6	3.1	12.1
2026	7.8	7.8	3.1	4.7
Disabled (excluding ESRD):				
2007	7.9	20.2	6.4	14.2
2008	7.4	14.4	6.0	5.9
2009	11.1	16.3	−1.4	7.4
2010	6.5	−0.4	0.7	4.2
2011	6.2	−5.4	5.8	4.6
2012	7.4	−3.6	4.3	8.5
2013	6.5	−1.4	−1.9	2.3
2014	13.8[1]	−1.3	−36.0[1]	7.3
2015	7.2	−1.1	0.3	9.9
2016	5.6	−0.1	5.1	7.9
2017	6.7	3.1	2.7[2]	5.4
2018	8.1	3.5	−3.5	−4.4
2019	8.1	5.7	2.5	4.8
2020	8.4	5.6	2.9	5.1
2021	8.3	5.5	11.4	4.8
2022	8.3	5.4	3.0	4.9
2023	7.9	5.2	3.0	4.9
2024	7.7	5.2	11.2	4.9
2025	7.6	4.5	3.0	6.1
2026	7.6	7.7	3.0	4.9

[1]Effective January 1, 2014, a large portion of outpatient laboratory services were bundled into the outpatient prospective payment system.
[2]See footnote 5 of table IV.B1.

Note: Amounts do not reflect the effects of the IPAB.

Based on the increases in table IV.B3, table IV.B4 shows the estimates of the incurred reimbursement for the various institutional services per fee-for-service enrollee. Each of these expenditure categories is projected on the basis of recent trends in growth per enrollee, along with applicable legislated limits on payment updates and the effects of sequestration.

Table IV.B4.—Incurred Reimbursement Amounts per Fee-for-Service Enrollee for Institutional Services

Calendar year	Fee-for-service enrollment [millions]	Outpatient hospital	Home health agency	Outpatient lab	Other
Aged:					
2007	26.936	$664.56	$303.92	$105.51	$304.20
2008	26.457	723.71	341.56	110.89	323.18
2009	26.230	786.78	391.61	104.35	386.73
2010	26.427	843.18	398.92	107.12	399.76
2011	26.592	909.32	374.03	111.90	417.03
2012	26.900	979.94	360.09	116.30	439.20
2013	27.108	1,043.32	355.44	113.60	426.64
2014	27.224	1,180.54[1]	353.84	80.18[1]	442.47
2015	27.437	1,284.89	358.67	82.08	463.77
2016	28.038	1,354.94	356.66	84.33	473.17
2017	28.312	1,450.30	365.14	86.81	497.51
2018	28.894	1,570.81	376.66	83.89	457.52
2019	29.594	1,700.72	396.72	86.01	480.27
2020	30.507	1,848.36	417.58	88.52	505.58
2021	31.426	2,003.31	439.80	98.68	530.09
2022	32.344	2,172.53	463.18	101.80	555.73
2023	33.293	2,348.93	487.39	105.01	582.43
2024	34.237	2,533.15	513.03	116.98	610.25
2025	35.218	2,715.44	536.43	120.00	685.34
2026	36.191	2,998.97	578.50	126.97	735.11
Disabled (excluding ESRD):					
2007	5.297	757.32	240.05	121.90	225.08
2008	5.311	828.95	274.65	129.25	237.54
2009	5.374	947.26	319.30	127.40	246.53
2010	5.556	1,011.66	317.93	128.23	254.51
2011	5.729	1,079.51	300.72	135.70	264.89
2012	5.772	1,166.04	289.98	141.50	287.47
2013	5.783	1,233.95	285.96	136.68	287.81
2014	5.726	1,412.73[1]	282.38	87.06[1]	307.26
2015	5.597	1,532.46	279.41	87.36	338.49
2016	5.445	1,627.14	279.24	91.78	363.88
2017	5.223	1,737.33	287.91	94.26	383.73
2018	5.153	1,879.45	297.87	90.97	362.69
2019	5.146	2,032.32	314.88	93.20	380.26
2020	5.209	2,203.13	332.39	95.88	399.57
2021	5.197	2,385.84	350.74	106.80	418.76
2022	5.106	2,583.62	369.62	110.01	439.26
2023	4.993	2,789.29	388.77	113.31	460.86
2024	4.869	3,003.96	408.95	126.06	483.51
2025	4.746	3,215.34	427.51	129.11	511.13
2026	4.626	3,547.07	460.36	136.46	549.82

[1]Effective January 1, 2014, a large portion of outpatient laboratory services were bundled into the outpatient prospective payment system.

Note: Amounts do not reflect the effects of the IPAB.

Expenditures for outpatient hospital services increased significantly from 2001 through 2014 due to provisions in the Balanced Budget Act of 1997, the Balanced Budget Refinement Act of 1999, and the Benefits Improvement and Protection Act of 2000 that reduced beneficiaries' coinsurance payments to levels more consistent with other Part B services but maintained the same total payment to the hospital. The result is that Medicare pays a larger portion of the total outpatient hospital costs.

Part B expenditures for home health services had been increasing very rapidly through 2009, in part due to suspected fraud and abuse in South Florida and certain other parts of the country. In late 2008, CMS suspended payments to a number of home health agencies and increased program integrity efforts for this category of services. From 2010 onward, outlier payments to agencies have been capped as a percentage of total payments. Assumed growth rates for home health expenditures reflect this initiative, along with the ongoing effects of growth in the number of beneficiaries, payment rates, utilization of services, and legislated changes affecting future payments.

(3) Projected Fee-for-Service Payments for Persons with End-Stage Renal Disease (ESRD)

Most persons with ESRD are eligible to enroll for Part B coverage. For analytical purposes, this section includes two groups of enrollees: (i) those who qualify for Medicare due to ESRD alone and (ii) those who qualify not only because they have ESRD but also because they are disabled. Enrollees in this latter group, who are eligible as Disability Insurance beneficiaries, are included in this section because their per enrollee costs are both higher and different in nature from those of most other disabled persons. Specifically, most of the Part B reimbursements for both groups are related to kidney transplants and renal dialysis.

The estimates under the intermediate assumptions reflect the payment mechanism for reimbursing ESRD services. Payment for dialysis services occurs through a bundled payment system, which began in 2011. The bundled payment rate is updated annually by an annual ESRD market basket less the increase in economy-wide productivity. Also, the estimates assume a continued increase in enrollment. Table IV.B5 shows the historical and projected enrollment and costs for Part B benefits, including the effects of sequestration.

Table IV.B5.—Fee-for-Service Enrollment and Incurred Reimbursement for Beneficiaries under Age 65 with End-Stage Renal Disease

	Average enrollment [thousands]		Reimbursement [millions]	
Calendar year	Disabled	Non-disabled	Disabled	Non-disabled
2007	107	86	$3,802	$2,577
2008	109	87	4,017	2,658
2009	112	88	4,567	2,663
2010	119	88	4,782	2,719
2011	130	83	5,152	2,526
2012	133	84	5,484	2,658
2013	134	85	5,575	2,645
2014	134	85	5,722	2,683
2015	131	86	5,632	2,651
2016	128	87	5,742	2,549
2017	124	88	5,772	2,657
2018	124	88	5,970	2,779
2019	124	89	6,311	2,947
2020	127	90	6,766	3,106
2021	129	90	7,158	3,273
2022	128	90	7,428	3,441
2023	126	91	7,672	3,612
2024	125	91	7,916	3,796
2025	123	92	9,014	4,412
2026	121	92	9,515	4,739

Note: Amounts do not reflect the effects of the IPAB.

(4) Private Health Plan Costs

Part B payments to private health plans have generally increased significantly from the time that such plans began to participate in the Medicare program in the 1970s. Most of the growth in expenditures has been due to the increasing numbers of beneficiaries who have enrolled in these plans. Section IV.C of this report contains a description of the assumptions and methodology for the private health plans that provide coverage of Part B services for certain enrollees.

(5) Administrative Expenses

The ratio of Part B administrative expenses to total expenditures has been roughly 1.3 percent in recent years. Projections of administrative costs are based on estimates of changes in average annual wages, fee-for-service enrollment, and an assumed 5-percent reduction in expenditures due to sequestration for the period April 2013 through September 2025.

b. Summary of Aggregate Reimbursement Amounts on an Incurred Basis under the Intermediate Assumptions

Table IV.B6 shows aggregate historical and projected reimbursement amounts by type of service on an incurred basis under the intermediate assumptions.

Table IV.B6.—Aggregate Part B Reimbursement Amounts on an Incurred Basis

[In millions]

Calendar year	Practitioner: Physician fee schedule	Practitioner: DME	Practitioner: Lab	Practitioner: Other	Practitioner: Total	Institutional: Hospital	Institutional: Lab	Institutional: Home health agency	Institutional: Other	Institutional: Total	Total FFS	Private health plans	Total Part B
Historical data:													
2007	$58,379	$8,257	$4,064	$15,887	$86,587	$22,424	$3,571	$9,458	$13,023	$48,476[1]	$135,063	$39,454	$174,517
2008	59,686	8,671	4,321	16,416	89,095	24,087	3,707	10,495	13,579	51,869	140,964	47,953	188,917
2009	61,467	8,112	4,737	17,663	91,979	26,338	3,505	11,988	15,535	57,366	149,345	53,309	202,654
2010	64,712	8,301	4,815	18,371	96,199	28,574	3,628	12,309	16,159	60,670	156,869	55,232	212,101
2011	67,806	8,115	4,631	19,347	99,900	31,112	3,835	11,669	16,980	63,596	163,496	59,104	222,601
2012	69,300	8,290	5,141	20,148	102,879	33,931	4,031	11,360	18,140	67,462	170,341	66,074	236,414
2013	68,921	7,380	5,211	20,435	101,948	36,284	3,953	11,289	17,989	69,515	171,463	73,305	244,767
2014	70,144	6,378	5,606	20,960	103,089	41,221	2,728	11,250	18,639	73,837	176,926	85,651	262,577
2015	70,336	6,820	5,799	21,955	104,910	44,854	2,789	11,405	19,378	78,427	183,337	95,007	278,344
2016	70,307	6,501	5,567	23,855	106,230	47,911	2,915	11,520	20,023	82,370	188,600	103,176	291,776
Intermediate estimates:													
2017	71,168	6,052	5,890	24,844	107,954	51,251	3,001	11,841	20,959	87,052	195,006	113,501	308,508
2018	73,355	6,433	5,925	25,965	111,677	56,278	2,942	12,418	20,149	91,787	203,464	124,951	328,415
2019	79,012	7,307	6,344	27,555	120,219	62,100	3,076	13,361	21,492	100,029	220,248	139,112	359,360
2020	84,041	7,918	6,860	29,615	128,434	69,310	3,253	14,470	23,161	110,195	238,629	150,604	389,233
2021	89,189	8,540	7,995	31,675	137,398	76,936	3,716	15,644	24,783	121,080	258,478	164,176	422,655
2022	94,509	9,158	8,577	33,822	146,066	85,166	3,916	16,868	26,381	132,331	278,397	179,391	457,787
2023	100,099	9,814	9,201	35,872	154,986	93,961	4,125	18,168	28,055	144,308	299,294	195,412	494,706
2024	105,814	10,503	10,649	38,702	165,668	103,311	4,688	19,556	29,807	157,362	323,029	213,918	536,947
2025	107,784	11,194	11,356	41,221	171,555	112,972	4,910	20,921	34,713	173,516	345,071	229,468	574,539
2026	116,959	12,275	12,489	45,165	186,887	127,223	5,301	23,066	37,748	193,337	380,224	254,889	635,114

[1]Amounts shown exclude payments inadvertently made from the Part B account in 2005-2007 to cover the costs of certain Part A hospice benefits.

Note: Amounts do not reflect the effects of the IPAB.

c. Projections under Alternative Assumptions

Projections of Part B cash expenditures under the low-cost and high-cost alternatives were developed by modifying the growth rates estimated under the intermediate assumptions. Beginning in calendar year 2016, the low-cost and high-cost alternatives contain assumptions that result in benefits increasing, relative to the Gross Domestic Product (GDP), 2 percent less rapidly and 2 percent more rapidly, respectively, than the results under the intermediate assumptions. Administrative expenses under the low-cost and high-cost alternatives are projected on the basis of their respective wage series growth.

2. Part D

Part D is a voluntary Medicare prescription drug benefit that offers beneficiaries a choice of private drug insurance plans. Low-income beneficiaries can receive additional assistance on the cost sharing and premiums. Each year drug plan sponsors submit bids that include estimated total plan costs, reinsurance payments, and low-income cost-sharing subsidies for the coming year. Upon approval of these bids, a national average bid amount is calculated, and the result is used to determine the national average premium. The individual plan premium is calculated as the difference between the plan bid and the national average bid, which is then applied to the national average premium.

Each drug plan receives monthly risk-adjusted direct subsidies, prospective reinsurance payments, and prospective low-income cost-sharing subsidies from Medicare, as well as premiums from the beneficiaries and premium subsidies from Medicare on behalf of low-income enrollees. At the end of the year, the prospective reinsurance and low-income cost-sharing subsidy payments are reconciled to match the plan's actual experience. During the reconciliation process, if actual experience differs from the plan's bid beyond specified risk corridors, Medicare shares in the plan's gain or loss.

Expenditures for this voluntary prescription drug benefit were determined by combining estimated Part D enrollment with projections of per capita spending. Actual Part D spending information for 2016 was used as the base year.

Medicare also pays special subsidies on behalf of beneficiaries retaining primary drug coverage through retiree drug subsidy (RDS) plans. General revenues primarily finance the various Medicare drug subsidies. Since Medicaid is no longer the primary payer of drug costs

for full-benefit dually eligible beneficiaries, States are subject to a contribution requirement and must pay the Part D account in the SMI trust fund a portion of their estimated forgone drug costs for this population. From 2006 to 2015, the percentage of estimated costs paid by States was phased down from 90 percent to 75 percent. Beneficiaries can choose to have their drug insurance premiums withheld from their Social Security benefits and then forwarded to the drug plans on their behalf.[63] In 2016, around 28 percent of the non-low-income enrollees in Part D drug plans exercised this option.

a. Participation Rates

All individuals entitled to Medicare Part A or enrolled in Part B are eligible to enroll in the voluntary prescription drug benefit.

(1) Employer-Sponsored Plans

There are two ways that employer-sponsored plans can benefit from the Part D program. One way is the retiree drug subsidy (RDS), in which, for qualifying employer-sponsored plans, Medicare subsidizes a portion of their qualifying retiree drug expenses. As a result of tax deduction changes in the ACA, RDS program participation has declined significantly since 2012 and is assumed to decline further over the next several years. The Trustees expect that the majority of the retirees losing drug coverage through RDS plans will participate in other Part D plans.

The other way that an employer-sponsored plan can benefit from Part D is to enroll in an employer/union-only group waiver plan (EGWP) by either wrapping around an existing Part D plan or becoming a prescription drug plan itself. The subsidies for these types of arrangements are generally calculated in the same way as for other Part D plans. The Trustees expect that such plans will offer additional benefits beyond the standard Part D benefit package. Prior to 2015, EGWP enrollment increased significantly, primarily due to the participation of a large percentage of the beneficiaries who lost RDS coverage. In 2015 and 2016, EGWP enrollment did not change considerably because of the termination of certain EGWPs, which counteracted the continued shift from RDS plans to EGWPs. In 2017 EGWP growth returned, with a majority of the enrollment increase occurring in Medicare Advantage Prescription Drug Plans (MA-PDs). Between 2018 and 2020, increases in EGWP enrollment are projected due to a continued transfer of enrollees from RDS plans to EGWPs and

[63]The Part D income-related premium adjustment amount for each beneficiary is deposited into the Part D account.

the natural growth of the program. Total EGWP participation is expected to continue increasing through 2027, although at a slower pace than projected in the 2016 Trustees Report based on recent history.

(2) Low-Income Subsidy

Qualifying low-income beneficiaries can receive various degrees of additional Part D subsidies based on their resource levels to help finance premium and cost-sharing payments. The number of low-income enrollees constitutes about 28 percent of total Part D beneficiaries in 2017 and is assumed to grow at the same rate as that for Medicare beneficiaries who are enrolled in Part B. The proportion of low-income enrollees is projected to remain at approximately 28 percent of total Part D beneficiaries.

(3) Other Part D Beneficiaries

Medicare beneficiaries not covered by employer-sponsored plans and not qualified for the low-income subsidy have the option to enroll in a Part D plan. Once enrolled, they pay for premiums and any applicable deductible, coinsurance, and/or copayment. In 2017, about 62 percent of non-employer and non-low-income Medicare beneficiaries[64] opted to enroll in a Part D plan. Based on recent experience, this participation rate is projected to grow to 65 percent by 2020 and then to level off for the remaining years of the projection period.

Table IV.B7 provides a summary of the estimated average enrollment in Part D, by category.

[64]A significant portion of the remaining eligible beneficiaries who do not participate in Part D plans receive creditable coverage through another source (such as the Federal Employees Health Benefits Program, TRICARE for Life, the Department of Veterans Affairs, and the Indian Health Service).

Table IV.B7.—Part D Enrollment

[In millions]

Calendar year	Retiree drug subsidy[1]	EGWP	Low-income subsidy: Medicaid full-benefit dual eligible	Low-income subsidy: Other, with full subsidy	Low-income subsidy: Other, with partial subsidy	Low-income subsidy: Total	All others	Total
Historical data:								
2007	7.1	1.8	5.9	3.0	0.3	9.2	13.3	31.4
2008	6.8	2.1	6.3	3.2	0.3	9.7	13.9	32.6
2009	6.7	2.3	6.4	3.3	0.3	10.0	14.6	33.6
2010	6.8	2.4	6.6	3.5	0.3	10.4	15.1	34.8
2011	6.2	2.8	6.6	3.7	0.3	10.6	16.0	35.7
2012	5.6	3.6	6.9	3.7	0.3	11.0	17.2	37.4
2013	3.3	5.9	7.2	4.0	0.3	11.5	18.4	39.1
2014	2.7	6.5	7.4	4.1	0.3	11.8	19.5	40.5
2015	2.3	6.5	7.5	4.2	0.3	12.1	21.0	41.8
2016	1.9	6.6	7.7	4.3	0.4	12.3	22.3	43.2
Intermediate estimates:								
2017	1.6	6.7	7.9	4.4	0.3	12.6	23.5	44.5
2018	1.3	6.8	8.1	4.5	0.4	12.9	25.0	46.1
2019	1.1	6.9	8.3	4.6	0.4	13.3	26.5	47.8
2020	0.9	7.0	8.6	4.8	0.4	13.7	27.6	49.2
2021	0.9	7.2	8.8	4.9	0.4	14.1	28.4	50.7
2022	1.0	7.4	9.1	5.0	0.4	14.5	29.3	52.1
2023	1.0	7.6	9.3	5.2	0.4	14.9	30.1	53.5
2024	1.0	7.8	9.5	5.3	0.4	15.3	30.9	54.9
2025	1.0	8.0	9.8	5.4	0.4	15.7	31.6	56.3
2026	1.1	8.2	10.0	5.6	0.4	16.0	32.4	57.7

[1]Excludes Federal Government and military retirees covered by either the Federal Employees Health Benefit Program or the TRICARE for Life program. Such programs qualify for the retiree drug subsidy, but the subsidy will not be paid since it would amount to the Federal Government subsidizing itself.

b. Cost Projection Methodology on an Incurred Basis

(1) Drug Benefit Categories

Projected drug expenses are allocated to the beneficiary premium, direct subsidy, and reinsurance subsidy by the Part D premium formula based on the benefit formula specifications. Meanwhile, the additional premium and cost-sharing subsidies are projected for low-income beneficiaries.

The statute specifies that the base beneficiary premium is equal to 25.5 percent of the sum of the national average monthly bid amount and the estimated catastrophic reinsurance. The average premium amount per enrollee is estimated based on the base beneficiary premium with an adjustment to reflect enrollees' tendency to select plans with below-average premiums. Moreover, Part D collects income-related premiums for individuals whose modified adjusted gross income exceeds a specified threshold. The amount of the income-related premium depends upon the individual's income level. The extra premium amount is the difference between 35, 50, 65, or 80 percent and 25.5 percent applied to the national average monthly bid amount adjusted for reinsurance.

(2) Projections

The projections are based in part on actual Part D spending data through 2016. These data include amounts for total prescription drug costs, costs above the catastrophic threshold, plan payments, and low-income cost-sharing payments.

The estimates under the intermediate assumptions are calculated by establishing the total prescription drug costs for 2016 and then projecting these costs with both Part D expenditure and enrollment growth rates through the estimation period. The growth rate assumptions for Part D costs are based on a Part D-specific short-term trend model and the national health expenditure (NHE) growth rate assumptions.[65] This short-term model provides the 2017 through 2019 drug-specific and therapeutic-class-specific growth rate projections. A transition factor is applied for 2020 and 2021 to converge to the NHE projected growth rates in 2022, which are then used for the remainder of the short-range projection period. Due to a slowdown in several therapeutic classes during 2016, the short-term trend model growth factors are lower than the corresponding NHE overall drug spending growth rates. Most notably in 2016, spending on hepatitis C drugs declined significantly throughout the year and prices for expensive insulin drugs remained relatively flat when compared to growth rates seen in previous years. Table IV.B8 shows the historical and projected Part D per capita growth rates along with the NHE trends.

To determine the estimated benefits for Part D, the total per capita drug costs are adjusted for two key factors. First, Part D benefit costs are reduced for the total amount of rebates that the prescription drug plans receive from drug manufacturers. Second, the plans incur administrative costs for plan operation and earn profits. Table IV.B8 displays these key factors affecting Part D expenditure estimates.

[65]Based on Recommendation II-28 of the 2010-2011 Medicare Technical Review Panel.

Table IV.B8.—Key Factors for Part D Expenditure Estimates[1]

Calendar year	National health expenditure (NHE) drug trend[2]	Part D per capita cost trend[3]	Manufacturer rebates[4]	Plan administrative expenses and profits[5]
Historical data:				
2007	4.2%	1.4%	9.6%	13.6%
2008	1.5	3.8	10.4	13.2
2009	3.8	2.9	11.1	12.7
2010	−0.7	1.3	11.3	13.6
2011	1.5	3.7	11.5	13.1
2012	−0.6	−1.8	11.7	12.1
2013	1.6	2.6	12.9	12.2
2014	11.5	10.9	14.3	11.9
2015	8.1	8.3	18.2	11.6
Intermediate estimates:				
2016	4.1	2.5	22.0	12.0
2017	4.8	3.5	23.8	10.7
2018	6.6	6.7	24.0	11.6
2019	5.4	6.1	24.1	11.3
2020	5.3	5.9	24.3	11.3
2021	5.4	5.6	24.5	11.2
2022	5.5	5.2	24.7	11.1
2023	5.4	5.2	24.9	11.1
2024	5.4	5.1	25.0	11.0
2025	5.4	4.1	25.0	11.0
2026	5.4	5.2	25.0	10.9

[1]These factors do not reflect the impact of the sequestration for 2013-2025.
[2]On February 15, 2017, the CMS Office of the Actuary published the NHE projections through calendar year 2025; for 2026, the drug trend is the same as was used in 2025.
[3]Values reflect ACA add-on and other law changes.
[4]Expressed as a percentage of total drug costs.
[5]Expressed as a percentage of total gross plan benefit payments, which include plan benefits and administrative expenses with profits.

(3) Manufacturer Rebates

Prescription drug plans can negotiate rebates with drug manufacturers. Actual rebates for 2015 were approximately 18.2 percent of total prescription drug costs—significantly higher than the plans estimated in their corresponding bid submissions. For plan years 2016 and 2017, plans have increased their projected rebates, which are significantly higher than projected in last year's report, and the Trustees project slight increases to future rebates throughout the projection period. This upward revision to projected rebates is a major reason for decreases in overall Part D costs when compared to the 2016 Trustees Report. Projected manufacturer rebates are shown in table IV.B8.[66]

[66]These are average rebate percentages across all prescription drugs. Generic drugs, which represent about 87 percent of all Part D drugs dispensed and 24 percent of drug spending in 2016, typically do not carry manufacturer rebates. Many brand-name prescription drugs carry substantial rebates.

(4) Administrative Expenses

Administrative costs and profit margins are estimated from 2017 plan bids. Administrative expenses are projected to grow at the same rate as wages, and profit margins are projected to grow at the same rate as per capita benefits. Since drug expenses grow faster than administrative costs, the administrative expenses as a percentage of benefits slowly decrease over time even though health insurance plans are assessed an annual insurer fee by the ACA beginning in 2014, as shown in table IV.B8. However, under the Consolidated Appropriations Act, 2016, collection of the annual insurer fee is suspended in 2017, causing a one-year reduction in 2017 and a subsequent increase back to prior levels in 2018.

(5) Incurred Per Capita Reimbursements

Table IV.B9 shows estimated enrollments and average per capita reimbursements for beneficiaries in private prescription drug plans, low-income beneficiaries, and beneficiaries in RDS plans. The incurred reimbursements for Part D plans in 2016 and 2017 are expected to decrease slightly primarily due to the projected higher rebates and the spending slowdown in several therapeutic classes in 2016. The direct subsidy and retiree drug subsidy are affected by the sequestration of Medicare expenditures, which applies from April 1, 2013 to September 30, 2025. Under the sequestration, Medicare benefit payments will be reduced by a specified percentage, and administrative expenses will be reduced by an assumed 5 percent.

Table IV.B9.—Incurred Reimbursement Amounts per Enrollee for Part D Expenditures

	Private plans (PDPs and MA-PDs)							
	All beneficiaries				Low-income subsidy		Retiree drug subsidy	
Calendar year	Enrollment (millions)	Direct subsidy	Reinsur-ance	Risk sharing and other	Enrollment (millions)	Subsidy amount	Enrollment (millions)	Subsidy amount
Historical data:								
2007	24.3	$744	$330	−$20	9.2	$1,820	7.1	$548
2008	25.8	687	366	−6	9.7	1,858	6.8	553
2009	26.9	702	375	−27	10.0	1,955	6.7	578
2010	28.0	705	399	−2	10.4	2,020	6.8	570
2011	29.5	681	465	−31	10.6	2,093	6.2	577
2012	31.8	654	486	−35	11.0	2,045	5.6	536
2013	35.8	567	535	−20	11.5	2,023	3.3	514
2014	37.8	492	718	−1	11.8	2,052	2.7	506
2015	39.5	485	840	−28	12.1	2,122	2.3	549
2016	41.3	436	843	−42	12.3	2,163	1.9	564
Intermediate estimates:								
2017	42.8	346	880	−26	12.6	2,196	1.6	584
2018	44.7	353	941	−11	12.9	2,353	1.3	623
2019	46.7	380	1,014	−11	13.3	2,455	1.1	662
2020	48.3	419	1,053	−13	13.7	2,560	0.9	701
2021	49.7	434	1,118	−13	14.1	2,674	0.9	740
2022	51.2	449	1,175	−14	14.5	2,798	1.0	779
2023	52.5	467	1,234	−14	14.9	2,927	1.0	819
2024	53.9	485	1,297	−15	15.3	3,062	1.0	861
2025	55.3	502	1,352	−15	15.7	3,173	1.0	892
2026	56.6	539	1,425	−16	16.0	3,320	1.1	962

Note: Amounts do not reflect the effects of the Independent Payment Advisory Board (IPAB).

(6) Incurred Aggregate Reimbursements

Table IV.B10 shows projected incurred aggregate reimbursements to plans and employers by type of payment.

Table IV.B10.—Aggregate Part D Reimbursement Amounts on an Incurred Basis

[In billions]

Calendar year	Premiums[1]	Direct subsidy	Reinsurance	Low-income subsidy	Retiree drug subsidy	Risk sharing and other[2]	Total
Historical data:							
2007	$4.1	$18.1	$8.0	$16.7	$3.9	−$0.5	$50.3
2008	5.0	17.7	9.4	18.1	3.8	−0.2	53.9
2009	6.1	18.9	10.1	19.6	3.9	−0.7	57.9
2010	6.7	19.7	11.2	21.1	3.9	−0.1	62.5
2011	7.3	20.1	13.7	22.2	3.6	−0.9	66.0
2012	7.8	20.8	15.5	22.5	3.0	−1.1	68.5
2013	9.3	20.3	19.2	23.2	1.7	−0.7	72.9
2014	10.5	18.6	27.2	24.3	1.3	−0.1	81.8
2015	11.5	19.2	33.2	25.6	1.2	−1.1	89.7
2016	12.7	18.0	34.8	26.7	1.1	−1.7	91.6
Intermediate estimates:							
2017	14.1	14.8	37.7	27.6	0.9	−1.1	94.1
2018	15.1	15.8	42.1	30.5	0.8	−0.5	103.8
2019	17.1	17.7	47.4	32.7	0.7	−0.5	115.1
2020	18.7	20.2	50.9	35.1	0.6	−0.6	125.0
2021	20.4	21.6	55.6	37.7	0.7	−0.7	135.3
2022	22.0	23.0	60.1	40.6	0.7	−0.7	145.7
2023	23.7	24.5	64.9	43.6	0.8	−0.7	156.8
2024	25.5	26.1	69.9	46.8	0.9	−0.8	168.4
2025	27.3	27.7	74.7	49.7	0.9	−0.8	179.5
2026	29.4	30.5	80.6	53.2	1.0	−0.9	193.2

[1]Total premiums paid to Part D plans by enrollees (directly, or indirectly through premium withholding from Social Security benefits).

[2]Positive amounts represent net loss-sharing payments to plans, and negative amounts are net gain-sharing receipts from plans. Other payments are one-time in nature. In addition to the risk-sharing amounts, the figures shown in 2006 and 2007 include the reimbursement of State costs under the Medicare Part D transition demonstration. The amount in 2010 includes the $250 rebate to the beneficiaries spending more than the initial coverage limit.

Note: Amounts do not reflect the effects of the IPAB.

d. Projections under Alternative Assumptions

Part D expenditures for the low-cost and high-cost alternatives were developed by modifying the estimates under the intermediate assumptions. Separate modifications were applied to the assumptions for the 2016 projection and to the assumptions for the projected years 2017-2026.

The 2016 base modifications include the following adjustments, since final data for 2016 will not be available until later in 2017:

- ±2 percent to account for the uncertainty of the completeness of the actual spending in 2016. The high-cost scenario increases the spending by 2 percent, and the low-cost scenario decreases the spending by 2 percent.

- ±2 percent for the average manufacturer rebate that drug plans negotiate. The high-cost scenario decreases the average rebate by 2 percent, and the low-cost scenario increases the average rebate by 2 percent.

For the projections beyond 2016, the per capita drug costs for the high-cost and low-cost scenarios are increased, relative to GDP, 2 percent more rapidly and 2 percent less rapidly, respectively, than under the intermediate assumptions. In addition, for RDS participation, participation in the low-income subsidies, and the participation rate for Part D-eligible individuals who do not qualify for the low-income subsidy or receive coverage through employer-sponsored plans, assumptions vary in the alternative scenarios. Table IV.B11 compares these varying assumptions.

Table IV.B11.—Part D Assumptions under Alternative Scenarios for Calendar Years 2016-2026

		Alternatives	
Calendar year	Intermediate assumptions	Low-cost	High-cost
Participation of retiree drug subsidy beneficiaries as a percentage of Part D enrollees			
2016	4.5%	4.5%	4.5%
2017	3.7	3.7	3.7
2018	2.9	3.7	2.0
2019	2.3	3.7	0.9
2020	1.8	3.7	—
2021	1.8	3.7	—
2022	1.8	3.8	—
2023	1.8	3.8	—
2024	1.8	3.8	—
2025	1.8	3.8	—
2026	1.8	3.8	—
Participation of low-income beneficiaries as a percentage of Part D enrollees			
2016	28.6	28.6	28.6
2017	28.3	28.3	28.3
2018	28.1	27.9	28.4
2019	27.9	27.4	28.4
2020	27.9	26.8	29.1
2021	27.9	26.1	29.8
2022	27.8	25.5	30.5
2023	27.8	24.9	31.2
2024	27.8	24.3	31.9
2025	27.8	23.7	32.7
2026	27.8	23.1	33.5
Part D participation rate of the non-employer and non-low-income Part D-eligible individuals			
2016	62.1	62.1	62.1
2017	62.4	62.4	62.4
2018	63.7	61.4	65.7
2019	64.8	60.4	68.8
2020	65.1	60.4	69.1
2021	65.1	60.4	69.1
2022	65.1	60.4	69.1
2023	65.1	60.4	69.1
2024	65.0	60.4	69.1
2025	65.0	60.4	69.1
2026	65.0	60.4	69.1

C. PRIVATE HEALTH PLANS

1. Legislative History

Dating back to the 1970s, some Medicare beneficiaries have chosen to receive their coverage for Part A and Part B services through private health plans. Over time, numerous pieces of legislation have been enacted that have increased or decreased the attractiveness of private plan coverage.

The foundation of the current program was established by the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (Medicare Modernization Act or MMA), which renamed most of the private plans as Medicare Advantage (MA) plans. The MMA also formally designated all private health insurance coverage options available through Medicare as Part C.[67]

Beginning in 2006, payments are based on competitive bids and their relationship to corresponding benchmarks, which are based on an annually developed ratebook. Also, rebates were introduced and are used to provide additional benefits not covered under Medicare, reduce cost sharing, and/or reduce Part B or Part D premiums. From 2006 through 2011, rebates were calculated as 75 percent of the difference, if any, between the benchmark and the bid.

In addition to the plan types that already existed, the MMA provided for the establishment of regional preferred provider organizations (RPPOs) and special needs plans (SNPs). Unlike other MA plans, which define their own service areas, RPPOs operate in pre-defined service areas referred to as regions and have special rules for capitation payment benchmarks, and they received special incentives under the MMA.

SNPs are products designed for, and marketed to, these special population groups: Medicaid dual-eligible beneficiaries, individuals with specialized chronic conditions, and institutionalized beneficiaries. The statutory authority for SNPs, which has been extended several times previously, is scheduled to expire on January 1, 2019.

The ACA made fundamental changes to MA funding by linking the benchmark rates to Medicare fee-for-service costs and by requiring the

[67]Of Medicare beneficiaries enrolled in private plans, about 97 percent are in Medicare Advantage plans, with the remainder in certain holdover plans reimbursed on a cost basis rather than through capitation payments.

use of quality measures to determine eligibility for bonuses and the share of bid savings versus benchmarks to be provided as a rebate.

Beginning in 2012, the ACA requires the MA county-level benchmarks to be based on a multiple of estimated fee-for-service costs in the county. The factor applied for a given county is based on the ranking of its fee-for-service cost relative to that for other counties, and the factors are phased in. The 25 percent, or quartile, of counties with the highest fee-for-service costs will have a factor of 95 percent of county fee-for-service costs; the second quartile, 100 percent; the third quartile, 107.5 percent; and the lowest quartile, 115 percent. Prior to the ACA, most county benchmarks were in the range of 100-140 percent of local fee-for-service costs.

Starting in 2012, plans are eligible to receive specified increases to their benchmark based on their quality rating scores. The statutory provisions call for a bonus of 5 percent for plans with at least a 4-star rating.

The bonuses are doubled for health plans in a qualifying county, defined as a county in which (i) per capita spending in original Medicare is lower than average; (ii) 25 percent or more of eligible[68] beneficiaries enrolled in Medicare Advantage as of December 2009; and (iii) the benchmark rate in 2004 was based on the minimum amount applicable to an urban area. There are special bonus provisions for newly established and low-enrollment plans.

The phase-in of the fee-for-service-based benchmarks was completed in 2017. Also, the phased-in benchmarks, including bonuses, are capped at the pre-ACA level.

The ACA also made changes regarding the share of the excess of benchmarks over bids to be paid to the plan sponsors as rebates, which the legislation varies based on quality. The highest quality plans (4.5 stars or higher) will receive a 70-percent rebate, plans with a quality rating of at least 3.5 stars and less than 4.5 stars will receive a 65-percent rebate, and plans with a rating of less than 3.5 stars will receive a 50-percent rebate.

Finally, the ACA requires that private insurers pay an assessment, or fee, based on their revenues from the prior year. The fees, which were first collected in 2014, apply to most health insurance sectors, including the majority of Medicare private health plans. The

[68]Beneficiaries are eligible for the Medicare Advantage program if they are entitled to coverage in Medicare Part A and enrolled in Medicare Part B.

Consolidated Appropriations Act of 2016 requires a one-year moratorium on these fees for 2017.

It is important to note that Medicare coverage provided through private health plans, or Part C, does not have separate financing or an associated trust fund. Rather, the Part A and Part B trust funds are the source for payments to such private health plans.

2. Participation Rates

a. Background

To account for the distinct benefit, enrollment, and payment characteristics of private health plans, enrollment and spending trends for such plans are analyzed at the product level:

- Local coordinated care plans (LCCPs), which include health maintenance organizations (HMOs), HMOs with a point-of-service option, and local preferred provider organizations (PPOs).
- Private fee-for-service (PFFS) plans.
- Regional PPO (RPPO) plans.
- Special needs plans (SNPs).
- Other products, which include cost plans, Program of All-Inclusive Care for the Elderly (PACE) plans, and Medicare-Medicaid plans (MMPs).

All types of coverage except for those represented in the "other" category are Medicare Advantage plans. Also, the values represented in each category include enrollment not only in plans available to all beneficiaries residing in the plan's service area, but also in plans available only to members of employer or union groups.

b. Historical

Table IV.C1 shows historical and projected private health plan enrollment by type of plan. Between 2007 and 2016, private plan enrollment grew by 9.7 million or 112 percent, compared to growth in the overall Medicare population of 28 percent for the same period.

The Trustees previously estimated that plan enrollment would decrease, starting in 2011, as a result of the benchmark and rebate changes in the ACA. In practice, enrollment continued to increase from

2011 through 2016 in part due to higher payments to MA plans than previously projected. These payments were higher because of various policy actions that offset some of the anticipated payment reductions.

PFFS enrollment dropped 90 percent between 2009 and 2016 primarily due to plan reaction to new statutory provider network requirements beginning in 2011. Most of the enrollees in terminating PFFS plans transferred to LCCP or RPPO plans.

The 2016 enrollment includes 3.2 million beneficiaries with coverage through employer/union-only group waiver plans (EGWPs), the majority of whom are in LCCPs. Beginning in 2017, the bidding requirements for these types of plans have been waived, and payments to these EGWPs, including RPPOs, are based on individual market bids. The new payment methodology for EGWPs is expected to be phased in over a multi-year period.

Table IV.C1.—Private Health Plan Enrollment[1]

[In thousands]

Calendar year	Local CCP HMO	Local CCP PPO	Regional PPO	PFFS	SNP[2]	Other	Total private health plan	Total Medicare	Ratio of private health plan to total Medicare
2007	5,164	366	135	1,623	977	403	8,667	44,368	19.5%
2008	5,396	571	212	2,244	1,224	362	10,010	45,500	22.0
2009	5,758	847	349	2,433	1,343	373	11,104	46,604	23.8
2010	6,261	1,285	740	1,674	1,320	412	11,692	47,720	24.5
2011	6,733	2,192	1,042	602	1,367	447	12,383	48,896	25.3
2012	7,396	2,852	835	526	1,497	483	13,588	50,874	26.7
2013	8,045	3,167	949	388	1,768	527	14,843	52,504	28.3
2014	8,555	3,698	1,040	303	1,990	657	16,243	54,115	30.0
2015	9,121	4,034	1,018	256	2,085	978	17,492	55,542	31.5
2016	9,628	4,157	1,085	232	2,227	1,061	18,391	56,800	32.4
2017	10,224	4,585	1,142	238	2,433	1,157	19,778	58,625	33.7
2018	10,748	4,864	1,198	249	2,559	1,160	20,780	60,337	34.4
2019	13,509	5,490	1,253	261	—	1,183	21,695	62,178	34.9
2020	14,086	5,728	1,306	272	—	1,001	22,393	64,060	35.0
2021	14,642	5,957	1,358	283	—	911	23,150	65,937	35.1
2022	15,182	6,179	1,408	293	—	949	24,011	67,832	35.4
2023	15,701	6,393	1,457	303	—	985	24,839	69,683	35.6
2024	16,193	6,596	1,502	313	—	1,020	25,624	71,482	35.8
2025	16,675	6,793	1,547	322	—	1,054	26,391	73,305	36.0
2026	17,141	6,985	1,590	331	—	1,086	27,133	75,075	36.1

[1]Most private plan enrollees are eligible for Medicare Part A and enrolled in Medicare Part B. Some enrollees have coverage for only Medicare Part B. For example, in 2015 the Part B-only private plan enrollment consisted of 25,000 in local CCPs and 52,000 in the "other" coverage category.
[2]The statutory authority for SNPs is scheduled to expire on January 1, 2019.

c. Projected

The current MA enrollment projection model was developed and implemented in 2015. The concept of this model is to group counties by common characteristics and to model each of these groups using 2011 through 2016 base data, as follows:

- One group for Puerto Rico.
- One group for "cost plan" counties (defined as Part C enrollment in cost plans of at least 35 percent and a minimum Part C penetration rate of 10 percent in 2011).
- Ten groups for urban counties as defined by the fiscal year 2011 core-based statistical area (CBSA) designation. The deciles were compiled based on 2011 penetration rates with an approximately equal number of Part A and Part B beneficiaries in each group.
- Five groups for rural counties as defined by the fiscal year 2011 CBSA designation. The quintiles were compiled based on 2011 penetration rates with an approximately equal number of Part A and Part B beneficiaries in each group.

The projected enrollment is estimated by calculating the penetration growth rates for 2011 through 2016 for each category described above and extrapolating those results through 2026. These growth rates are applied to the enrollment distribution for each county's specific 2016 plan type (for example, LCCP, PFFS, RPPO, and SNP) and are adjusted to reflect applicable legislative changes to the program, as described in more detail below.

The private Medicare health plan enrollment projections for the 2017 Trustees Report are slightly higher than those in the 2016 report. As shown in table IV.C1, the share of Medicare enrollees in private health plans is projected to increase from 32.4 percent in 2016 to 36.1 percent in 2026. Modest increases are expected in private plan penetration rates between 2018 and 2026 due to higher relative bonus payments stemming from assumed improvements in quality rating scores.

SNP enrollment is expected to increase by 15 percent from 2016 through 2018. On January 1, 2019, the statutory authority for SNPs will expire,[69] and it is expected that, beginning in that year, the majority of existing SNP enrollees will join LCCPs and the remaining enrollees will transfer to the Medicare fee-for-service program.

For LCCP-HMOs, enrollment is expected to increase by 6 percent in 2017, the same rate as in 2016. A spike of 26 percent is expected in 2019 due to the influx of enrollees from terminating SNPs. In LCCP-PPOs, enrollment is expected to grow by 10 percent in 2017 after

[69]In practice, the SNP authority has been set to expire as far back as 2008 but has been routinely extended by lawmakers.

increasing 3 percent in 2016. A large portion of the increase in 2017 is from EGWPs.

The "other" category is expected to fluctuate over the next several years mainly due to enrollment in MMPs, which represent health plans that are capitated by CMS and States to provide comprehensive and coordinated care for Medicare-Medicaid enrollees. Since the introduction of MMPs in October 2013, enrollment has grown nationally from approximately 3,400 enrollees in a single State to over 356,000 enrollees across eleven States in September 2016. These contracts are currently set to expire by 2020. It is assumed that once the contracts expire, the majority of the MMP enrollment will return to the Medicare fee-for-service program.

Enrollment in the "other" category is expected to grow by 9 percent in 2017 after increasing by 8 percent in 2016 and by 49 percent in 2015 due to the influx of MMP enrollment. It is expected to be flat in 2018 and to grow by 2 percent in 2019 before declining by 20 percent in 2020 and by 9 percent in 2021. Cost plans, along with MMPs, make up the majority of the enrollment in this coverage category. The historical and projected enrollment changes in cost plans are much more stable than the changes in MMPs.

3. Cost Projection Methodology

a. Background

Benchmarks form the foundation for payments to Medicare Advantage plans. Along with geographic, demographic, and risk characteristics of plan enrollees, these values determine the monthly prospective payments made to private health plans. Medicare Advantage benchmarks vary substantially by county. Prior to 2012, benchmarks had been in the range of 100 percent of local fee-for-service costs (for Parts A and B) to more than 200 percent of such costs in a few areas. Under the ACA, benchmarks will transition to the range of 95-115 percent of fee-for-service costs, plus applicable quality bonuses.

For non-RPPO plans, a plan's benchmark is an average of the statutory capitation ratebook values, weighted by projected plan enrollment in each county in the plan's service area. For RPPOs, the benchmark is a blend of the weighted ratebook values for all Medicare-eligible beneficiaries in the region and an enrollment-weighted average of RPPO bids for the region. The weight applied to the bid component to calculate the blended benchmark is the national Medicare Advantage participation rate.

Plans submit bids equal to their projected per enrollee cost of providing the standard Medicare Part A and Part B benefits. Plans with bids below the benchmark apply the rebate share of the *savings* to aid plan enrollees through coverage of Part A and Part B cost sharing, coverage of additional non-drug benefits, and/or reduction in the Part B or Part D premium. From 2006 to 2011, the rebate share of the difference between a plan's benchmark and bid was 75 percent. For 2012 and later, the rebate percentage is based on the quality rating of the health plan and ranges from 50 to 70 percent. Beneficiaries choosing plans with bids above the benchmark must pay for both the full amount of the difference between the bid and the benchmark and the projected cost of the plans' supplemental benefits.

Medicare capitation payments to a Medicare Advantage plan are a product of the standardized plan bid, which is equal to the bid divided by the plan's projected risk score, and the actual enrollee risk score, which is based on demographic characteristics and medical diagnosis data. The risk score for a given enrollee may be adjusted retrospectively since CMS receives diagnosis data after the payment date.

Rebate payments are based on the projected risk profile of the plan and are not adjusted based on subsequent actual risk scores.

b. Incurred Basis

Private health plan expenditures are forecast on an incurred basis by coverage type. The bid-based expenditures for each quarter are a product of the average enrollment and the projected average per capita bid. Similarly, the rebate expenditures are a product of enrollment and projected average rebates.

Annual per capita benchmarks, bids, and rebates were determined on an incurred basis for calendar years 2007-2016 for each coverage category. These amounts include adjustments processed after the payment due date for retroactive enrollment and risk score updates.

Benchmark growth for 2016 and 2017 will be significantly lower than historical trends because of the phase-in of the fee-for-service-based ratebook beginning in 2012, which will result in lower benchmark rates in most areas. Benchmark growth for years 2018 and later is estimated to be slightly higher than the growth rate of beneficiaries enrolled in Medicare fee-for-service. The phase-in of the fee-for-service-based ratebook will be completed in 2017, and the expectation is that quality bonus payments will increase slightly during this period.

Private health plan expenditures are affected by the sequestration of non-salary Medicare expenditures. Under the sequestration, private health plan benefit payments will be reduced by a specified percentage. For years 2018 and later, the trend in the per capita bids is estimated to be equal to that of beneficiaries enrolled in Medicare fee-for-service.

c. Cash Basis

Cash Medicare Advantage expenditures are largely identical to incurred amounts, since both arise primarily from the monthly capitation payments to plans. Small cash payment adjustments are developed from incurred spending by accounting for the payment lag that results from CMS' receipt of post-payment diagnosis data, retroactive enrollment notifications, and corrections in enrollees' demographic characteristics.

Table IV.C2 shows Medicare private plan expenditures on an incurred and cash basis. The incurred payments are reported separately for the bid-related and rebate expenditures. As noted, most payments to plans are made as they are incurred, and cash and incurred amounts are generally the same.

Table IV.C2.—Medicare Payments to Private Health Plans, by Trust Fund
[Dollar amounts in billions]

Calendar year	Incurred basis[1]			Part A as a percentage of total[2]	Cash basis
	Bid	Rebate	Total		
2007	$71.9	$8.2	$80.1	50.8%	$77.8
2008	87.0	10.4	97.4	50.8	98.7
2009	100.5	11.8	112.3	52.5	112.7
2010	106.1	9.8	115.9	52.4	115.9
2011	113.0	10.8	123.8	52.3	123.7
2012	124.7	11.8	136.5	51.6	136.2
2013	134.4	12.5	146.9	50.2	145.6
2014	147.3	12.0	159.3	46.3	159.6
2015	161.9	12.7	174.6	45.6	172.3
2016	173.8	14.4	188.2	45.2	188.6
2017	188.8	17.5	206.3	45.0	205.8
2018	202.2	19.6	221.8	43.6	221.2
2019	221.7	22.0	243.7	42.9	243.0
2020	238.1	24.4	262.5	42.6	261.9
2021	257.4	27.1	284.5	42.3	283.8
2022	279.8	30.1	309.9	42.1	309.1
2023	303.0	33.4	336.4	41.9	335.5
2024	328.2	37.0	365.2	41.4	364.3
2025	350.5	40.0	390.5	41.2	389.7
2026	385.8	44.8	430.6	40.8	429.3

[1]The bid category includes all expenditures for non-Medicare Advantage coverage.
[2]The remaining percentage is paid from the Part B account of the SMI trust fund.

Note: Amounts do not reflect the effects of the Independent Payment Advisory Board (IPAB).

d. Incurred Expenditures per Enrollee

Table IV.C3 shows estimated incurred per enrollee expenditures for beneficiaries enrolled in private health plans. It combines the values for expenditures from the Part A and Part B trust funds.

Table IV.C3.—Incurred Expenditures per Private Health Plan Enrollee[1]

Calendar year	Local CCP HMO	Local CCP PPO	Regional PPO	PFFS	SNP[2]	Other	Total
Bid-based expenditures[3]							
2007	$8,624	$7,397	$7,461	$7,367	$10,020	$5,043	$8,339
2008	8,914	7,493	7,705	8,087	10,612	5,340	8,724
2009	9,188	7,789	7,774	8,752	11,265	5,285	9,082
2010	9,149	8,072	8,268	8,486	12,210	5,170	9,105
2011	9,160	8,331	8,210	8,277	12,768	4,842	9,152
2012	9,155	8,512	7,919	8,545	12,935	4,943	9,204
2013	8,858	8,521	8,109	8,923	12,710	5,061	9,078
2014	8,734	8,602	8,506	9,281	12,654	6,169	9,085
2015	8,811	8,823	8,439	9,546	12,950	8,205	9,267
2016	8,912	9,154	8,944	10,156	13,094	8,336	9,462
2017	8,981	9,159	9,027	10,257	13,379	8,643	9,566
2018	9,191	9,159	9,293	10,570	13,806	8,589	9,746
2019	10,478	9,993	9,767	11,109	n/a	8,861	10,238
2020	10,965	10,468	10,220	11,623	n/a	7,406	10,652
2021	11,504	10,994	10,721	12,192	n/a	6,230	11,140
2022	12,054	11,531	11,233	12,773	n/a	6,540	11,675
2023	12,616	12,080	11,754	13,365	n/a	6,858	12,222
2024	13,240	12,708	12,332	14,020	n/a	7,232	12,834
2025	13,723	13,179	12,767	14,522	n/a	7,507	13,303
2026	14,691	14,123	13,666	15,544	n/a	8,086	14,246
Rebate expenditures[3]							
2007	$972	$598	$481	$703	$1,800	$0	$951
2008	1,160	776	509	613	1,850	0	1,048
2009	1,272	800	615	478	1,781	0	1,064
2010	1,090	500	397	320	1,146	0	842
2011	1,135	401	474	450	1,132	0	877
2012	1,157	358	510	355	1,084	0	872
2013	1,124	289	456	255	1,119	0	842
2014	1,020	282	352	210	898	0	740
2015	1,049	212	298	217	955	0	731
2016	1,123	290	310	199	925	0	788
2017	1,225	423	387	280	1,050	0	887
2018	1,252	578	366	247	1,105	0	944
2019	1,316	660	403	280	n/a	0	1,014
2020	1,400	704	444	317	n/a	0	1,092
2021	1,494	751	487	356	n/a	0	1,173
2022	1,596	807	534	399	n/a	0	1,255
2023	1,710	866	595	458	n/a	0	1,346
2024	1,833	930	660	520	n/a	0	1,445
2025	1,928	978	712	571	n/a	0	1,521
2026	2,096	1,063	788	639	n/a	0	1,654
Total expenditures[3]							
2007	$9,597	$7,995	$7,942	$8,070	$11,820	$5,043	$9,290
2008	10,075	8,269	8,214	8,700	12,463	5,340	9,773
2009	10,460	8,589	8,389	9,230	13,046	5,285	10,146
2010	10,240	8,572	8,664	8,806	13,356	5,170	9,946
2011	10,295	8,732	8,684	8,727	13,900	4,842	10,029
2012	10,312	8,870	8,429	8,901	14,019	4,943	10,076
2013	9,982	8,809	8,565	9,178	13,829	5,061	9,920
2014	9,754	8,884	8,858	9,491	13,552	6,169	9,824
2015	9,860	9,035	8,737	9,763	13,905	8,205	9,998

Calendar year	Local CCP HMO	Local CCP PPO	Regional PPO	PFFS	SNP[2]	Other	Total
2016	10,035	9,445	9,254	10,354	14,019	8,336	10,249
2017	10,206	9,582	9,414	10,537	14,429	8,643	10,453
2018	10,443	9,737	9,659	10,818	14,912	8,589	10,690
2019	11,793	10,653	10,171	11,389	n/a	8,861	11,253
2020	12,365	11,171	10,664	11,940	n/a	7,406	11,744
2021	12,998	11,746	11,208	12,548	n/a	6,230	12,313
2022	13,650	12,338	11,766	13,172	n/a	6,540	12,930
2023	14,326	12,946	12,349	13,824	n/a	6,858	13,568
2024	15,073	13,637	12,991	14,540	n/a	7,232	14,279
2025	15,651	14,157	13,480	15,093	n/a	7,507	14,824
2026	16,787	15,186	14,454	16,183	n/a	8,086	15,900

[1]Values represent the sum of per capita expenditures for Part A and Part B.
[2]The statutory authority for SNPs is scheduled to expire on January 1, 2019.
[3]The bid category includes all expenditures for non-Medicare Advantage coverage.

Note: Amounts do not reflect the effects of the IPAB.

Average Medicare payments per private plan enrollee vary by geographic location of the plan, plan efficiency, and average reported health status of plan enrollees. LCCPs and SNPs tend to be located in urban areas where prevailing health care costs tend to be above average. Conversely, PFFS plans and RPPOs generally reflect a more rural enrollment. These factors complicate meaningful comparisons of average per capita costs by plan category.

In general, the per capita increases in bids for 2006 through 2009 were in the single-digit range and were correlated with the Medicare fee-for-service trend and the change in risk profile of the plan populations. Changes in per capita bids were relatively flat from 2010 through 2015, with increases amounting to 1.8 percent in total for those years. Per capita bid payments declined by 1.4 percent in 2013 and were flat in 2014 due mainly to the sequester of Medicare payments. Per capita bid payments increased by approximately 2 percent in 2015 and again in 2016, and they are expected to increase in 2017 by 1.1 percent. The smaller growth rate in 2017 was likely due at least partially to the one-year moratorium in insurer fees. For 2018 and later, the per capita bid trend is expected to be equal to the growth in per capita Medicare fee-for-service expenditures.[70] After 2021, average Medicare payments to private plans per enrollee are assumed to follow the aggregate growth trends of the HI and SMI Part B per capita benefits, as described in section IV.D of this report.

There was significant variation in the per capita trend in rebates for 2007 through 2010; this variation reflected the difference in the annual trend between bids and benchmarks. The overall per capita rebate growth rate was flat from 2010 through 2013. Per capita rebates

[70]In addition, it is assumed that the insurer fee will be accounted for in the per capita bids beginning in 2018.

declined significantly in 2014, and to a lesser extent in 2015, due in part to the sequester, the phase-in period of the fee-for-service-based ratebook, and the lower statutory share of benchmark-versus-bid savings to be provided as a rebate. Beginning in 2016, annual increases in per capita rebates are expected due to lower bid growth assumptions in 2016 and 2017 and assumed increases in quality bonus payments.

D. LONG-RANGE MEDICARE COST GROWTH ASSUMPTIONS

Sections IV.A, IV.B, and IV.C have described the detailed assumptions and methodology underlying the projected expenditures for HI (Part A), SMI (Parts B and D), and private health plans (Part C) during 2017 through 2026. These projections are made for individual categories of Medicare-covered services, such as inpatient hospital care and physician services.

As the projection horizon lengthens, it becomes increasingly difficult to anticipate changes in the delivery of health care, the development of new medical technologies, and other factors that will affect future health care cost increases. Accordingly, rather than extending the detailed projections by individual type of service for all future years, the Trustees use a more aggregated basis for setting cost growth assumptions in the long range. With enactment of the ACA and MACRA, such increases are subject to greater uncertainty in the long term, especially for the Medicare program.

The assumed long-range rate of growth in annual Medicare expenditures per beneficiary for this year's report is based on statutory price updates and volume and intensity growth derived from the "factors contributing to growth" model, which decomposes the major drivers of historical and projected health spending growth into distinct factors. The Trustees assume that the productivity reductions to Medicare payment rate updates will reduce volume and intensity growth by 0.1 percent below the factors model projection. The Trustees' methodology is consistent with Finding III-2 and Recommendation III-3 of the 2010-2011 Medicare Technical Review Panel.[71]

Beginning with the 2001 Trustees Report, the Trustees assumed that the increase in average expenditures per beneficiary for the 25th through 75th years of the projection would equal the growth in per

[71]The Panel's final report is available at http://aspe.hhs.gov/health/reports/2013/MedicareTech/TechnicalPanelReport2010-2011.pdf.

capita GDP plus 1 percentage point,[72] as recommended by the 2000 Medicare Technical Review Panel. Starting with the 2006 report, the Trustees revised the methodology to provide for a more gradual transition from historical health cost growth rates, which had been roughly 2 to 3 percentage points above the level of GDP growth, to the ultimate assumed level of GDP plus 0 percent just after the 75th year and for the indefinite future. The year-by-year growth rate assumptions for the 50 years were based on a stylized economic model, and those relative growth rates were scaled so that the 75-year actuarial balance for the HI trust fund was consistent with that generated by the constant GDP plus 1 growth rate methodology.

For the 2010 and 2011 Medicare Trustees Reports, the Trustees assumed a baseline long-range Medicare cost growth assumption, using the methods described above, and then incorporated the effects of the provisions of the ACA. For all HI (Part A) providers and some SMI Part B providers (outpatient hospitals, ambulatory surgical centers, diagnostic laboratories,[73] and most other non-physician services), the annual increases in Medicare payment rates were reduced for 2011 and later by the 10-year moving average increase in economy-wide productivity. The resulting long-range growth assumption averaged the increase in per capita GDP plus 1 percent, minus the productivity factor. The sustainable growth rate formula at that time governed increases in average physician expenditures per beneficiary to equal the rate of per capita GDP growth. The remaining Part B services and all Part D outlays had an assumed average growth rate of per capita GDP plus 1 percent.

In December 2011, the 2010-2011 Medicare Technical Review Panel unanimously recommended a new approach that builds off of the longstanding GDP plus 1 percent assumption while incorporating several key refinements (Recommendation III-1).[74] Specifically, the Panel recommended two separate means of establishing long-range growth rates:

- The first approach is a refinement to the traditional GDP plus 1 percent growth assumption that better accounts for the level of

[72]This assumed increase in the average expenditures per beneficiary excludes the impacts of the aging of the population and changes in the gender composition of the Medicare population, which the Trustees estimated separately.

[73]Starting in 2017, the Protecting Access to Medicare Act of 2014 links payments for laboratory services to private payment rates.

[74]For convenience, the increase in Medicare expenditures per beneficiary, before consideration of demographic impacts, is referred to as the Medicare cost growth rate. Similarly, these growth rate assumptions are described relative to the per capita increase in GDP and characterized simply as GDP plus X percent.

payment rate updates for Medicare (prior to the effects of the ACA) compared to private health insurance and other payers of health care in the U.S. This refinement results in an increase in the long-range pre-ACA baseline cost growth assumption for Medicare to GDP plus 1.4 percent.

- The "factors contributing to growth" model approach builds upon the key considerations underlying the earlier GDP plus 1 percent assumption. The model is based on economic research that decomposes health spending growth into its major drivers—income growth, relative medical price inflation, insurance coverage, and a residual factor that primarily reflects the impact of technological development.[75] It benefits from additional information that was not available when the 2000 Technical Panel recommended the GDP plus 1 percent assumption.

For the 2012 report, the Trustees based the average ultimate Medicare growth rate on the refinement recommended by the Technical Panel and used the factors model to create the specific, year-by-year declining growth rates during the last 50 years of the projection. Beginning with the 2013 report, the Trustees used the statutory price updates and the volume and intensity assumptions from the factors model to derive the year-by-year Medicare cost growth assumptions for the last 50 years of the projection period. The remainder of section IV.D discusses the factors model and its role in the Medicare projections. Appendix V.C explains the methods used to derive the long-range cost growth assumptions underlying the illustrative alternative projection.

The key assumptions and factors model output used in this year's report are similar to those first used in the 2015 report. In subsequent reports, the Trustees will determine if additional historical data warrant a re-evaluation of these assumptions and a re-estimation of the factors model output.

1. Long-Range Growth Assumptions for the Overall Health Sector

The first step to estimate the long-range Medicare trends is to determine the long-range assumptions affecting the overall health sector. The Trustees use the factors model to determine the year-by-year growth rates for the overall health sector over the last 50 years of the projection. Based on the factors model, the Trustees assume that

[75]Smith, Sheila, Newhouse, Joseph P., and Freeland, Mark S. "Income, Insurance, and Technology: Why Does Health Spending Outpace Economic Growth?" *Health Affairs,* 28, no. 5 (2009): 1276-1284.

the long-range per capita overall health spending growth is GDP plus 0.9 percent (or 4.8 percent) for 2041, gradually declining to GDP plus 0.5 percent by 2091 (or 4.3 percent). The per capita increase in overall health care costs is due to the combined effects of general inflation, medical-specific *excess* price inflation (above general price growth), and changes in the utilization of services per person and the intensity or average complexity per service. The Trustees assume that beginning in 2041 (i) general price inflation will remain constant at 2.2 percent per year, as measured by the GDP deflator; (ii) excess medical price inflation will remain constant at 0.8 percent per year, as discussed in more detail below; and (iii) the annual increase in the volume and intensity of services per person will decline gradually from approximately 1.7 percent in 2041 to 1.3 percent in 2091 based on the key economic assumptions and elasticity estimates from the factors model, as described below.

Excess medical price inflation for the overall health sector is assumed to grow at 0.8 percent annually from 2041 through 2091. This assumption is based on the difference between the growth in the personal health care deflator over 1990 to 2015 and the growth in the GDP deflator over the same period.[76] Combining this assumption with the ultimate assumed growth of 2.2 percent per year in the GDP deflator yields the Trustees' estimate of the long-range rate of medical price growth of 3.0 percent annually. Using the relationship between medical price growth and resource-based health sector productivity growth[77] allows for the determination of medical input price growth.[78] For resource-based health sector productivity, the Trustees assume that the rate of growth will be equivalent to published research[79] of

[76]Information on the personal health care deflator is available at http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsHistorical.html.

[77]Resource-based productivity is defined as the real value of provider goods and services divided by the real value of the resources (inputs) used to produce the goods and services, whereas price changes are measured across constant products—that is, defined health services with a constant mix of inputs. Resource-based productivity is used for this decomposition, rather than outcomes-based productivity (which incorporates the estimated value of improvements in health resulting from the services) because Medicare and most other payers reimburse providers based on their resource use.

[78]A third factor, provider profit margins, is assumed to remain constant over the long range.

[79]Information on updated estimates of hospital productivity is available at http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/ReportsTrustFunds/Downloads/ProductivityMemo2016.pdf; Fisher, Charles. "Multifactor Productivity in Physicians' Offices: An Exploratory Analysis." *Health Care Financing Review,* 29, no. 2 (2007): 15-32.

0.4 percent per year. Hence, the Trustees' estimate of the long-range rate of growth of medical input prices is 3.4 percent.

As stated earlier, the factors model is based on economic research that separates health spending growth into its major drivers—income growth, relative medical price inflation, insurance coverage, and a residual that primarily reflects the impact of technological development. The factors model provides the ability to model the expected behavioral effects associated with a continuing increase in the share of national income devoted to consumption of health care services. In particular, this approach is based on historically estimated income and price elasticities and uses measurable key variables, providing a foundation for developing the long-range growth assumptions.[80]

In the factors model, the sensitivity of health cost growth to each of the three factors must be estimated. Each sensitivity is measured as an elasticity, which is the percentage change in cost growth that is caused by a 1-percent change in a factor. The first elasticity, the income-technology elasticity, reflects the increase in demand for health care and new medical technologies in response to growth in income. The second elasticity, the relative medical price elasticity, reflects the sensitivity of consumers and purchasers in consuming health care to changes in excess medical price inflation. The final key elasticity is the insurance elasticity, which reflects the change in demand for medical care as the level of insurance coverage changes.

For the income-technology elasticity, the Trustees developed a time-trend-based method for projecting the elasticity that reflects the historical declining trend, produces results consistent with the elasticity implied by the most recent short-range NHE projections, and converges to 1.0 within a range of roughly 75 to 150 years. In the resulting projection, the income-technology elasticity is 1.26 in the 25th year of the projection period (2041) and declines at a slowing pace to 1.09 in the 75th year of the period (2091). This methodology results in an income-technology elasticity that reaches 1.0 in 2125. These are the same elasticity assumptions that were used for 2041 and 2091 in the 2016 report.

[80]Additional information on the "factors contributing to growth" model is available in a memorandum by the Office of the Actuary titled "The Long-Term Projection Assumptions for Medicare and Aggregate National Health Expenditures," available at https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/ReportsTrustFunds/Downloads/ProjectionMethodology2017.pdf.

For the medical price elasticity, the Trustees assume a rising sensitivity of demand for health care to changes in relative medical price as the share of income devoted to health care rises. The medical price elasticity is determined for a given year by subtracting an income effect from a pure substitution effect. The income effect is determined by multiplying the share of income devoted to health care in that year by the estimated yearly income-technology elasticity. The substitution effect is assumed to be equal to −0.2 and represents the change in demand in response to a change in the relative price of health care holding utility constant. For the 2017 report, the Trustees project the price elasticity to be −0.51 for the 25th year of the projection (2041) and assume that it will follow a non-linear path until it reaches −0.59 in the 75th year of the projection (2091). These are the same elasticity assumptions that were used for 2041 and 2091 in the 2016 report. Based on the RAND Health Insurance Experiment, the insurance elasticity was estimated at −0.2 and was assumed to be unchanged over the long range.[81]

Two additional assumptions are required to complete the factors model determination. First, relative medical price inflation must be estimated over the long-range projection period. As discussed previously, the Trustees assume that relative medical price growth is 0.8 percent per year. Second, insurance coverage is assumed to be unchanged over the long range in order to maintain consistency with the concept of a Medicare projection in which the Medicare benefit package is not altered.

2. Long-Range Growth Assumptions for Medicare

The Trustees have assumed since 2001 that it is reasonable to expect over the long range that the drivers of health spending will be similar for the overall health sector and for the Medicare program. This view was affirmed by the 2010-2011 Medicare Technical Review Panel, which recommended use of the same long-range assumptions for the increase in the volume and intensity of health care services for the total health sector and for Medicare. Therefore, the overall health sector

[81]Newhouse, Joseph P., and the Insurance Experiment Group. *Free for All? Lessons from the RAND Health Insurance Experiment*. Cambridge: Harvard University Press, 1993. The coefficient of this elasticity is negative because the level of insurance coverage is measured using individuals' cost-sharing requirements (such as deductibles and coinsurance).

long-range cost growth assumptions for volume and intensity are used as the starting point for developing the Medicare-specific assumptions.

Prior to the ACA, Medicare payment rates for most non-physician provider categories were updated annually by the increase in providers' input prices for the market basket of employee wages and benefits, facility costs, medical supplies, energy and utility costs, professional liability insurance, and other inputs needed to produce the health care goods and services.[82] To the extent that health care providers can improve their productivity each year, their net costs of production (other things being equal) will increase more slowly than their input prices—but the Medicare payment rate updates prior to the ACA were not adjusted for potential productivity gains. Accordingly, Medicare costs per beneficiary would have increased somewhat faster than for the health sector overall. In particular, the Trustees assume that the full market basket increase would be approximately 3.4 percent annually, or about 0.4 percent greater than the net price increase of 3.0 percent per year described above for the total health sector. The ACA requires that many of these Medicare payment updates be reduced by the 10-year moving average increase in economy-wide productivity, which the Trustees assume will be 1.1 percent per year over the long range. The different statutory provisions for updating payment rates require the development of separate long-range Medicare cost growth assumptions for four categories of health care provider services:

(i) *All HI, and some SMI Part B, services that are updated annually by provider input price increases less the increase in economy-wide productivity.*

Under the ACA, the annual increase in Medicare payment rates for these services will be reduced by the 10-year moving average increase in economy-wide productivity. These gains are estimated to be 1.1 percent per year over the long-range period. Combined with an assumed market basket increase of 3.4 percent, the statutory price update for these services is 2.3 percent per year over the long-range projection period. The initial projected increase in the volume and intensity of these Medicare services is assumed to be equivalent to the average projected growth in the volume and intensity of services for the overall health sector. The Trustees believe that the use of a common baseline rate of volume

[82]Historically, lawmakers frequently reduced the payment updates below the increase in providers' input prices in an effort to slow Medicare cost growth or to offset unwarranted changes in claims coding practices.

and intensity growth across all Medicare services is reasonable, as there would be only a small likelihood that one part of the health sector could continue to grow indefinitely at significantly faster rates of growth than do other parts.

Additionally, the Trustees assume that the growth in Medicare payment rates will reduce the volume and intensity growth of these services by 0.1 percent per year relative to the assumption from the factors model. The Trustees' assumption is also based on Recommendation III-3 of the 2010-2011 Medicare Technical Review Panel, which concluded that there would likely be a small net negative impact on volume and intensity growth due to reduced incentives to develop new technologies, provider exits, and the impact of greater bundling of services for payment purposes.[83] For new technology that leads to new services, the ACA will result in lower fees than would otherwise be the case, and providers will be less likely to adopt new services and innovations, thereby lowering the demand for, and intensity of, the medical care provided. Regarding provider exits, as fee-for-service fees decline relative to the pre-ACA levels, facilities of marginal profitability are likely to exit the Medicare market, reducing capacity and volume. This change could also cause a more bifurcated health system in which only providers that can operate profitably under Medicare offer services to Medicare beneficiaries, with a tendency to provide only the more basic services not associated with new medical technologies. Finally, the innovations being tested under the ACA, such as bundled payments or accountable care organizations, could reduce incentives to adopt new cost-increasing technologies and increase incentives to adopt new cost-decreasing technologies for those participating in these programs and/or could contribute to greater efforts to avoid services of limited or no value within the service bundle.

Reflecting all of these considerations, the year-by-year long-range cost growth assumption for these HI and SMI Part B services starts at 3.9 percent in 2041, or GDP plus 0.0 percent, and gradually declines to 3.5 percent by 2091, or GDP minus 0.3 percent.

[83]Other factors, such as reduced beneficiary cost-sharing requirements, would tend to increase the volume and intensity of services. The assumption of −0.1 percent reflects the Technical Panel's assessment that the overall impact would be a small net decrease in volume and intensity growth.

(ii) *Physician services*

Payment rate updates are 0.75 percent per year for those physicians assumed to be participating in advanced alternative payment models (APMs) and 0.25 percent for those assumed to be participating in the merit-based incentive payment system (MIPS) in the long range. The year-by-year growth rates for physician payments are assumed to be 3.6 percent in 2041, or GDP minus 0.3 percent, declining to 2.8 percent in 2091, or GDP minus 1.0 percent.

(iii) *Certain SMI Part B services that are updated annually by the CPI increase less the increase in productivity.*

Such services include durable medical equipment (DME),[84] ambulatory surgical centers, ambulance services, and medical supplies, which are updated by the CPI and affected by the ACA productivity adjustment. For these services, the Trustees initially assume that the rate of per beneficiary volume and intensity growth is equivalent to that derived for the overall health sector using the factors model. This volume and intensity growth is assumed to be reduced by 0.1 percent per year to reflect the ACA impact, as described above. The post-ACA volume and intensity assumption is combined with the long-range CPI assumption (2.6 percent) minus the productivity factor (1.1 percent) to produce a long-range growth assumption for these SMI Part B services. The corresponding year-by-year growth rates are 3.1 percent in 2041, or GDP minus 0.8 percent, gradually declining to 2.7 percent in 2091, or GDP minus 1.1 percent.

(iv) *All other Medicare services, for which payments are established based on market processes, such as prescription drugs provided through Part D and the remaining Part B services.*

The Trustees assume that per beneficiary outlays for these other Part B services, which constitute about 15 percent of total Part B expenditures in 2025, and for all Part D services grow at the same rate as the overall health sector as determined from the factors model. The services are assumed to grow similarly because their payment updates are determined by market forces, such as the competitive-bidding process for Medicare Part D. The year-by-year growth rates are 4.8 percent in 2041, or GDP plus

[84]Certain DME is subject to competitive bidding, and the price is assumed to grow by the CPI increase less the increase in productivity, the same update specified for DME not subject to bidding.

0.9 percent, gradually declining to 4.3 percent by 2091, or GDP plus 0.5 percent.

In addition, these long-range cost growth rates must be modified to reflect demographic impacts. For example, beneficiaries at ages 80 and above use Part A skilled nursing and home health services much more frequently than do younger beneficiaries. As the beneficiary population ages, Part A costs will grow at a faster rate due to increased use of these services. In contrast, the incidence of prescription drug use is more evenly distributed by age, and an increase in the average age of Part D enrollees has significantly less of an effect on Part D costs.

After combining the rates of growth from the four long-range assumptions, the weighted average growth rate for Part B is 3.6 percent per year for the last 50 years of the projection period, or GDP minus 0.3 percent, on average. When Parts A, B, and D are combined, the weighted average growth rate is 3.7 percent over this same time period, or GDP minus 0.2 percent, while the growth rate in 2091 is 3.7 percent, or GDP minus 0.1 percent.

As in the past, the Trustees have established detailed growth rate assumptions for the initial 10 years of the projection period by individual type of service (for example, inpatient hospital care and physician services), reflecting recent trends and the impact of all provisions of the ACA and other applicable statutory provisions. For each of Parts A, B, and D, the assumed growth rates for years 11 through 25 of the projection period are set by interpolating between the rate at the end of the short-range period and the rate at the start of the final 50 years of the long-range period described above.

V. APPENDICES

A. MEDICARE AMENDMENTS SINCE THE 2016 REPORT

Since the 2016 annual report was transmitted to Congress on June 22, 2016, two laws have been enacted that have an effect on the Medicare trust funds. The more important provisions, from an actuarial standpoint, are described, in brief, in the following paragraphs. Certain provisions with a relatively minor financial impact, but which are important from a policy perspective, are briefly described as well.

1. The Comprehensive Addiction and Recovery Act of 2016 (CARA; Public Law 114-198, enacted on July 22, 2016) included provisions that affect the HI and SMI programs.

CARA Provision Affecting HI and Part B of SMI

- Funding in the amount of $140 million is provided to the Medicare Improvement Fund, from the HI and SMI trust funds in such proportion as is deemed appropriate by the Secretary of Health and Human Services (HHS), for services provided during and after fiscal year 2021.

CARA Provision Affecting Part D of SMI Only

- Medicare prescription drug plans (PDPs)—both stand-alone PDPs and those that are part of Medicare Advantage (MA) plans—are authorized to establish drug management programs for beneficiaries at risk for prescription drug abuse. PDPs that establish such programs must provide, to CMS, data regarding limitations imposed on beneficiaries and data to identify patterns of drug use that may indicate fraudulent, medically unnecessary, or unsafe use.

2. The 21st Century Cures Act (Cures Act; Public Law 114-255, enacted on December 13, 2016) included provisions that affect the HI and SMI Part B programs.

Cures Act Provisions Affecting HI

- For inpatient hospital services, the adjustment to the payment rate increase of 0.5 percentage point for fiscal year 2018, as established by the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA), is reduced to an adjustment of 0.4588 percentage point. (The adjustments to the rate increases of 0.5 percentage point for each of fiscal years 2019 through 2023, as also established by MACRA, are unchanged.)

- The Secretary of HHS is required to prepare a crosswalk that relates Medicare inpatient hospital codes (under the International Classification of Diseases, 10th Revision, Procedure Coding System, or its successor) to Medicare outpatient hospital codes (under the Healthcare Common Procedure Classification System, or its successor) for no fewer than ten surgical procedures that commonly have a one-day length of stay when performed on an inpatient basis. This crosswalk is to be completed no later than January 1, 2018.

- The Medicare hospital readmissions reduction program is to apply adjustments for the socioeconomic status of a hospital's patients, for payments for discharges occurring during fiscal year 2019 and later. Initially, the proportion of a hospital's patients dually eligible for Medicare and Medicaid is to serve as a proxy for socioeconomic status. After completion of studies already required by prior legislation, CMS may consider permanently using a more refined methodology.

- The Rural Community Hospital Demonstration, which provides Medicare cost-based reimbursement to certain small rural hospitals that do not qualify for cost-based reimbursement under the Critical Access Hospital designation, is extended for an additional 5 years, through the end of calendar year 2021. In addition, the application process for participation in the demonstration is to be re-opened, no later than 120 days after enactment, to hospitals in rural areas of any State. Priority is to be given to hospitals in States with low population density; closures of nearby hospitals may also be considered.

- For long-term care hospital (LTCH) discharges occurring during fiscal year 2017, the LTCH 25-percent rule is suspended. (The 25-percent rule generally states that if more than 25 percent of a LTCH's Medicare admissions during the LTCH's cost-reporting period come from the same referring hospital, the admissions beyond the 25-percent threshold are to have their Medicare payment reduced from the LTCH prospective payment system (PPS) rate to a rate based on the inpatient hospital PPS. With the suspension of the 25-percent rule, the threshold of 50 percent or 25 percent, or no threshold at all, depending on the type of LTCH, continues to apply for fiscal year 2017.)

- A change is made to the moratorium that prohibits the classification of new LTCHs and new LTCH satellite facilities

and an increase in beds for existing LTCHs and existing LTCH satellite facilities. (This moratorium is in effect from April 1, 2014 to September 30, 2017, with exceptions provided for the classification of new LTCHs and new LTCH satellite facilities that, prior to April 1, 2014, had obtained a certificate of need, had begun their LTCH qualifying period, or had a binding agreement for construction that meets certain specifics.) No exceptions to the moratorium had been provided to allow existing LTCHs and existing LTCH satellite facilities to increase their number of certified beds; however, under the Cures Act, these existing facilities are permitted to do so. This provision is effective as if the exception for these bed increases had always applied during the moratorium. A reduction to high-cost outlier payments to LTCH standard rate cases, through an increase to the qualifying threshold, is also provided for and is intended to offset costs of the moratorium exceptions provision.

- Several changes are made that involve the LTCH site-neutral provision. (Under the site-neutral provision—which was part of the Continuing Appropriations Resolution, 2014 (CAR), as enacted on December 26, 2013 and described in more detail in the 2014 Trustees Report—patient discharges that meet specific clinical criteria are paid based on the LTCH standard Federal payment rate, while discharges that do not meet the criteria are paid on a site-neutral payment rate, which is the lesser of a rate based on the inpatient hospital PPS comparable amount or 100 percent of the estimated cost. Generally, the site-neutral rate is lower than the LTCH rate. The site-neutral provision is effective for discharges occurring in cost-reporting periods beginning on or after October 1, 2015, but with a 2-year transition period, during which blended payment rates apply.)

  The first modification is to the calculation of the average length of stay for certain LTCHs. Under prior law, consistent with amendments made by CAR, for LTCHs operating under Medicare prior to December 26, 2013 (the resolution's date of enactment), discharges paid at the site-neutral payment rate or by an MA plan were excluded from calculations determining the hospital's average length of stay, effective for cost-reporting periods starting on or after October 1, 2015. (LTCHs are generally defined as having an average length of stay greater than 25 days.) Under the Cures Act, this carve-out of site-neutral and MA discharges (which is generally advantageous to LTCHs) applies to the average length of stay calculation for

newer LTCHs as well. Thus, the average length of stay calculation methodology is now the same for all LTCHs. This provision is effective retroactively, for cost-reporting periods starting on or after October 1, 2015, as if the CAR provision had always applied to all LTCHs.

Next, a temporary exception to the site-neutral criteria is provided for certain LTCHs that primarily treat patients with brain and spinal cord injuries, are non-profit, and have a significant number of admissions from out of state, for all discharges in cost-reporting periods beginning during fiscal years 2018 and 2019.

Finally, a temporary exception to the site-neutral criteria is created for certain discharges from certain LTCHs for beneficiaries receiving treatment for specified types of severe wounds. To qualify for the exception, the stay for one of the specified types of severe wounds must be classified under one of four specified Medicare severity LTCH diagnosis-related groups (MS-LTC-DRGs). Further, the facility must be a grandfathered LTCH. (Grandfathered LTCHs are certain older facilities that have been permitted to retain exclusion from the PPS, despite not meeting certain separateness and control policies with regard to their relationships with their host hospitals.) This provision is effective for these specified discharges occurring in cost-reporting periods that begin during fiscal year 2018.

Cures Act Provisions Affecting HI and Part B of SMI

- The funding amount of $140 million previously provided to the Medicare Improvement Fund (by CARA, as noted above) is increased to $270 million.
- The authority to terminate MA plans based solely on failure to achieve minimum quality ratings under the 5-star rating system is delayed through the end of plan year 2018. (The delay does not prevent CMS from terminating plans based on the other performance categories.)
- The Secretary of HHS is authorized to deny payment for services provided in temporary moratorium areas (which are geographic areas that have been established by CMS for specified types of providers, for the development and improvement of investigating and prosecuting fraud). Previously, denial was based on the location of the provider

rather than on the location of the patient; this provision eliminates the ability of a provider to locate a business office outside of a moratorium area but be paid for services furnished within it.

- Starting in 2019, during the first 3 months of each year, beneficiaries eligible for the MA program (whether enrolled in an MA plan or not) can make one change in how they receive benefits, by switching to the original Medicare FFS program or to a (different) MA plan. Changes to Part D coverage during these periods can be made only by individuals who, before their switch, were enrolled in an MA plan (that is, beneficiaries enrolled in traditional Medicare with a stand-alone Part D plan may not use this enrollment period solely to switch from one Part D plan to another). During these open enrollment and disenrollment periods, sending unsolicited marketing to eligible individuals is prohibited.

- Medicare beneficiaries with end-stage renal disease are allowed to enroll in MA plans, effective for plan years beginning in 2021 and later. Standard acquisition costs for kidneys are to be removed from the capitation rates and paid for by traditional Medicare. CMS is required to report to Congress by December 31, 2023 regarding the impact of this provision on specified measures. (Certain adjustments to, and evaluations of, the risk-adjustment model used in the MA program are also provided for by this section of the Cures Act.)

- Additional requirements are established for assigning Medicare FFS beneficiaries to accountable care organizations (ACOs) under the Medicare shared savings program. (This program enables ACOs to receive payments for savings stemming from care coordination and management.) Specifically, the basis for assignment is required to reflect beneficiaries' utilization of not only primary care services provided by ACO physicians but also services furnished in federally qualified health centers or rural health clinics, effective for performance years beginning on or after January 1, 2019.

Cures Act Provisions Affecting Part B of SMI Only

- Under the competitive bidding program for certain durable medical equipment (DME) items, the transition period is extended, such that the implementation of payments based entirely on the competitively bid rates (rather than on a blend

of these rates and rates under the prior fee schedule payment methodology) is delayed retroactively, from July 1, 2016 to January 1, 2017.

Also, for DME providers in non-competitively bid areas (which are typically smaller metropolitan statistical areas and rural areas in which competitive bidding does not apply, but payments for those certain items are based on the competitively bid rates), new considerations are stipulated for determining adjustments to the competitively bid prices. Specifically, the Secretary of HHS is required to take into account stakeholder input and the highest winning bid in the competitively bid areas and to compare, with respect to non-competitively and competitively bid areas, the average travel distance and cost associated with furnishing the items and services, the average volume of the items and services furnished by suppliers, and the number of suppliers. This provision is effective for services furnished on or after January 1, 2019.

- For infusion drugs furnished by suppliers of DME, the reimbursement methodology is changed from 95 percent of the average wholesale price to the average sales price plus 6 percent (that is, to the methodology used for most physician-administered drugs), effective January 1, 2017. Also, these drugs are removed from the DME competitive acquisition areas, beginning on the date of enactment.

- Qualified home infusion therapy suppliers are to be reimbursed for administering home infusion therapy, effective January 1, 2021. Certain requirements and standards for suppliers, as well as payment methodology, are established.

- As described in last year's report, the Bipartisan Budget Act of 2015 (BBA) directed that outpatient hospital services provided by new off-campus hospital-based outpatient entities (that is, those established on or after the BBA date of enactment of November 2, 2015 and located more than 250 yards from the hospital campus) are excluded from the outpatient hospital PPS, effective for services provided on or after January 1, 2017 (with certain exceptions, particularly for specific dedicated emergency departments). These services are instead to be reimbursed under the Medicare physician fee schedule, at a rate of 50 percent of the applicable outpatient hospital PPS rate for 2017, and as otherwise set by CMS for following years.

The Cures Act provides an exception for off-campus hospital provider-based outpatient entities that were "mid-build" on November 2, 2015. A mid-build entity is one that had a binding written agreement, before November 2, 2015, with an outside unrelated party for actual construction of the new off-campus department. To be eligible under this exception, the host hospital must (i) file a certification that the department meets the mid-build status requirement; (ii) file an attestation that the department is provider-based; and (iii) add the department to the host hospital's Medicare enrollment form. (Both filings are due within 60 days of the date of enactment, and the attestation is subject to audit.) Entities that qualify will be eligible to bill under the outpatient PPS for services provided on or after January 1, 2018.

Under the Cures Act, an off-campus outpatient department can also be eligible for payment under the outpatient hospital PPS for services furnished in 2017 if the host hospital submitted a voluntary attestation, prior to December 2, 2015, stating that the department is provider-based. (Under separate guidance from CMS that governs submission of provider-based attestations, for a hospital to have taken this step, the construction of the new off-campus outpatient department would have been completed and the hospital accepting, or poised to accept, patients. Thus, this exception benefits only a small number of departments that fell just outside of the deadline contained in the BBA.)

To clarify, while the relief for 2017 applies only to off-campus outpatient departments with provider-based attestations filed before December 2, 2015, the relief for 2018 and beyond applies more broadly to off-campus outpatient departments with construction agreements in place as of November 2, 2015 (including hospitals eligible for the 2017 exception). Hence, most hospitals that qualify for the exception under this provision are not eligible for payment under the outpatient PPS during 2017 and are, instead, subject to lower payments for services furnished during that year, with return to the outpatient hospital PPS effective for services furnished on or after January 1, 2018.

- Off-campus outpatient departments of certain cancer hospitals are also granted exception from the BBA provision described above, thereby confirming that the BBA legislation intended these facilities to remain under their existing separate

payment system. To qualify, these locations must file attestations stating that they are provider-based, within 60 days of the date of enactment (for those meeting the provider-based requirement between November 2, 2015 and the date of enactment) or within 60 days of meeting the provider-based requirement. The attestations are subject to audit. A reduction to the additional payments that cancer hospitals receive (relative to payments under the inpatient hospital PPS) is also provided for and is intended to offset costs of the BBA exception for off-campus outpatient cancer hospital departments.

- Physicians who furnish substantially all their Medicare-covered services at ambulatory surgical centers (ASCs) are excluded from Medicare penalties for not meeting the established thresholds for meaningful use of electronic health records (EHRs). (EHR technology is not currently available for ASC encounters.) This exclusion ends the first full year that is more than 3 years after the Secretary of HHS, in consultation with stakeholders, determines that EHRs have become available at the ASC setting.

- Enforcement is delayed an additional year, through December 31, 2016, for the regulation requiring that, for outpatient therapeutic services provided in critical access and small rural hospitals, a physician or non-physician practitioner must provide direct supervision throughout the performance of a procedure.

- For wheelchair accessories and seat and back cushions furnished in connection with complex rehabilitative power wheelchairs, fee schedule adjustments do not apply until July 1, 2017 (which is a delay of 6 months relative to the previously stipulated date of January 1, 2017).

- Physical therapists furnishing outpatient physical therapy services, on a substitute basis, in health professional shortage areas, medically underserved areas, or rural areas are allowed to use the same arrangements for payment purposes as those used by physicians providing physician services on a substitute basis in those areas.

B. TOTAL MEDICARE FINANCIAL PROJECTIONS

Medicare is the nation's second largest social insurance program, exceeded only by Social Security (OASDI). Although Medicare's two components—Hospital Insurance (HI) and Supplementary Medical Insurance (SMI)—are very different from each other in many key respects, it is important to consider the overall cost of Medicare and its financing. By reviewing Medicare's total expenditures, readers can assess the financial obligation created by the program. Similarly, the sources and relative magnitudes of HI and SMI revenues are an important policy matter.

The issues of Medicare's total cost to society and the means of financing that cost are different from the question of the financial status of the Medicare trust funds. The latter focuses on whether a specific trust fund's income and expenditures are in balance. The separate HI and SMI financial projections prepared for this purpose, however, can be usefully combined for the broader purposes outlined above. To that end, this section presents information on combined HI and SMI costs and revenues. Sections III.B, III.C, and III.D of this report present detailed assessments of the financial status of the HI trust fund and the Part B and Part D accounts of the SMI trust fund, respectively.

1. 10-Year Actuarial Estimates (2017-2026)

Table V.B1 shows past and projected Medicare income, expenditures, and trust fund assets in dollar amounts for calendar years,[85] with projections shown under the intermediate set of assumptions for the short-range projection period 2017 through 2026.

[85]The table shows amounts on a *cash* basis, reflecting actual expenditures made during the year, even if the payments were for services performed in an earlier year. Similarly, income figures represent amounts actually received during the year, even if incurred in an earlier year.

Table V.B1.—Total Medicare Income, Expenditures, and Trust Fund Assets during Calendar Years 1970-2026

[In billions]

Calendar year	Total income	Total expenditures	Net change in assets	Assets at end of year
Historical data:				
1970	$8.2	$7.5	$0.7	$3.4
1975	17.7	16.3	1.3	12.0
1980	37.0	36.8	0.1	18.3
1985	76.5	72.3	4.2	31.4
1990	126.3	111.0	15.3	114.4
1995	175.3	184.2	−8.9	143.4
2000	257.1	221.8	35.3	221.5
2005	357.5	336.4	21.0	309.8
2010	486.1[1]	522.9	−36.8	344.0
2011	530.0	549.1	−19.2	324.9
2012	537.0	574.2	−37.3	287.6
2013	575.8	582.9	−7.1	280.5
2014	599.3	613.3	−14.1	266.4
2015	644.4[1]	647.6	−3.2	263.2
2016	710.2[1]	678.7	31.5	294.7
Intermediate estimates:				
2017	707.5	707.2	0.3	295.0
2018	781.1	743.6	37.5	332.5
2019	833.0	807.2	25.9	358.4
2020	905.1[1]	871.4	33.7	392.1
2021	941.3[1]	939.9	1.4	393.5
2022	1,022.4	1,012.8	9.6	403.1
2023	1,092.1	1,088.9	3.2	406.4
2024	1,166.8	1,171.4	−4.7	401.7
2025	1,240.9	1,246.2	−5.3	396.4
2026	1,357.4[1]	1,362.2	−4.7	391.6

[1]Section 708 of the Social Security Act modifies the provisions for the payment of Social Security benefits when the regularly designated day falls on a Saturday, Sunday, or legal public holiday. Payment of those benefits normally due January 3, 2010 actually occurred on December 31, 2009, and payment of benefits normally due January 3, 2016 occurred on December 31, 2015. Consequently, the Part B and Part D premiums withheld from these benefits and the associated Part B general revenue contributions were added to the Part B or Part D account, as appropriate, on December 31, 2009 (about $14.8 billion for Part B and about $0.2 billion for Part D) and December 31, 2015 (about $7.5 billion for Part B and about $0.2 billion for Part D), respectively. Similarly, the payment date for those benefits normally due January 3, 2021 will be on December 31, 2020, and the payment date for those benefits normally due January 3, 2027 will be on December 31, 2026. Accordingly an estimated $14.1 billion will be added to the Part B account, and an estimated $0.3 billion will be added to the Part D account, on December 31, 2020; and an estimated $22.8 billion will be added to the Part B account, and an estimated $0.5 billion will be added to the Part D account, on December 31, 2026.

Note: Totals do not necessarily equal the sums of rounded components.

As indicated in table V.B1, Medicare expenditures have increased rapidly during most of the program's history. From 1985 to 2016, expenditures grew at an average annual rate of 7.5 percent, and they are projected to increase at an average annual rate of 7.2 percent from 2016 through 2026.

Through most of Medicare's history, trust fund income has kept pace with increases in expenditures.[86] The Trustees estimate that total

[86]This balance resulted from periodic increases in HI payroll tax rates and other HI financing, from annual increases in SMI premium and general revenue financing rates (to cover the following year's estimated expenditures), and from frequent legislation designed to slow the rate of growth in expenditures.

Medicare income will increase at a rate (6.7 percent annually) similar to that for expenditures from 2016 through 2026.

The Department of the Treasury has invested past excesses of income over expenditures in U.S. Treasury securities, with total trust fund assets accumulating to $294.7 billion at the end of calendar year 2016. Combined assets decreased from 2009 through 2015, increased in 2016, and are estimated to increase in 2017. The change in assets fluctuates slightly over the remainder of the short-range projection period due to the timing of premium collections, as described in the footnote to table V.B1, and the return of HI deficits. The shift from the actual declines in total Medicare trust fund assets from 2009 through 2015 to significant expected growth in assets from 2016 through 2023 occurs as key provisions of the ACA phase in and as the lower provider payment updates compound over time.[87]

The ACA established a 15-member Independent Payment Advisory Board (IPAB) to develop and submit proposals to Congress aimed at extending the solvency of Medicare, slowing Medicare cost growth, and improving the quality of care delivered to Medicare beneficiaries. The IPAB is required to submit proposals to the President the year following a determination that the projected rate of growth in Medicare spending per beneficiary exceeds a target growth rate.[88] Since 2013, the Chief Actuary at CMS has been required to determine the projected and target growth rates. If the Chief Actuary makes a determination that the projected Medicare per capita growth rate exceeds the per capita target growth rate in the implementation year, the Chief Actuary will establish a savings target for that year. For the 2013 through 2017 determination years, the target growth rates have not been exceeded.

For a given determination year, the rates of growth for Medicare spending and the target are calculated as the 5-year average consisting of the 2 prior years, the current year, and the 2 following years. For example, for the 2017 determination year, 2018 is the proposal year, 2019 is the implementation year, and the 5-year period is 2015-2019. For determination years 2013 through 2017, the target growth rate is

[87]See sections III.B, III.C, and III.D regarding the asset projections for HI and Part B and Part D of SMI, separately.

[88]Beginning in 2019, the ACA provides an exception to the requirement that the IPAB submit proposals if the projected rate of growth for Medicare is less than that for national health expenditures. This exception can occur only if the IPAB was required to submit a proposal in the prior year, and it may not be used in 2 consecutive years. In addition, when there is a determination that the projected increase in the Consumer Price Index-medical care is less than the Consumer Price Index (CPI-U) for the implementation year, the IPAB is not required to submit a proposal.

equal to the average in the Consumer Price Index for All Urban Consumers (all items; United States city average) and the medical care expenditure category of the Consumer Price Index for All Urban Consumers (United States city average). For determination years 2018 and after, the target growth rate is equal to the nominal Gross Domestic Product (GDP) per capita plus 1 percentage point. Table V.B2 presents the projected rates of growth that are used in the IPAB determination. The first determination that the Medicare per capita growth rate exceeds the per capita target growth rate is projected to be made in 2021.

Table V.B2.—Key Rates of Growth for IPAB Determination

[In percent]

Calendar year	Medicare per capita[1]	CPI-U	CPI-medical care	GDP per capita	NHE per capita[2]	IPAB determination[3,4]	
						Medicare	Target[5]
2011	1.9%	3.2%	3.0%	2.9%	2.8%	—	—
2012	0.5	2.1	3.7	3.4	3.2	—	—
2013	−1.1	1.5	2.5	2.7	2.2	1.46%	3.04%
2014	1.9	1.6	2.4	3.5	4.4	0.43	2.61
2015	2.0	0.1	2.6	2.9	5.0	1.70	2.48
2016	1.1	1.2	3.9	2.1	3.8	2.21	2.33
2017	0.4	2.2	4.1	3.8	4.4	2.14	2.87
2018	1.5	3.0	4.6	4.6	4.9	2.69	4.80
2019	5.7	2.7	4.3	4.3	4.9	3.47	5.19
2020	4.8	2.6	4.2	4.2	4.8	4.35	5.17
2021	5.0	2.6	4.2	4.0	4.9	4.95	4.95
2022	4.8	2.6	4.2	3.7	4.9	4.77	4.80
2023	4.5	2.6	4.2	3.5	4.9	4.55	4.68
2024	4.8	2.6	4.2	3.6	4.8	4.90	4.58
2025	3.7	2.6	4.2	3.6	4.7	4.92	4.57
2026	6.8	2.6	4.2	3.5	4.9	4.91	4.59

[1]These amounts differ from those presented in section V.D because they are determined based on the methodology required for the IPAB determination. They are calculated as the sum of the average per capita spending under each of Parts A, B, and D. For Parts B and D, the spending is net of premiums. In addition, the amounts in section V.D include other miscellaneous items such as Medicare Advantage additional premiums.

[2]Source: For years 2012-2025, the national health expenditure (NHE) data were published in February 2017 (*Health Affairs*, vol. 36, no.3) and are available at https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsProjected.html. For 2026, NHE growth rates were determined based on the methods described in section IV.D.

[3]5-year average starting 2 years prior to the determination year and ending 2 years after the determination year. An implementation year is 2 years after a determination year in which Medicare per capita costs are projected to grow at a faster rate than the target, requiring a reduction in spending.

[4]The determination values for 2013-2016 reflect the actual determinations made in those years.

[5]For determinations made in 2013-2017, the target is equal to the average of the growth in the Consumer Price Index for All Urban Consumers (all items; United States city average) and the medical care expenditure category of the Consumer Price Index for All Urban Consumers (United States city average). For 2018 and later determinations, the target rate of growth is per capita GDP plus 1 percent.

2. 75-Year Actuarial Estimates (2017-2091)

Table V.B3 shows past and projected Medicare expenditures expressed as a percentage of GDP.[89] This percentage provides a relative measure of the size of the Medicare program compared to the general economy and represents the portion of the nation's total resources dedicated each year to providing health care services to beneficiaries through Medicare. Expenditures represented 0.7 percent of GDP in 1970 and had grown to 2.6 percent of GDP by 2005, reflecting rapid increases in the factors affecting health care cost growth. Starting in 2006, Medicare provided subsidized access to prescription drug coverage through Part D, which caused most of the increase in Medicare expenditures to 3.0 percent of GDP in the first year. The Trustees project much more moderate continuing growth in the long range, partially as a result of the lower price updates under current law, with total Medicare expenditures projected to reach about 5.9 percent of GDP by 2091.

Part of the projected increase is attributable to the prescription drug benefit in Medicare. When it was fully implemented in 2006, Part D represented 11 percent of incurred Medicare expenditures, and this share increased to 14 percent in 2016. With continuing faster growth in drug costs, relative to the traditional HI and SMI Part B expenditures, the Trustees project that Part D will account for 20 percent of Medicare expenditures by the end of the projection period.

The projections shown in table V.B3 for total Medicare are slightly lower than in the 2016 report primarily due to lower inpatient hospital utilization assumptions for Part A and lower costs for Part D due to higher drug rebates. Part B costs are slightly higher than those projected in the 2016 report.

The details of these changes are described in sections III.B, III.C, and III.D.

[89]In contrast to the expenditure amounts shown in table V.B1, table V.B3 shows historical and projected expenditures on an incurred basis. Incurred amounts relate to the expenditures for services performed in a given year, even if payment for those expenditures occurs in a later year.

Table V.B3.—HI and SMI Incurred Expenditures as a Percentage of the Gross Domestic Product

Calendar year	HI Part A	SMI Part B	SMI Part D	Total
Historical data:				
1970	0.50%	0.21%	—	0.71%
1975	0.71	0.29	—	1.00
1980	0.91	0.40	—	1.31
1985	1.11	0.55	—	1.66
1990	1.12	0.74	—	1.85
1995	1.55	0.87	—	2.42
2000	1.29	0.91	—	2.20
2005	1.43	1.17	0.01%	2.61
2010	1.64	1.44	0.42	3.50
2011	1.65	1.46	0.43	3.53
2012	1.63	1.49	0.43	3.55
2013	1.62	1.49	0.44	3.54
2014	1.56	1.53	0.47	3.56
2015	1.54	1.56	0.50	3.60
2016	1.54	1.60	0.50	3.63
Intermediate estimates:				
2017	1.52	1.61	0.49	3.62
2018	1.50	1.63	0.51	3.64
2019	1.52	1.69	0.53	3.75
2020	1.55	1.74	0.55	3.85
2021	1.59	1.80	0.57	3.96
2022	1.63	1.86	0.59	4.08
2023	1.67	1.92	0.60	4.20
2024	1.70	2.00	0.62	4.32
2025	1.73	2.05	0.63	4.41
2026	1.79	2.16	0.65	4.61
2030	1.90	2.39	0.71	5.01
2035	2.03	2.59	0.77	5.40
2040	2.11	2.66	0.81	5.58
2045	2.14	2.64	0.84	5.62
2050	2.14	2.62	0.87	5.62
2055	2.12	2.60	0.90	5.63
2060	2.11	2.61	0.94	5.67
2065	2.12	2.61	0.98	5.72
2070	2.15	2.62	1.02	5.79
2075	2.17	2.62	1.06	5.85
2080	2.17	2.59	1.09	5.85
2085	2.16	2.56	1.12	5.84
2090	2.15	2.55	1.17	5.86
2091	2.14	2.55	1.17	5.87

Note: Percentages are affected by economic cycles.

The 75-year projection period fully allows for the presentation of anticipated future developments, such as the impact of a large increase in enrollees from 2010 through 2030. This increase in the number of beneficiaries will occur because the relatively large number of persons born during the period between the end of World War II and the mid-1960s (known as the baby boom generation) will reach eligibility age and begin to receive benefits. Moreover, as this generation ages, these individuals will experience greater health care utilization and costs, thereby adding further to growth in program expenditures. Table V.B4 shows past and projected enrollment in the Medicare program.

As indicated in table V.B4, over the last 35 years the total number of Medicare beneficiaries approximately doubled, and the Trustees expect the total to increase by 64 percent over approximately the next 35 years. During this same historical period, the number of covered workers also increased rapidly (by about 55 percent), but the Trustees project this number to increase much more slowly (about 20 percent) over the next 35 years. This demographic shift and its implications for Medicare costs, relative to workers' earnings or to the GDP, are fairly well known.

The enrollment data also show that the number of Medicare beneficiaries enrolled in private health plans under Part C has increased substantially in recent years. This increase reflects the higher Medicare payments to Medicare Advantage plans specified by the Medicare Modernization Act, which enabled these plans to offer additional benefit coverage. (Section IV.C of this report describes the changes in enrollment growth since 2005.)

By 2018, the Trustees estimate that over 34 percent of eligible Medicare beneficiaries will be enrolled in private Part C health plans. The Trustees expect modest increases in private plan penetration rates between 2020 and 2026, with the estimated proportion of beneficiaries in such plans ultimately stabilizing at about 36 percent.

Table V.B4.—Medicare Enrollment

[In thousands]

Calendar year	HI Part A	SMI Part B	SMI Part D	Part C	Total[1]
Historical data:					
1970	20,104	19,496	—	—	20,398
1975	24,481	23,744	—	—	24,864
1980	28,002	27,278	—	—	28,433
1985	30,621	29,869	—	1,271	31,081
1990	33,747	32,567	—	2,017	34,251
1995	37,175	35,641	—	3,467	37,594
2000	39,257	37,335	—	6,856	39,688
2005	42,233	39,752	1,841	5,794	42,606
2010	47,365	43,882	34,772	11,692	47,720
2011	48,549	44,917	35,720	12,383	48,896
2012	50,540	46,477	37,448	13,588	50,874
2013	52,169	47,952	39,103	14,843	52,504
2014	53,777	49,413	40,499	16,243	54,115
2015	55,205	50,744	41,804	17,492	55,542
2016	56,463	52,088	43,191	18,391	56,800
Intermediate estimates:					
2017	58,287	53,525	44,461	19,778	58,625
2018	59,999	55,038	46,074	20,780	60,337
2019	61,839	56,648	47,806	21,695	62,178
2020	63,720	58,325	49,224	22,393	64,060
2021	65,595	59,993	50,658	23,150	65,937
2022	67,489	61,680	52,110	24,011	67,832
2023	69,338	63,342	53,527	24,839	69,683
2024	71,134	64,946	54,904	25,624	71,482
2025	72,955	66,570	56,298	26,391	73,305
2026	74,723	68,163	57,655	27,133	75,075
2030	80,866	73,689	62,329	28,890	81,223
2035	85,823	78,064	66,029	30,613	86,178
2040	88,453	80,399	68,004	31,474	88,803
2045	90,103	81,843	69,226	[2]	90,452
2050	92,261	83,772	70,857	[2]	92,616
2055	95,127	86,298	72,994	[2]	95,492
2060	98,669	89,522	75,721	[2]	99,048
2065	102,023	92,591	78,317	[2]	102,410
2070	105,765	96,004	81,204	[2]	106,159
2075	109,705	99,619	84,262	[2]	110,104
2080	112,157	101,928	86,215	[2]	112,551
2085	115,201	104,646	88,513	[2]	115,587
2090	119,583	108,572	91,835	[2]	119,961
2091	120,459	109,368	92,507	[2]	120,835

[1]Number of beneficiaries with HI and/or SMI coverage.
[2]The Trustees do not explicitly project enrollment in Part C beyond 2040.

Table V.B5 shows the past and projected amounts of Medicare revenues as a percentage of total non-interest Medicare income, under the intermediate assumptions. The table excludes interest income, which would not be a significant part of program financing in the long range.

Table V.B5.—Medicare Sources of Income as a Percentage of Total Non-Interest Income

Calendar year	Payroll taxes	Tax on benefits	Premiums[1]	Brand-name drug fees	State transfers	General revenue[2]
Historical data:						
1970	61.8%	—	13.7%	—	—	24.6%
1980	68.0	—	8.6	—	—	23.4
1990	62.2	—	9.8	—	—	27.9
2000	59.8	3.6%	9.1	—	—	27.6
2010	38.9	2.9	13.3	—	0.9%	44.0
2015	38.1	3.2	13.6	0.5%	1.4	43.2
2016	36.3	3.3	12.8	0.4	1.4	45.7
Intermediate estimates:						
2017	38.4	3.5	14.3	0.6	1.6	41.5
2020	35.3	3.7	15.3	0.3	1.6	43.8
2030	29.4	4.5	16.6	0.2	1.7	47.6
2040	27.5	4.6	17.1	0.1	1.8	48.8
2050	28.0	4.7	17.0	0.1	1.9	48.4
2060	28.2	4.7	16.9	0.0	2.0	48.2
2070	28.1	4.8	16.8	0.0	2.2	48.1
2080	28.2	4.7	16.8	0.0	2.3	48.0
2090	28.3	4.7	16.7	0.0	2.4	47.9
2091	28.3	4.7	16.6	0.0	2.4	47.9

[1]Includes premium revenue from HI and both accounts in the SMI trust fund.
[2]Includes Part B repayment amounts in 2016-2021.

Note: Row sums may not exactly equal 100 percent due to rounding.

General revenues (primarily those for SMI) represented 46 percent of total non-interest income to the Medicare program in 2016 and have constituted the largest share of Medicare financing since 2009. HI payroll taxes were the next largest source of overall financing at 36 percent. Beneficiary premiums (again, primarily for SMI) were third, at 13 percent. Projected HI tax revenues fall short of projected HI expenditures for most future years. In contrast, SMI premium and general revenues will keep pace with SMI expenditure growth, and State payments[90] (on behalf of Medicare beneficiaries who also qualify for full Medicaid benefits) will grow with Part D expenditures. General revenue transfers to the Part B account increased significantly in 2016, as required by the Bipartisan Budget Act of 2015 to compensate for premium revenue that was not received in 2016 due to the hold-harmless provision. Under the ACA, another source of Part B financing, from fees on manufacturers and importers of brand-name prescription drugs, will increase from $2.5 billion in 2011 to $4.1 billion in 2018 but then decrease to $2.8 billion for 2019 and later. In the absence of legislation, HI tax income would represent a declining portion of total Medicare revenues. In 2029, for example, the projected year of depletion of the HI trust fund, currently scheduled HI payroll taxes would represent about 30 percent of total non-interest Medicare

[90]State payments to Part D amounted to 90 percent of their projected forgone Medicaid prescription drug costs in 2006, and this percentage phased down over a 10-year period to 75 percent in 2015.

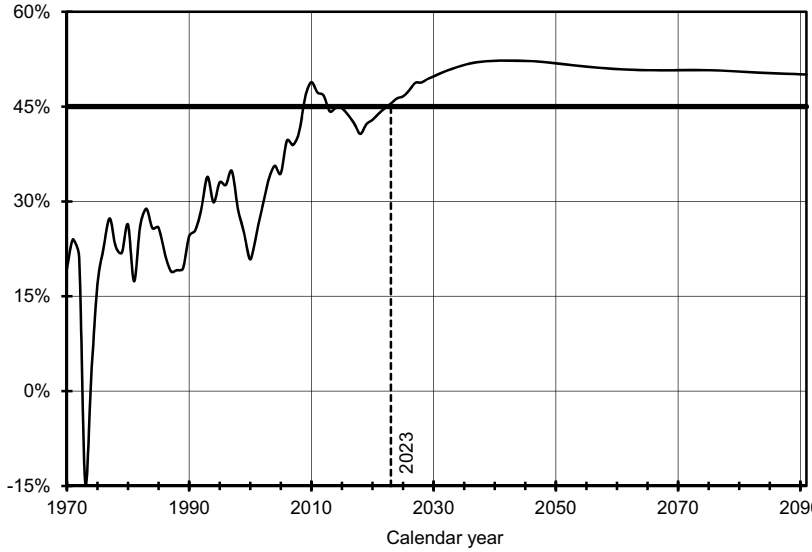
income. General revenues and beneficiary premiums would equal about 47 and 17 percent, respectively.

The law requires an expanded analysis of the combined expenditures and dedicated revenues of the HI and SMI trust funds. In particular, the law requires a determination as to whether the difference between total Medicare outlays and its dedicated financing sources is projected to exceed 45 percent of total outlays within the next 7 fiscal years (2017-2023). Dedicated Medicare financing sources include HI payroll taxes; income from taxation of Social Security benefits; State transfers for the prescription drug benefit; premiums paid under Parts A, B, and D; fees on brand-name prescription drugs paid to Part B; and any gifts received by the Medicare trust funds. The test uses expenditures adjusted to avoid temporary distortions arising from the payment of Medicare Advantage capitation amounts in September when the normal October payment date is a Saturday or Sunday.

Lawmakers established the 45-percent test to help call attention to Medicare's impact on the Federal budget. The Trustees made determinations of excess general revenue Medicare funding in each of the reports for 2006 through 2013. Two consecutive such determinations trigger a Medicare funding warning. The 2007 through 2013 reports thus prompted Medicare funding warnings. Such findings require the President to submit to Congress, within 15 days after the date of the Budget submission for the succeeding year, proposed legislation to respond to the warning. The law also requires Congress to consider the legislation proposed in response to Medicare funding warnings on an expedited basis. To date, elected officials have not enacted legislation responding to these funding warnings.

Figure V.B1 displays, on a calendar-year basis, the historical and projected ratio of the difference between total Medicare outlays and dedicated financing sources to total Medicare outlays. As indicated, this ratio exceeded 45 percent at the end of calendar years 2009 through 2012 and is expected to again exceed that level at the end of calendar year 2023, the seventh year of the projection. Therefore, the Board of Trustees is issuing a determination of excess general revenue Medicare funding in this report.

Figure V.B1.—Projected Difference between Total Medicare Outlays and Dedicated Financing Sources, as a Percentage of Total Outlays



As figure V.B1 also indicates, the Board projects that the difference between outlays and dedicated funding sources will reach almost 52 percent of outlays by 2041 and will decline to 50 percent by the end of the 75-year period. It is important to recognize that current law provides for general revenue transfers only for certain purposes related to Parts A, B, and D, as follows:

- Financing specified portions of SMI Part B and SMI Part D expenditures;
- Reimbursing the HI trust fund for the costs of certain uninsured beneficiaries;
- Paying interest on invested assets of the trust funds; and
- Redeeming the special Treasury securities held as assets by the trust funds.

The difference between outlays and dedicated funding sources, as shown in figure V.B1, reflects all of these general revenue transfers, plus the imbalance between HI expenditures and dedicated revenues after HI asset depletion in 2029. There is no provision under current law to cover the shortfall after 2029.

The law also requires a comparison of projected growth in the difference between outlays and dedicated revenues with other health spending growth rates. Table V.B6 contains this comparison.

Table V.B6.—Comparative Growth Rates of Medicare, Private Health Insurance, National Health Expenditures, and GDP

	Average annual growth in:				
Calendar year	Incurred outlays minus dedicated revenues	Incurred Medicare outlays	GDP	National health expenditures[1]	Private health insurance[1]
2011	0.8%	4.7%	3.7%	3.5%	3.7%
2012	3.3	4.5	4.1	4.0	3.4
2013	−0.3	3.2	3.3	2.9	2.1
2014	5.4	4.8	4.2	5.3	5.8
2015	3.9	4.9	3.7	5.8	7.2
2016	−0.2	3.7	2.9	4.8	5.9
2017	1.8	4.6	4.8	5.4	6.5
2018	3.3	6.1	5.5	5.8	5.9
2019	12.4	8.5	5.3	5.9	5.5
2020	9.6	7.9	5.2	5.8	4.8
2021	10.5	8.0	5.0	5.8	5.1
2022	9.8	7.7	4.6	5.8	5.1
2023	9.3	7.5	4.4	5.8	5.0
2024	9.5	7.6	4.5	5.7	5.0
2025	7.4	6.5	4.5	5.6	4.8
2026	12.1	9.2	4.4	5.6	4.8
2027-2041	6.3	5.7	4.4	5.5	—
2042-2066	4.4	4.5	4.4	5.0	—
2067-2091	4.4	4.4	4.3	4.9	—

[1]Based on national health expenditure (NHE) projections article published in February 2017 (*Health Affairs*, vol. 36, no. 3). Data through 2015 are considered historical, and years after 2025 were determined based on the methods described in section IV.D. The findings presented in this article, along with the paper outlining its methodology, are available at http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsProjected.html.

As shown in table V.B6, the gap between outlays and dedicated revenues slowed after 2010 as Medicare spending decelerated and as cost-reducing provisions of the ACA began taking effect. This gap will increase faster than outlays in many years through 2041 since the dedicated sources of income to the HI trust fund will generally cover a decreasing percentage of HI outlays.

In addition to projected Medicare outlay growth, table V.B6 shows projected growth in GDP, total NHE in the U.S., and private health insurance expenditures. The Trustees expect each of the health expenditure categories to continue the longstanding trend of increasing more rapidly than GDP in most years. Private health insurance expenditures equal the total premiums earned by private health insurers, including benefits incurred and the net cost of insurance. The net cost of insurance includes administrative costs, additions to reserves, rate credits and dividends, premium taxes, and profits or losses.

Several factors affect comparisons between aggregate Medicare and private health insurance cost growth:

- The number of Medicare beneficiaries is currently increasing by about 3 percent per year, and this growth rate will continue as more of the post-World War II baby boom generation reaches eligibility age. The number of individuals with private health insurance is estimated to increase at slower rates than the growth in the number of Medicare beneficiaries, though growth is anticipated to have temporarily accelerated in 2014 and 2015 due to the availability of Federal premium and cost-sharing subsidies for many individuals and families under the ACA.

- Certain ACA provisions, such as the limitation on maximum out-of-pocket costs in 2014 and later and the 40-percent excise tax on high-cost employer-sponsored insurance plans in 2020 and later, will also affect the average actuarial value of private health insurance benefits.

- The use of health care services differs significantly between Medicare beneficiaries (who are generally over 65) and individuals with private health insurance (who are predominantly below age 65). The former group, for example, has a higher incidence of hospitalization, skilled nursing care, and home health care. For the latter group, physician services represent a greater proportion of their total health care needs. Different cost growth trends by type of service will affect overall growth rates and reflect the distribution of services for each category of people.

- There is some overlap between people with Medicare and those with private health insurance. For example, many Medicare beneficiaries have supplemental health insurance coverage through private Medigap insurance policies or employer-sponsored retiree health benefits, and private health insurance includes both of these categories. About 10 million Medicare beneficiaries receive supplemental coverage through the Medicaid program; neither the growth rates for Medicare nor those for private health insurance reflect the Medicaid costs for these dual beneficiaries.

A number of research studies have attempted to control for some or all of these differences in comparing growth trends. Over long historical periods, average, demographically adjusted, per capita growth rates for common benefits have been somewhat lower for Medicare than for private health insurance. For shorter periods, however, the rates of growth have often diverged substantially, and the differential has been

negative in some years and positive in others. More information on past and projected national and private health expenditures, and on comparisons to Medicare growth rates, is available in the sources cited in table V.B6.

C. ILLUSTRATIVE ALTERNATIVE PROJECTIONS

The Social Security Act requires the Trustees to evaluate the financial status of the Medicare trust funds. To comply with this mandate, the Trustees must assess whether the financing provided under current law is adequate to cover the benefit payments and other expenditures required under current law. Accordingly, the estimates shown in this report are based on all of the current statutory requirements, including (i) the reductions in payment updates by the increase in economy-wide productivity for most non-physician provider categories; (ii) the physician payment updates specified by MACRA for all future years; and (iii) the operations of the Independent Payment Advisory Board.

As discussed in the Introduction, there is substantial uncertainty regarding the adequacy of future Medicare payment rates under current law. This section illustrates the higher Medicare outlays that would result if certain statutory Medicare payment provisions were not fully implemented in all future years.

For all Part A services and some other (non-physician) Part B services, payment updates will be reduced in all future years by the increase in economy-wide productivity.[91] By the end of the long-range projection period, payment rates for affected providers would be about 58 percent lower than their level in the absence of these reductions. Currently, the Medicare payment rates for inpatient hospital services have declined to about 60 percent of those paid by private health insurance.[92] If future improvements in productivity were to remain similar to what providers have achieved in the recent past (about 0.4 percent annually), then Medicare payment levels for inpatient hospital services at the end of the long-range projection period would be less than 37 percent of the corresponding level paid by private health insurance. This comparison assumes that private payer rate increases would continue to be set through the same negotiation process used to date, independent of the Medicare reductions or other health system changes. Specifically, private payer rates would grow by 3.0 percent per year, or the increase in the price of inputs to the provision of health care (3.4 percent) less the assumed growth in hospital productivity

[91]In addition to the productivity adjustments, current law requires certain other reductions in payment updates for 2010 through 2019. For inpatient hospital services, the cumulative impact of these adjustments is a further reduction of 3.6 percent in payment levels. Also, Medicare payments to providers will be affected by the sequestration of outlays in April 2013 through September 2025.

[92]See http://www.aha.org/research/reports/tw/chartbook/2015/table4-4.pdf. Private payer hospital payments are roughly 44 percent above costs while Medicare hospital payments are roughly 12 percent below costs.

(0.4 percent). By comparison, Medicare payment rates would grow by 2.3 percent per year, or 3.4 percent less the assumed growth in economy-wide productivity (1.1 percent).

Simulations that take into account the lower Medicare payment rates, other payment provisions, sequestration, changes to Medicare and Medicaid disproportionate share payments, and coverage expansions collectively suggest a deterioration of facility margins for hospitals, skilled nursing facilities, and home health agencies, particularly over the long run. From 2011 through 2019, the simulations suggest that slightly more hospitals would experience negative total facility margins and that almost 15 percent more would experience negative Medicare margins. Other factors, such as efforts to improve efficiency in lower-performing hospitals, could mitigate some of the impact of the ACA payment provisions, though there is a wide range of uncertainty regarding these types of behavioral changes. By 2040, simulations suggest that approximately half of hospitals, 70 percent of skilled nursing facilities, and over 80 percent of home health agencies would have negative total facility margins, raising the possibility of access and quality-of-care issues for Medicare beneficiaries. A memorandum on these provider margin simulations is available on the CMS website.[93]

Over time, unless providers could alter their use of inputs to reduce their cost per service correspondingly, Medicare's payments for health services would fall increasingly below providers' costs. Providers could not sustain continuing negative margins and would have to withdraw from serving Medicare beneficiaries or (if total facility margins remained positive) shift substantial portions of Medicare costs to their non-Medicare, non-Medicaid payers. Under such circumstances, lawmakers might feel substantial pressure to override the productivity adjustments, much as they did to prevent reductions in physician payment rates while the sustainable growth rate (SGR) system was in effect.

While the physician payment system put in place by MACRA avoided the significant short-range physician payment issues resulting from the SGR system approach, it nevertheless raises important long-range concerns that will almost certainly need to be addressed by future legislation. In particular, additional updates totaling $500 million per year and 5-percent annual bonuses are scheduled to expire in 2025, resulting in a payment reduction for most physicians. In addition, the

[93]See http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/ReportsTrustFunds/Downloads/ACAmarginsimulations2017.pdf.

law specifies the physician payment updates for all years in the future, and these updates do not vary based on underlying economic conditions, nor are they expected to keep pace with the average rate of physician cost increases. 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 Trustees estimated that physician payment rates under current law will be lower than they would have been under the SGR formula by 2048 and will be about 30 percent lower by 2091. Absent a change in the delivery system or level of update by subsequent legislation, the Trustees expect access to Medicare-participating physicians to become a significant issue in the long term.

The Independent Payment Advisory Board (IPAB) must submit proposals to the President for years in which the projected rate of growth in Medicare spending per beneficiary exceeds specified thresholds. For 2015 through 2019, the threshold rate of growth in Medicare spending per beneficiary is the average of the increases in the Consumer Price Index (CPI-U) for all items and in the CPI-medical care. Thereafter, the law requires IPAB proposals if the projected rate of growth in Medicare spending exceeds the estimated increase in GDP plus 1 percent.[94] The IPAB's proposals will automatically take effect unless lawmakers enact an alternative measure that achieves the same level of savings. As a result of the other savings provisions incorporated into current law, the Trustees estimate that the IPAB provision will reduce Medicare growth rates for the first time in 2023, and by only 0.002 percent in that year. In addition, the Trustees project that rates will be reduced by similar small amounts in 2026, 2027, 2028, 2030, 2033, and 2035. The IPAB is not triggered beyond 2035 in current law, mostly due to the assumptions about long-range health care cost growth, which is lower than GDP growth. (See section V.B for more details about the IPAB determination.)

In view of these issues, it is important to note that the actual future costs for Medicare may exceed the projections shown in this report, possibly by substantial amounts. Use of an alternative projection can illustrate the potential magnitude of this difference.

---

[94]The effects of the IPAB's proposals on Medicare expenditures are limited to 0.5 percentage point in 2015, 1.0 percentage point in 2016, 1.25 percentage points in 2017, and 1.5 percentage points in 2018 and subsequent years (or, if smaller, the amount by which the rate of growth in Medicare spending exceeds the threshold growth rate). A number of other provisions govern the operations of the IPAB; appendix V.A in the 2010 Medicare Trustees Report summarizes these additional provisions.

It is conceivable that health care providers could improve their productivity, reduce wasteful expenditures, and take other steps to keep their cost growth within the bounds imposed by the Medicare price limitations. For such efforts to be successful in the long range, however, providers would have to generate and sustain unprecedented levels of productivity gains—a very challenging and uncertain prospect.

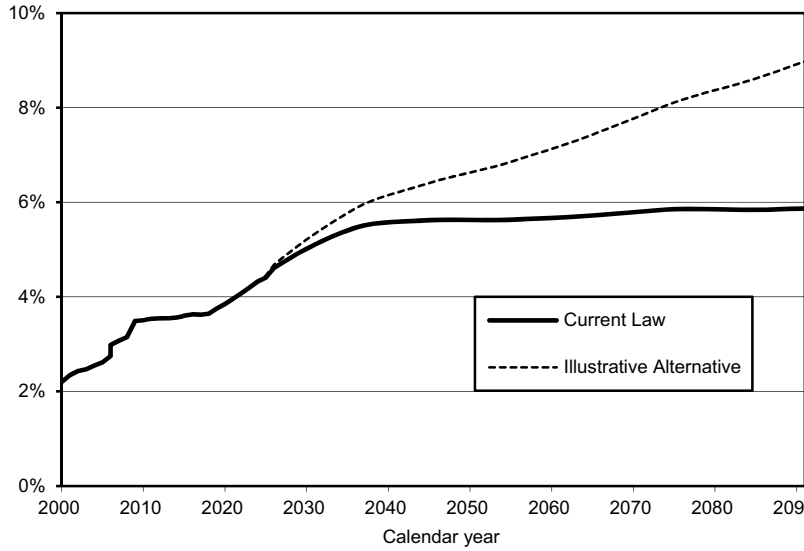
A transformation of health care in the U.S., affecting both the means of delivery and the method of paying for care, is also a possibility. Private health insurance and Medicare are taking important steps in this direction by initiating programs of research into innovative payment and service delivery 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 and 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. 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. Given these uncertainties, it will be important for policy makers to monitor the adequacy of Medicare payment rates over time to ensure beneficiary access to high-quality care.

To help illustrate and quantify the potential magnitude of the cost understatement, the Trustees asked the Office of the Actuary 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 2025, physician payments transition from a payment update of 0.6 percent to an increase of 2.2 percent.

Figure V.C1 compares the illustrative alternative projection with the projections under current law.[95]

Figure V.C1.—Medicare Expenditures as a Percentage of the Gross Domestic Product under Current Law and Illustrative Alternative Projections



Note: Percentages are affected by economic cycles.

The top curve in figure V.C1 shows the cost levels under the illustrative alternative. This scenario illustrates the impact that would occur if the productivity adjustments gradually phased down, starting in 2020, until the Medicare price updates equaled those assumed for private health plans in 2034.[96] It also reflects physician payment updates that transition from 0.6 percent to the MEI increase of about 2.2 percent by 2041 and 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 IPAB

[95]The 2010-2011 Medicare Technical Review Panel supported the continued use of illustrative alternative projections for this purpose (Recommendation IV-3). In addition, the Panel recommended a graphical comparison of the current-law and alternative projections within the Medicare annual report, highlighting the potential effects of both the SGR system and productivity adjustments (Recommendation IV-4). The Panel's report, *Review of Assumptions and Methods of the Medicare Trustees' Financial Projections,* can be found at http://aspe.hhs.gov/health/reports/2013/MedicareTech/TechnicalPanelReport2010-2011.pdf. The text summarizes the specific assumptions chosen by the Trustees for the illustrative alternative projections.

[96]Section IV.D of this report describes the price component of health care cost increases for the overall health sector.

requirements would not be implemented. On average under this alternative, the long-range per beneficiary growth rate for all Medicare services would be similar to the long-range growth rate assumed for the overall health sector. These growth rates are the same as those in the 2016 report.

As indicated in figure V.C1, Medicare costs as a percentage of GDP would continue to increase rapidly throughout the projection period absent the full economy-wide productivity adjustments, legislated physician payment rate updates, expiration of the bonuses for physicians in advanced APMs and of the additional payments for physicians in MIPS, and IPAB effects. The illustrative projection reaches 6.2 percent of GDP in 2041 and 9.0 percent in 2091—considerably higher than the 5.6 percent of GDP in 2041 and 5.9 percent of GDP in 2091 under current law.

D. AVERAGE MEDICARE EXPENDITURES PER BENEFICIARY

Table V.D1 shows historical average per beneficiary expenditures for HI and SMI, as well as projected costs for calendar years 2016 through 2025 under the intermediate assumptions. Starting with the 2014 report, this section presents per beneficiary expenditures based on when the service is performed rather than when payment for the service is made.

For both HI and SMI Part B, costs increased very rapidly in the early years, in part because the availability of Medicare coverage enabled many beneficiaries to obtain the full range of health services they needed. The rapid inflation of the 1970s and early 1980s also contributed to rapid Medicare expenditure increases, and the cost-based reimbursement mechanisms in place provided relatively little incentive for efficiency in the provision of health care. Growth in average HI expenditures moderated dramatically following the introduction of the inpatient hospital prospective payment system in fiscal year 1984, but it accelerated again in the late 1980s and early 1990s due to rapid growth in skilled nursing and home health expenditures. During this same period, SMI Part B average costs generally continued to increase at relatively fast rates but slowed somewhat in the early 1990s with the implementation of physician fee reform legislation.

Expenditure growth moderated again during the late 1990s due to the effects of further legislation and efforts to control fraud and abuse. In addition, historically low levels of general and medical inflation helped reduce Medicare payment updates. The growth rates rebounded from 2001 through 2005 and then moderated somewhat for the remainder of the decade.

For 2010 through 2015, HI and Part B of SMI experienced the lowest 5-year per beneficiary growth rates in the program's history. This slow growth, which continued in 2016, was driven in part by legislated update reductions, low provider payment updates caused by the economic recession, and adjustments for documentation and coding that did not reflect changes in real case mix.

In addition, increased enrollment resulting from eligibility of the baby boom generation has decreased the average age of Medicare beneficiaries, thereby reducing per beneficiary costs. The growth rates also reflect the impact of the sequestration process, which is required under current law and reduces Medicare expenditures by 2 percent per

year beginning April 1, 2013. Finally, growth in the volume and intensity of the services delivered has also been relatively low, highlighted by reductions in the number of hospital admissions over this period.

Although SMI Part D began in 2004, full prescription drug coverage did not start until 2006. Accordingly, this discussion includes only the per beneficiary expenditures for 2006 and later. The initial open enrollment period for Part D ran through May 15, 2006. Beneficiaries who enrolled at the beginning of the year tended to have higher costs than those who enrolled toward the end of the open enrollment period. Consequently, the average per beneficiary costs in 2006 were relatively high, resulting in a growth rate for 2007 that was lower than normal. Growth rebounded in 2008 through 2011 but was negative in 2012 due to the patent expiration of certain high-cost drugs. The large growth in 2014 and 2015 was due to utilization of the new, expensive specialty drugs used to treat hepatitis C. Lower utilization of these drugs contributed to the drop in average spending in 2016.

Table V.D1.—HI and SMI Average Incurred per Beneficiary Costs

Calendar year	Average per beneficiary costs				Average percent change[1]			
		SMI				SMI		
	HI	Part B	Part D	Total	HI	Part B	Part D	Total
Historical data:								
1970	$270	$115	—	$385	13.8%	13.8%	—	13.8%
1975	472	205	—	677	11.8	12.3	—	12.0
1980	929	423	—	1,352	14.5	15.6	—	14.8
1985	1,579	795	—	2,373	11.2	13.4	—	11.9
1990	1,979	1,355	—	3,334	4.6	11.3	—	7.0
1995	3,194	1,867	—	5,061	10.0	6.6	—	8.7
2000	3,383	2,496	—	5,879	1.2	6.0	—	3.0
2005	4,439	3,839	—	8,278	5.6	9.0	—	7.1
2010	5,193	4,907	$1,808	11,908	3.2	5.0	—	7.5
2011	5,271	5,038	1,858	12,167	1.5	2.7	2.8%	2.2
2012	5,217	5,173	1,839	12,229	−1.0	2.7	−1.0	0.5
2013	5,175	5,175	1,874	12,224	−0.8	0.0	1.9	−0.0
2014	5,034	5,396	2,031	12,461	−2.7	4.3	8.4	1.9
2015	5,036	5,550	2,154	12,741	0.0	2.9	6.1	2.2
2016	5,053	5,689	2,130	12,872	0.3	2.5	−1.1	1.0
Intermediate estimates:								
2017	5,077	5,865	2,126	13,068	0.5	3.1	−0.2	1.5
2018	5,141	6,085	2,264	13,490	1.3	3.7	6.5	3.2
2019	5,326	6,467	2,418	14,211	3.6	6.3	6.8	5.3
2020	5,543	6,799	2,550	14,892	4.1	5.1	5.4	4.8
2021	5,775	7,175	2,681	15,631	4.2	5.5	5.2	5.0
2022	6,025	7,542	2,808	16,374	4.3	5.1	4.7	4.8
2023	6,279	7,925	2,940	17,143	4.2	5.1	4.7	4.7
2024	6,520	8,388	3,078	17,986	3.8	5.8	4.7	4.9
2025	6,735	8,756	3,199	18,690	3.3	4.4	3.9	3.9
2026	7,135	9,426	3,363	19,925	5.9	7.7	5.1	6.6

[1]Percent changes for 1970 represent the average annual increases from 1967 (the first full year of trust fund operations) through 1970. Similarly, percent changes shown for 1975, 1980, 1985, 1990, 1995, 2000, 2005, and 2010 represent the average annual increase over the 5-year period ending in the indicated year.

On average, annual increases in per beneficiary costs have been greater for SMI Part B than for HI during the previous four decades—by approximately 1.0 percent, 4.5 percent, 1.0 percent, and 2.6 percent per year in the 1970s, 1980s, 1990s, and 2000s, respectively. The HI increase remains lower than the SMI Part B increase over the next 10 years due to lower utilization of HI services.

Note that the rapid growth rates in the 1970s and 1980s are not expected to recur for either HI or SMI Part B due to more moderate inflation rates and the conversion of Medicare's remaining cost-based reimbursement mechanisms to prospective payment systems as part of the Balanced Budget Act of 1997. In addition, the reduction in Medicare price updates for most categories of providers that affected the growth rates over the last several years will continue to reduce growth rates throughout the projection period.

E. MEDICARE COST-SHARING AND PREMIUM AMOUNTS

HI beneficiaries who use covered services may be subject to deductible and coinsurance requirements. A beneficiary is responsible for an inpatient hospital deductible amount, which is deducted from the amount payable by the HI trust fund to the hospital, for inpatient hospital services furnished in a spell of illness. When a beneficiary receives such services for more than 60 days during a spell of illness, he or she is responsible for a coinsurance amount equal to one-fourth of the inpatient hospital deductible for each of days 61-90 in the hospital. After 90 days in a spell of illness, each individual has 60 lifetime reserve days of coverage, for which the coinsurance amount is equal to one-half of the inpatient hospital deductible. A beneficiary is responsible for a coinsurance amount equal to one-eighth of the inpatient hospital deductible for each of days 21-100 of skilled nursing facility services furnished during a spell of illness. No cost sharing is required for home health or hospice services.

Most persons aged 65 and older and many disabled individuals under age 65 are insured for HI benefits without payment of any premium. The Social Security Act provides that certain aged and disabled persons who are not insured may voluntarily enroll, subject to the payment of a monthly premium. In addition, since 1994, voluntary enrollees may qualify for a reduced premium if they have at least 30 quarters of covered employment.

Table V.E1 shows the historical levels of the HI deductible, coinsurance amounts, and premiums, as well as projected values for future years based on the intermediate set of assumptions used in estimating the operations of the trust funds. The values listed in the table for future years are estimates, and the actual amounts are likely to be somewhat different as experience emerges.

Table V.E1.—HI Cost-Sharing and Premium Amounts

Year	Inpatient hospital deductible[1]	Inpatient daily coinsurance[1]		SNF daily coinsurance[1]	Monthly premium	
		Days 61-90	Lifetime reserve days		Standard[2]	Reduced[1]
Historical data:						
1970	$52	$13	$26	$6.50	—	—
1975	92	23	46	11.50	$40	—
1980	180	45	90	22.50	78	—
1985	400	100	200	50.00	174	—
1990	592	148	296	74.00	175	—
1995	716	179	358	89.50	261	$183
2000	776	194	388	97.00	301	166
2005	912	228	456	114.00	375	206
2006	952	238	476	119.00	393	216
2007	992	248	496	124.00	410	226
2008	1,024	256	512	128.00	423	233
2009	1,068	267	534	133.50	443	244
2010	1,100	275	550	137.50	461	254
2011	1,132	283	566	141.50	450	248
2012	1,156	289	578	144.50	451	248
2013	1,184	296	592	148.00	441	243
2014	1,216	304	608	152.00	426	234
2015	1,260	315	630	157.50	407	224
2016	1,288	322	644	161.00	411	226
2017	1,316	329	658	164.50	413	227
Intermediate estimates:						
2018	1,352	338	676	169.00	421	232
2019	1,388	347	694	173.50	436	240
2020	1,436	359	718	179.50	454	250
2021	1,484	371	742	185.50	473	260
2022	1,532	383	766	191.50	493	271
2023	1,580	395	790	197.50	515	283
2024	1,628	407	814	203.50	535	294
2025	1,676	419	838	209.50	552	304
2026	1,724	431	862	215.50	586	322

[1]Amounts shown are effective for calendar years.
[2]Amounts shown for 1970-1980 are for the 12-month periods ending June 30; amounts shown for 1985 and later are for calendar years.

The *Federal Register* notice[97] announcing the HI deductible and coinsurance amounts for 2017 included an estimate of the aggregate cost to HI beneficiaries for the changes in the deductible and coinsurance amounts from 2016 to 2017. At the time of the notice's publication, it was estimated that in 2017 there would be 7.26 million inpatient deductibles paid at $1,316 each, 1.80 million inpatient days subject to coinsurance at $329 per day (for hospital days 61 through 90), 0.88 million lifetime reserve days subject to coinsurance at $658 per day, and 41.8 million extended care days subject to coinsurance at $164.50 per day. Similarly, it was estimated that in 2016 there would be 7.15 million deductibles paid at $1,288 each, 1.77 million days subject to coinsurance at $322 per day (for hospital days 61 through 90), 0.87 million lifetime reserve days subject to coinsurance at $644 per day, and 40.55 million extended care days subject to coinsurance at $161.00 per day. The total increase in cost to

[97]See https://www.gpo.gov/fdsys/pkg/FR-2016-11-15/pdf/2016-27389.pdf.

beneficiaries was estimated to be $740 million due to (i) the increase in the inpatient deductible and coinsurance amounts and (ii) the increase in the number of deductibles and daily coinsurance amounts paid.

Table V.E2 displays the SMI cost-sharing and premium amounts for Parts B and D. The projected values for future years are based on the intermediate set of assumptions used in estimating the operations of the Part B and Part D accounts. As a result, these values are estimates, and the actual amounts are likely to be somewhat different as experience emerges. The premiums for 2010 and 2011 also reflect significant additional increases designed to offset the loss of revenues attributable to the hold-harmless provision, as described later in this appendix. Similarly, the 2017 premium was increased due to loss of revenues from the very low Social Security cost-of-living adjustment and the hold-harmless provision.

Table V.E2.—SMI Cost-Sharing and Premium Amounts

	Part B		Part D			
Calendar year	Standard monthly premium[1]	Annual deductible[2]	Base beneficiary premium	Deductible	Initial benefit limit	Catastrophic threshold
Historical data:						
1970	$4.00	$50	—	—	—	—
1975	6.70	60	—	—	—	—
1980	8.70	60	—	—	—	—
1985	15.50	75	—	—	—	—
1990	28.60	75	—	—	—	—
1995	46.10	100	—	—	—	—
2000	45.50	100	—	—	—	—
2005	78.20	110	—	—	—	—
2006	88.50	124	$32.20	$250	$2,250	$3,600
2007	93.50	131	27.35	265	2,400	3,850
2008	96.40	135	27.93	275	2,510	4,050
2009	96.40	135	30.36	295	2,700	4,350
2010	110.50	155	31.94	310	2,830	4,550
2011	115.40	162	32.34	310	2,840	4,550
2012	99.90	140	31.08	320	2,930	4,700
2013	104.90	147	31.17	325	2,970	4,750
2014	104.90	147	32.42	310	2,850	4,550
2015	104.90	147	33.13	320	2,960	4,700
2016	121.80	166	34.10	360	3,310	4,850
2017	134.00	183	35.63	400	3,700	4,950
Intermediate estimates:						
2018	134.00	183	37.54	405[3]	3,750[3]	5,000[3]
2019	134.00	183	40.11	425	3,950	5,250
2020	139.00	190	42.16	450	4,210	6,650
2021	145.70	201	44.23	475	4,470	7,050
2022	151.50	212	46.17	500	4,730	7,450
2023	160.20	224	48.12	525	4,990	7,850
2024	169.20	237	50.11	555	5,250	8,250
2025	177.30	248	51.69	585	5,520	8,700
2026	190.20	266	53.83	610	5,770	9,100

[1]Amounts shown for 1970-1980 are for the 12-month periods ending June 30; amounts shown for 1985 and later are for calendar years.
[2]Prior to the Medicare Modernization Act, the Part B deductible was fixed by statute and had only occasionally been adjusted. The Medicare Modernization Act raised the deductible to $110 in 2005 and specified that it be indexed by average per beneficiary Part B expenditures thereafter.
[3]These amounts have already been determined.

The Part B monthly premiums displayed in table V.E2 are the standard premium rates paid by most Part B enrollees. However, there are three provisions that alter the premium rate for certain Part B enrollees. First, there is a premium surcharge for those beneficiaries who enroll after their initial enrollment period. Second, beginning in 2007, there is a higher income-related premium for those individuals whose modified adjusted gross income exceeds a specified threshold. Table V.E3 displays these Part B income-related premium amounts for 2007 through 2026, based on the intermediate set of assumptions.

Table V.E3.—Part B Income-Related Monthly Premium Amounts[1]

Calendar year	Ultimate percentage of program costs represented by premium			
	35%	50%	65%	80%
Historical data:				
2007	$105.80	$124.40	$142.90	$161.40
2008	122.20	160.90	199.70	238.40
2009	134.90	192.70	250.50	308.30
2010	154.70	221.00	287.30	353.60
2011	161.50	230.70	299.90	369.10
2012	139.90	199.80	259.70	319.70
2013	146.90	209.80	272.70	335.70
2014	146.90	209.80	272.70	335.70
2015	146.90	209.80	272.70	335.70
2016	170.50	243.60	316.70	389.80
2017	187.50	267.90	348.30	428.60
Intermediate estimates:				
2018	187.50	267.90	348.30	428.60
2019	187.50	267.90	348.30	428.60
2020	194.60	278.00	361.40	444.80
2021	203.90	291.30	378.70	466.10
2022	212.10	303.00	393.90	484.80
2023	224.20	320.30	416.40	512.50
2024	236.80	338.30	439.80	541.30
2025	248.20	354.50	460.90	567.20
2026	266.20	380.30	494.40	608.50

[1]Includes the impact of the 3-year transition in 2007 and 2008.

In 2017 the initial threshold is $85,000 for an individual tax return and $170,000 for a joint return. The thresholds are not indexed to inflation in the years 2011 through 2019 but are indexed thereafter. Individuals exceeding the threshold will pay premiums covering 35, 50, 65, or 80 percent of the average program cost for aged beneficiaries, depending on their income level, compared to the standard premium covering 25 percent. Effective in 2018, MACRA lowered certain income thresholds used for determining the income-related monthly adjustment amounts to be paid by beneficiaries, resulting in a greater number of beneficiaries paying the higher amounts. In addition, beginning in 2020, the legislation adjusted the methodology used to index the thresholds, and accordingly more beneficiaries will be subject to the income-related premiums.

Lastly, Part B premiums may also vary from the standard rate because a hold-harmless provision can lower the premium rate for individuals

who have their premiums deducted from their Social Security benefits. On an individual basis, this provision limits the dollar increase in the Part B premium to the dollar increase in the individual's Social Security benefit. As a result, the person affected pays a lower Part B premium, and the net amount of the individual's Social Security benefit does not decrease despite the greater increase in the premium.

Most services under Part B are subject to an annual deductible and coinsurance. The annual deductible was set by statute through 2005. Thereafter, it increases with the increase in the Part B aged actuarial rate to approximate the growth in per capita Part B expenditures.[98] After meeting the deductible, the beneficiary pays an amount equal to the product of the coinsurance percentage and the remaining allowed charges. The coinsurance percentage is 20 percent for most services. For those services not subject to the deductible or coinsurance (clinical laboratory tests, home health agency services, and most preventive care services), the beneficiary pays nothing.

The Part D average premiums displayed in table V.E2 are the estimated base beneficiary premiums. Starting in 2009, the national average plan bid is based on the enrollment-weighted average. The actual premium that a beneficiary pays varies according to the plan in which the beneficiary enrolls. The average paid premium has always been lower than the base beneficiary premium; the average paid premium was about $33 in 2016 and increased to about $35 in 2017 due to drug spending growth. Since beneficiaries may switch plans each year once the premium rates become known, the Trustees assume that the estimated average premium rate paid by beneficiaries will continue to be slightly less than the base beneficiary premium in future years.

Similar to Part B, there are two provisions that affect the premium rate for certain Part D beneficiaries. First, there is a Part D late enrollment penalty for those beneficiaries enrolling after their initial enrollment period. Second, starting in 2011, individuals whose modified adjusted gross income exceeds the same thresholds applicable to the Part B premium pay an income-related premium in addition to the premium charged by the plan in which the individual enrolled. The amount of the income-related premium adjustment is dependent on the

[98]The current mechanism to index the Part B deductible has technical computational issues mainly due to the timing of the calculation. The Part B deductible for any given year is indexed by the increase in the monthly aged actuarial rate for that same year, which represents estimated monthly per capita expenditures. However, these expenditures are dependent on the Part B deductible, which is not known until the actuarial rate is determined. The result is circularity in the modeling process.

individual's income level, and the extra premium amount is the difference between 35, 50, 65, or 80 percent and 25.5 percent, applied to the National Average Monthly Bid Amount adjusted for reinsurance. Effective in 2018, MACRA made the same changes to the income ranges and threshold methodology for Part D that were previously described for Part B. Table V.E4 displays the historical and projected Part D income-related premium adjustment amounts for 2011 through 2026, based on the intermediate set of assumptions.

Table V.E4.—Part D Income-Related Monthly Premium Adjustment Amounts

	Percentage of program costs represented by premium			
Calendar year	35%	50%	65%	80%
Historical data:				
2011	$12.00	$31.10	$50.10	$69.10
2012	11.60	29.90	48.10	66.40
2013	11.60	29.90	48.30	66.60
2014	12.10	31.10	50.20	69.30
2015	12.30	31.80	51.30	70.80
2016	12.70	32.80	52.80	72.90
2017	13.30	34.20	55.20	76.20
Intermediate estimates:				
2018	14.00	36.20	58.40	80.60
2019	15.10	38.90	62.70	86.60
2020	15.90	41.10	66.30	91.50
2021	16.80	43.40	69.90	96.50
2022	17.60	45.40	73.20	101.00
2023	18.40	47.50	76.60	105.70
2024	19.30	49.80	80.20	110.70
2025	20.10	51.80	83.60	115.30
2026	21.10	54.50	87.90	121.20

In addition, there are premium and cost-sharing subsidies for those beneficiaries with incomes less than 150 percent of the Federal poverty level and with assets in 2017 less than $13,820 for an individual and $27,600 for a couple. The asset thresholds are indexed in subsequent years by the Consumer Price Index (CPI-U). Under the current statutory adjustment formula, the asset figures for 2017 increase for both an individual and a couple as a result of increases in the CPI-U.

Under standard Part D coverage, there is an initial deductible. After meeting the deductible, the beneficiary pays 25 percent of the remaining costs up to the initial benefit limit. Beyond this limit, prior to 2011, the beneficiary paid all the drug costs until his or her total out-of-pocket expenditures reached the catastrophic threshold. (This total includes the deductible and coinsurance payments for expenses up to the initial benefit limit.) The ACA will gradually fill in the coverage gap from 2011 until 2020, when beneficiaries will pay 25 percent of the drug costs between the deductible and the catastrophic threshold under the standard coverage. In 2017, after reaching the catastrophic threshold, the beneficiary pays the greater of (i) 5 percent of the drug cost or (ii) $3.30 for generic or preferred multiple-source drugs or $8.25

for preferred single-source drugs. The latter copayment amounts from 2017 are indexed annually by per enrollee Part D average costs. Beneficiaries qualifying for the Part D low-income subsidy pay substantially reduced premium and cost-sharing amounts. Many Part D plans offer alternative coverage that differs from the standard coverage described above. The majority of beneficiaries have not enrolled in the standard benefit design but rather in plans with low or no deductibles, flat copayments for covered drugs, and, in some cases, partial coverage in the coverage gap.

F. MEDICARE AND SOCIAL SECURITY TRUST FUNDS AND THE FEDERAL BUDGET

One can view the financial operations of Medicare and Social Security in the context of the programs' trust funds or in the context of the overall Federal budget. The financial status of the trust funds differs fundamentally from the impact of these programs on the budget, and people often misunderstand the relationship between these two perspectives. Each perspective is appropriate and important for its intended purpose; this appendix attempts to clarify their roles and relationship.

By law, the annual reports of the Medicare and Social Security Boards of Trustees to Congress include a statement of the financial status of the programs' trust funds—that is, whether these funds have sufficient revenues and assets to enable the payment of benefits and administrative expenses. This trust fund perspective is important because the existence of trust fund assets provides the statutory authority to make such payments without the need for an appropriation from Congress. Medicare and Social Security benefits can be paid only if the relevant trust fund has sufficient income or assets.

The trust fund perspective does not encompass the interrelationship between the Medicare and Social Security trust funds and the overall Federal budget. The budget is a comprehensive display of all Federal activities, whether financed through trust funds or from the general fund of the Treasury. This broader focus may appropriately be termed the budget perspective or government-wide perspective and is officially presented in the *Budget of the United States Government* and in the *Financial Report of the United States Government*.

Payroll taxes, income taxes on Social Security benefits, Medicare premiums, and special State payments to Medicare finance the majority of Medicare and Social Security costs. In addition to these earmarked receipts from workers, employers, beneficiaries, and States, and interest payments on their accumulated assets, the trust funds (principally the SMI trust fund) rely on Federal general fund revenues for some of their financing. The financial status of a trust fund appropriately considers all sources of financing provided for that fund, including the availability of trust fund assets that Medicare or Social Security can use to meet program expenditures. From a budget perspective, however, general fund transfers represent a draw on other Federal resources for which there is no earmarked source of revenue from the public. For this appendix, interest payments to the trust funds

and asset redemptions, both of which occur due to the postponed use of earmarked revenues, are classified as draws on other Federal resources, since they require payments from the Treasury general fund. The budget perspective does not reflect that publicly held debt and interest payments to the public are both lower because the trust funds hold some of the debt.

In the past, general fund and interest payments for Medicare and Social Security were relatively small. These amounts have increased substantially over the last two decades, however, and the expected future growth of Medicare and Social Security will make their interaction with the Federal budget increasingly important. As the difference between earmarked and total trust fund revenues grows, the financial operations of Social Security and Medicare can appear markedly different depending on which of the two perspectives one uses.[99]

Illustration with Actual Data for 2016

Table V.F1 illustrates the trust fund and budget perspectives using actual data on Federal financial operations for fiscal year (FY) 2016. The first three columns show revenues and expenditures for HI, SMI, and OASDI, respectively, and the fourth column is the sum of these three columns. The fifth column shows total revenues and expenditures for all other government programs (including the general fund account of the Treasury), and the final column is the sum of the "Combined" and "Other Government" columns. The table shows earmarked revenues from the public separately from revenues from other government accounts (general revenue transfers and interest credits). Note that the transfers and interest credits received by the trust funds appear in total as negative entries under the "Other Government" column and are thus offsetting when summed for the total budget in the final column. These two intragovernmental transactions are key to the differences between the two perspectives.

---

[99]A more complete treatment of this topic appears in the *2016 Financial Report of the United States Government* at www.fms.treas.gov/fr/ and in a May 2009 Treasury report titled "Social Security and Medicare Trust Funds and the Federal Budget" at http://www.treasury.gov/resource-center/economic-policy/ss-medicare/Documents/budget_trust_fund_perspectives_2009.pdf. Additional information is available in a *Health Care Financing Review* article titled "Medicare Financial Status, Budget Impact, and Sustainability: Which Concept Is Which?" at http://www.cms.gov/Research-Statistics-Data-and-Systems/Research/HealthCareFinancingReview/Downloads/05-06Winpg127.pdf and in a *Social Security Bulletin* article titled "Social Security Trust Fund Cash Flows and Reserves" at https://www.ssa.gov/policy/docs/ssb/v75n1/v75n1p1.html.

Table V.F1.—Annual Revenues and Expenditures for Medicare and Social Security Trust Funds and the Total Federal Budget, Fiscal Year 2016

(In billions)

Revenue and expenditures categories	Trust funds HI	SMI	OASDI	Combined	Other government	Total[1]
Revenues from public:						
Payroll and benefit taxes	$273.5	—	$859.4	$1,132.9	—	$1,132.9
Premiums[2]	5.2	$86.5	—	91.7	—	91.7
Other taxes, fees, and payments[3]	—	12.6	—	12.6	$2,030.7	2,043.3
Total	278.7	99.1	859.4	1,237.3	2,030.7	3,268.0
Total expenditures to public[4]	290.6	403.9	916.0	1,610.6	2,242.0	3,852.6
Net Results for Budget Perspective	**−12.0**	**−304.8**	**−56.6**	**−373.3**	**−211.3**	**−584.7**
Revenues from other government accounts:						
Transfers	0.4	299.5	0.2	300.1	−300.1	—
Interest credits	8.0	2.0	90.6	100.6	−100.6	—
Total	8.4	301.5	90.7	400.7	−400.7	—
Net Results for Trust Fund Perspective	**−3.5**	**−3.3**	**34.1**	**27.4**	**n/a**	**n/a**

[1]This column is the sum of the preceding two columns and shows data for the total Federal budget. The figure $584.7 billion was the estimated total Federal budget deficit for fiscal year 2016.
[2]Includes Part D premiums paid directly to plans, which are not displayed on Treasury statements and are estimated.
[3]Includes Part D State transfers.
[4]The OASDI figure includes $4.7 billion transferred to the Railroad Retirement Board.

Notes: 1. For comparison, HI taxable payroll, OASDI taxable payroll, and GDP were $8,449 billion, $6,730 billion, and $18,568 billion, respectively, in 2016.
2. Totals do not necessarily equal the sums of rounded components.
3. n/a indicates not applicable.

The trust fund perspective reflects both categories of revenues for each trust fund. For HI, revenues from the public plus transfers/credits from other government accounts were $3.5 billion less than total expenditures in FY 2016, as shown at the bottom of the first column.[100] For the SMI trust fund, the statutory revenues from beneficiary premiums, State transfers, general revenue transfers, and interest earnings collectively were $3.3 billion less than expenditures in FY 2016. Note that it is appropriate to view the general revenue transfers from other government accounts as financial resources from the trust fund perspective since they are available to help meet trust fund outlays. For OASDI, total trust fund revenues from all sources (including $90.6 billion in interest payments and $0.2 billion in general fund reimbursements) exceeded total expenditures by $34.1 billion.

From the government-wide or budget perspective, only earmarked revenues received from the public—principally taxes on payroll and

[100]The Department of the Treasury invests surplus revenues from the public over expenditures to the public in special Treasury securities, which thereby represent a loan from the trust funds to the general fund of the Federal Government. These loans reduce the amount that the general fund has to borrow from the public to finance a deficit (or likewise increase the amount of debt paid off if there is a surplus). Interest is credited to the trust funds while the securities are being held. Trust fund securities can be redeemed at any time if needed to help meet program expenditures.

benefits, plus premiums—and expenditures made to the public are important for the final balance.[101] For HI, the difference between such revenues ($278.7 billion) and total expenditures made to the public ($290.6 billion) was $12.0 billion in FY 2016, indicating that HI had a negative effect on the overall budget in FY 2016. For SMI, beneficiary premiums, fees on brand-name prescription drugs to Part B, and State payments to Part D of Medicare were the only sources of revenues from the public in FY 2016 and represented only about 25 percent of total expenditures. The remaining $304.8 billion in FY 2016 outlays represented a substantial net draw on the Federal budget in that year.[102] For OASDI, the difference between revenues from the public ($859.4 billion) and total expenditures ($916.0 billion) was $56.6 billion, indicating that OASDI also had a negative effect on the overall budget last year if the effects of past trust fund cash flows on interest payments from the Federal Government to the public are not taken into account.

Thus, from the trust fund perspective, OASDI had an annual surplus in FY 2016, and HI and SMI had deficits. From the budget perspective, HI, SMI, and OASDI each required a net draw on the budget. HI, SMI, and OASDI collectively had a trust fund surplus of $27.4 billion in FY 2016 but a net draw of $373.3 billion on the budget.

It is important to recognize that each viewpoint is appropriate for its intended purpose but that one perspective cannot be used to answer questions related to the other. In the case of SMI, the trust fund will always be in balance and there will always be a net draw on the Federal budget. In the case of HI, trust fund surpluses in a given year may occur with either a positive or negative direct impact on the budget for that year. Conversely, a positive or negative budget impact from HI offers minimal insight into whether its trust fund has sufficient total revenues and assets to permit payment of benefits.

The next section illustrates the magnitude of the long-range difference between projected expenditures and revenues for Medicare and Social Security from both the trust fund and budget perspectives.

---

[101]For this purpose, the public includes State governments since they are outside of the Federal Government.

[102]Three types of trust fund transactions constituted this net budget obligation: $299.5 billion was drawn in the form of general revenue transfers, and another $2.0 billion in interest payments, while $3.3 billion was transferred to the trust fund from the general fund through the redemption of special-issue Treasury securities in an amount equal to the trust fund deficit for the year.

Future Obligations of the Trust Funds and the Budget

Table V.F2 collects from the Medicare and OASDI Trustees Reports the present values of projected future revenues and expenditures over the next 75 years. For HI and OASDI, tax revenues from the public are projected to fall short of statutory expenditures by $3.5 trillion and $15.4 trillion, respectively, in present value terms.[103]

Table V.F2.—Present Values of Projected Revenue and Cost Components of 75-Year Open-Group Obligations for HI, SMI, and OASDI
(In trillions, as of January 1, 2017)

Revenue and expenditure categories	HI	SMI	OASDI	Combined
Revenues from public:				
Payroll and benefit taxes	$21.4	—	$62.1	$83.6
Premiums	0.3	$10.2	—	10.5
Other taxes and fees[1]	—	1.3	—	1.3
Total	21.7	11.5	62.1	95.4
Total expenditures to public	25.3	41.5	77.5	144.3
Net Results for Budget Perspective	**−3.5**	**−30.0**	**−15.4**	**−48.9**
Revenues from other government accounts:				
Transfers	0.0	29.9	0.0	29.9
Interest credits	n/a	n/a	n/a	n/a
Total	0.0	29.9	0.0	29.9
Trust fund assets on January 1, 2017	0.2	0.1	2.8	3.1
Net Results for Trust Fund Perspective	**−3.3**	**0.0**	**−12.5**	**−15.8**

[1]Includes Part B revenues from fees on manufacturers and importers of brand-name prescription drugs and Part D State transfers.

Notes:
1. For comparison, the present values of HI taxable payroll, OASDI taxable payroll, and GDP are $559.3 trillion, $469.6 trillion, and $1,249.7 trillion, respectively, over the next 75 years. This present value of GDP is calculated using HI-specific interest discount factors and differs slightly from the corresponding amount shown in the OASDI Trustees Report.
2. Medicare present values are calculated using HI-specific discount factors, while OASDI amounts use OASDI-specific discount factors.
3. Totals do not necessarily equal the sums of rounded components.
4. n/a indicates not applicable.
5. 0.0 indicates an amount of less than $50 billion.

From the budget perspective, these are the additional amounts that would be necessary in order to pay HI and OASDI benefits and other costs at the level scheduled over the next 75 years. From the trust fund perspective, the amounts needed are smaller by the value of the accumulated assets in the respective trust funds—$0.2 trillion for HI and $2.8 trillion for OASDI—that could be drawn down to cover a part of the projected shortfall in tax revenues. Three points about this comparison in table V.F2 are important to note:

- The trust fund and budget perspectives differ in the treatment of the starting trust fund assets. Those accumulated reserves are

[103]Interest income is not a factor in this table, as dollar amounts are in present value terms.

credited to the trust fund programs under the trust fund perspective but are not under the budget perspective.

- The amounts shown in table V.F2 assume payment of full scheduled benefits, which is not permissible under current law after trust fund depletion. For both the budget and trust fund perspectives, the 75-year HI and OASDI deficits reflect the financial imbalance after trust fund depletion. By law, however, once assets are depleted, expenditures cannot be made except to the extent covered by ongoing tax receipts and other trust fund income.

- In practice, the long-range HI and OASDI deficits would likely be addressed by future legislation to reduce expenditures, increase payroll or other earmarked tax revenues, or some combination of such measures. For Medicare, in particular, lawmakers have frequently enacted legislation to slow the growth of expenditures.

The situation for SMI is somewhat different. SMI expenditures for Part B and Part D are projected to exceed premium and other dedicated revenues by $30.0 trillion. To keep the SMI trust fund solvent for the next 75 years will require general fund transfers of this amount, and these transfers represent a formal budget requirement. From the trust fund perspective, the present value of projected total premiums and general revenues is about equal to the present value of future expenditures.

From the 75-year budget perspective, the present value of the additional resources that would be necessary to meet projected expenditures, for the three programs combined, is $48.9 trillion.[104] To put this very large figure in perspective, it would represent 3.9 percent of the present value of projected GDP over the same period ($1,250 trillion). The components of the $48.9-trillion total are as follows:

[104]As noted previously, the long-range HI and OASDI financial imbalances could instead be partially addressed by expenditure reductions, thereby reducing the need for additional revenues. Similarly, SMI expenditure reductions would reduce the need for general fund transfers.

Unfunded Medicare and OASDI obligations (trust fund perspective)[105]	$15.8 trillion	(1.3% of GDP)
HI, SMI, and OASDI asset redemptions	3.1 trillion	(0.2% of GDP)
SMI general revenue financing.....	29.9 trillion	(2.4% of GDP)

These resource needs would be in addition to the payroll taxes, benefit taxes, and premium payments. As noted, the asset redemptions and SMI general revenue transfers represent formal budget commitments, but no provision exists for covering the HI and OASDI trust fund deficits once assets are depleted.

As discussed throughout this report, the Medicare projections shown here could be substantially understated as a result of other potentially unsustainable elements of current law. Although this issue does not affect the nature of the budget and trust fund perspectives described in this appendix, it is important to note that actual long-range present values for HI expenditures and SMI expenditures and revenues could exceed the amounts shown in table V.F2 by a substantial margin.

[105]Additional revenues and/or expenditure reductions totaling $15.8 trillion, together with $3.1 trillion in asset redemptions, would cover the projected financial imbalance but would leave the HI and OASDI trust funds depleted at the end of the 75-year period. The long-range actuarial deficits for HI and OASDI include a cost factor to allow for a normal level of fund assets. See section III.B3 in this report, and section IV.B4 in the OASDI Trustees Report, for the numerical relationship between the actuarial deficit and the unfunded obligations of each program.

G. INFINITE HORIZON PROJECTIONS

Consistent with the practice of previous reports, this report focuses on the 75-year period from 2017 to 2091 for the evaluation of the long-range financial status of the Medicare program. The estimates are for the open-group population—all persons, some of whom are not yet born, who will participate during the period as either taxpayers or beneficiaries, or both—and consist of payments from, and on behalf of, employees now in the workforce, as well as those who will enter the workforce over the next 75 years.

Experts have noted that limiting the projections to 75 years understates the magnitude of the long-range unfunded obligations because summary measures (such as the actuarial balance and open-group unfunded obligations) reflect the full amount of taxes paid by the next two or three generations of workers, but not the full amount of their benefits. One approach to addressing the limitations of 75-year summary measures is to extend the projection horizon indefinitely, so that the overall results reflect the projected costs and revenues after the first 75 years.[106] Such extended projections can also help indicate whether the financial imbalance would be improving or continuing to worsen beyond the normal 75-year period.

Table V.G1 presents estimates of HI unfunded obligations that extend to the infinite horizon. The extension assumes that the HI program and the demographic and economic trends used for the 75-year projection continue indefinitely except that average HI expenditures per beneficiary increase at the same rate as GDP per capita less the productivity adjustments after 2091. If the slower HI price updates under the ACA were able to continue indefinitely, then the HI financial imbalance would actually improve beyond the 75-year period. Specifically, under these assumptions, extending the calculations beyond 2091 *subtracts* $6.9 trillion in unfunded obligations from the amount estimated through 2091. Over the infinite horizon, the HI program thus has a projected surplus of $3.33 trillion.

[106]The calculation of present values, in effect, applies successively less weight to future amounts over time, through the process of interest discounting. For example, the weights associated with the 25th, 75th, and 200th years of the projection would be about 33.6 percent, 2.5 percent, and 0.00399 percent, respectively, of the weight for the first year. In this way, it is possible to calculate a finite summary measure for an infinite projection period.

Table V.G1.—Unfunded HI Obligations from Program Inception through the Infinite Horizon

[Present values as of January 1, 2017; dollar amounts in trillions]

	Present value	As a percentage of: HI taxable payroll	As a percentage of: GDP
Unfunded obligations through the infinite horizon[1]	−$3.56	−0.4%	−0.1%
Unfunded obligations from program inception through 2091[1]	3.33	0.6	0.3

[1]Present value of future expenditures less income, reduced by the amount of trust fund assets at the beginning of the period.

Notes: 1. The present values of future HI taxable payroll for 2017-2091 and for 2017 through the infinite horizon are $559.3 trillion and $1,013.0 trillion, respectively.
2. The present values of GDP for 2017-2091 and for 2017 through the infinite horizon are $1,249.7 trillion and $2,409.7 trillion, respectively. (These present values differ slightly from the corresponding amounts shown in the OASDI Trustees Report due to the use of HI-specific interest discount factors.)

It is possible to separate the projected HI unfunded obligation over the infinite horizon into the portions associated with current participants versus future participants. The first line of table V.G2 shows the present value of future expenditures less future taxes for current participants, including both beneficiaries and covered workers. Subtracting the current value of the HI trust fund (the accumulated value of past HI taxes less outlays) results in a closed-group unfunded obligation of $10.4 trillion. In contrast, the projected difference between taxes and expenditures for future participants is a surplus of $13.9 trillion.

The year-by-year HI deficits described in section III.B have shown that HI taxes will not be adequate to finance the program on a pay-as-you-go basis (whereby payroll taxes from today's workers provide benefits to today's beneficiaries).[107] The unfunded obligations shown in table V.G2 for current participants further indicate that their HI taxes are not adequate to cover their own future costs when they become eligible for HI benefits—and that this situation has also occurred for workers in the past. For future workers, however, the compounding effects of the lower HI price updates would, if they were able to continue indefinitely, lower costs to the point that scheduled HI taxes would be more than sufficient. In practice, lawmakers could address the projected aggregate HI deficits by raising additional revenue or reducing benefits (or some combination of these actions). The impact of such changes on the unfunded obligation amounts for current versus future participants would depend on the specific policies selected.

[107]As noted previously, the HI trust fund also receives small amounts of income in the form of income taxes on OASDI benefits, interest, and general revenue reimbursements for certain uninsured beneficiaries.

Table V.G2.—Unfunded HI Obligations for Current and Future Program Participants through the Infinite Horizon

[Present values as of January 1, 2017; dollar amounts in trillions]

	Present value	As a percentage of: HI taxable payroll	GDP
Future expenditures less income for current participants	$10.6	1.0%	0.4%
Less current trust fund (income minus expenditures to date for past and current participants)	0.2	0.0	0.0
Equals unfunded obligations for past and current participants[1]	10.4	1.0	0.4
Plus expenditures less income for future participants for the infinite horizon	−13.9	−1.4	−0.6
Equals unfunded obligations for all participants for the infinite future	−3.6	−0.4	−0.1

[1]This concept is also referred to as the closed-group unfunded obligation.

Notes: 1. The estimated present value of future HI taxable payroll for 2017 through the infinite horizon is $1,013.0 trillion.
2. The estimated present value of GDP for 2017 through the infinite horizon is $2,409.7 trillion. See note 2 in table V.G1.
3. Totals do not necessarily equal the sums of rounded components.

Tables V.G3 and V.G4 show the infinite horizon estimates for Part B. The extension assumes that the demographic and economic trends used for the 75-year projection continue indefinitely and that the productivity adjustments to payment updates for some providers remain unchanged. To simplify and stabilize the modeling for the infinite horizon, the Trustees project that average Part B expenditures per beneficiary will increase at about the same rate as GDP per capita minus 0.3 percentage point in every year, reflecting the mix of costs by provider category after 2091 and the payment rate updates applicable to each category.

Table V.G3 shows an estimated present value of Part B expenditures through the infinite horizon of $57.0 trillion, of which $30.8 trillion would occur during the first 75 years. Because such amounts, calculated over extremely long horizons, can be difficult to interpret, they are also shown as percentages of the present value of future GDP. So expressed, the corresponding figures are 2.4 percent and 2.5 percent, respectively. The table also indicates that beneficiary premiums will finance approximately 27 percent of expenditures for each time period and that fees related to brand-name prescription drugs will finance about 0.1 percent. General revenues pay for the remaining 73 percent.

Table V.G3.—Unfunded Part B Obligations from Program Inception through the Infinite Horizon

[Present values as of January 1, 2017; dollar amounts in trillions]

	Present value	As a percentage of GDP
Unfunded obligations through the infinite horizon[1]	$0.0	0.0%
Expenditures	57.0	2.4
Income	57.0	2.4
Beneficiary premiums	15.5	0.6
General revenue contributions	41.4	1.7
Fees related to brand-name prescription drugs	0.1	0.0
Unfunded obligations from program inception through 2091[1]	0.0	0.0
Expenditures	30.8	2.5
Income	30.8	2.5
Beneficiary premiums	8.3	0.7
General revenue contributions	22.4	1.8
Fees related to brand-name prescription drugs	0.1	0.0

[1]Present value of future expenditures less income, reduced by the amount of trust fund assets at the beginning of the period.

Notes: 1. The present values of GDP for 2017-2091 and for 2017 through the infinite horizon are $1,249.7 trillion and $2,409.7 trillion, respectively. See note 2 of table V.G1.
2. Totals do not necessarily equal the sums of rounded components.

Table V.G4 shows corresponding present values separately for current versus future beneficiaries. As indicated, about 46 percent of the projected total, infinite-horizon cost is attributable to current beneficiaries, with the remaining 54 percent attributable to beneficiaries becoming eligible for Part B benefits after January 1, 2017.

Table V.G4.—Unfunded Part B Obligations for Current and Future Program Participants through the Infinite Horizon

[Present values as of January 1, 2017; dollar amounts in trillions]

	Present value	As a percentage of GDP
Future expenditures less income for current participants	$0.2	0.0%
Expenditures	25.9	1.1
Income	25.8	1.1
Beneficiary premiums	7.0	0.3
General revenue contributions	18.7	0.8
Fees related to brand-name prescription drugs	0.0	0.0
Less current trust fund (Income minus expenditures to date for past and current participants)	0.1	0.0
Equals unfunded obligations for past and current participants[1]	0.1	0.0
Expenditures	25.8	1.1
Income	25.7	1.1
Beneficiary premiums	6.9	0.3
General revenue contributions	18.6	0.8
Fees related to brand-name prescription drugs	−0.1	0.0
Plus expenditures less income for future participants for the infinite horizon	−0.2	0.0
Expenditures	31.1	1.3
Income	31.2	1.3
Beneficiary premiums	8.5	0.4
General revenue contributions	22.7	0.9
Fees related to brand-name prescription drugs	0.0	0.0
Equals unfunded obligations for all participants for the infinite future	−0.1	0.0
Expenditures	56.9	2.4
Income	56.9	2.4
Beneficiary premiums	15.4	0.6
General revenue contributions	41.3	1.7
Fees related to brand-name prescription drugs	0.0	0.0

[1]This concept is also referred to as the closed-group unfunded obligation.

Notes: 1. The estimated present value of GDP for 2017 through the infinite horizon is $2,409.7 trillion. See note 2 of table V.G1.
2 Totals do not necessarily equal the sums of rounded components.

Tables V.G5 and V.G6 present revenue and expenditure estimates for Part D that extend to the infinite horizon. The extension assumes that the demographic and economic trends used for the 75-year projection continue indefinitely except that average Part D expenditures per beneficiary would increase at the same rate as GDP per capita after 2091.

Table V.G5 shows an estimated present value of Part D expenditures through the infinite horizon of $26.5 trillion, of which $10.8 trillion would occur during the first 75 years. To put the estimates in perspective, they are also shown as percentages of the present value of future GDP. Expressed in this way, the corresponding figures are 1.1 percent and 0.9 percent of GDP, respectively. The table also indicates that, for each time period, beneficiary premiums would finance approximately 18 percent of expenditures and State transfers would finance 12 percent, with general revenues paying for the remaining 71 percent.

Table V.G5.—Unfunded Part D Obligations from Program Inception through the Infinite Horizon

[Present values as of January 1, 2017; dollar amounts in trillions]

	Present value	As a percentage of GDP
Unfunded obligations through the infinite horizon[1]	$0.0	0.0%
Expenditures	26.5	1.1
Income	26.5	1.1
Beneficiary premiums	4.7	0.2
State transfers	3.1	0.1
General revenue contributions	18.7	0.8
Unfunded obligations from program inception through 2091[1]	0.0	0.0
Expenditures	10.8	0.9
Income	10.8	0.9
Beneficiary premiums	1.9	0.2
State transfers	1.2	0.1
General revenue contributions	7.6	0.6

[1]Present value of future expenditures less income, reduced by the amount of trust fund assets at the beginning of the period.

Notes: 1. The present values of GDP for 2017-2091 and for 2017 through the infinite horizon are $1,249.7 trillion and $2,409.7 trillion, respectively. See note 2 of table V.G1.
2 Totals do not necessarily equal the sums of rounded components.

Table V.G6 shows corresponding projections separately for current versus future beneficiaries. As indicated, about 30 percent of the projected total, infinite-horizon cost is attributable to current beneficiaries, with the remaining 70 percent attributable to beneficiaries becoming eligible for Part D benefits after January 1, 2017.

Table V.G6.—Unfunded Part D Obligations for Current and Future Program Participants through the Infinite Horizon

[Present values as of January 1, 2017; dollar amounts in trillions]

	Present value	As a percentage of GDP
Future expenditures less income for current participants	$0.0	0.0%
Expenditures	7.9	0.3
Income	7.9	0.3
Beneficiary premiums	1.4	0.1
State transfers	0.9	0.0
General revenue contributions	5.6	0.2
Less current trust fund (Income minus expenditures to date for past and current participants)	0.0	0.0
Equals unfunded obligations for past and current participants[1]	0.0	0.0
Expenditures	7.9	0.3
Income	7.9	0.3
Beneficiary premiums	1.4	0.1
State transfers	0.9	0.0
General revenue contributions	5.6	0.2
Plus expenditures less income for future participants for the infinite horizon	0.0	0.0
Expenditures	18.6	0.8
Income	18.6	0.8
Beneficiary premiums	3.3	0.1
State transfers	2.2	0.1
General revenue contributions	13.1	0.5
Equals unfunded obligations for all participants for the infinite future	0.0	0.0
Expenditures	26.4	1.1
Income	26.4	1.1
Beneficiary premiums	4.7	0.2
State transfers	3.1	0.1
General revenue contributions	18.7	0.8

[1]This concept is also referred to as the closed-group unfunded obligation.

Notes: 1. The estimated present value of GDP for 2017 through the infinite horizon is $2,409.7 trillion. See note 2 of table V.G1.
2. Totals do not necessarily equal the sums of rounded components.

H. FISCAL YEAR HISTORICAL DATA AND PROJECTIONS THROUGH 2026

Tables V.H1, V.H2, and V.H3 present detailed operations of the HI trust fund, along with Part B and Part D of the SMI trust fund, for fiscal year 2016. These tables are similar to the calendar-year operation tables displayed in sections III.B, III.C, and III.D.

Table V.H1.—Statement of Operations of the HI Trust Fund during Fiscal Year 2016

[In thousands]

Total assets of the trust fund, beginning of period	$195,909,175
Revenue:	
Payroll taxes	$250,472,355
Income from taxation of OASDI benefits	23,022,000
Interest on investments	8,015,741
Premiums collected from voluntary participants	3,231,564
Premiums collected from Medicare Advantage participants	363,754
ACA Medicare shared savings program receipts	11,323
Transfer from Railroad Retirement account	624,800
Reimbursement, transitional uninsured coverage	158,000
CMS interfund interest receipts[1]	−4,075
Interfund interest payments to OASDI[1]	−428
Interest on reimbursements, Railroad Retirement	32,011
Other	2,464
Reimbursement, union activity	1,172
Fraud and abuse control receipts:	
Criminal fines	24,044
Civil monetary penalties	59,055
Civil penalties and damages, Department of Justice	764,687
Asset forfeitures, Department of Justice	53,999
3% administrative expense reimbursement, Department of Justice	23,650
General fund appropriation fraud and abuse, FBI	130,303
General fund transfer, Discretionary	119,925
Total revenue	$287,106,344
Expenditures:	
Net benefit payments	$285,573,676
Administrative expenses:	
Treasury administrative expenses	96,899
Salaries and expenses, SSA[2]	929,902
Salaries and expenses, CMS[3]	2,175,450
Salaries and expenses, Office of the Secretary, HHS	45,102
Medicare Payment Advisory Commission	6,585
Administration on aging funding	3,087
CMS program management–Affordable Care Act	32,142
Transfer to Patient-Centered Outcomes Research Trust Fund[4]	50,379
ACL State Health Insurance Assistance Program[5]	10,010
MACRA[6]	4,865
Fraud and abuse control expenses:	
HHS Medicare integrity program	726,035
HHS Office of Inspector General	308,458
Department of Justice	79,383
FBI	150,538
HCFAC Discretionary, CMS	316,013
HCFAC Other HHS Discretionary, CMS	34,972
HCFAC Department of Justice Discretionary, CMS	65,416
HCFAC Office of Inspector General Discretionary, CMS	39,578
Total administrative expenses	5,074,815
Total expenditures	$290,648,490
Net addition to the trust fund	−3,542,146
Total assets of the trust fund, end of period	$192,367,029

[1]Reflects interest adjustments on the reallocation of administrative expenses among the Medicare trust funds, the OASDI trust funds, and the general fund of the Treasury. Estimated payments are made from the trust funds and then are reconciled, with interest, the next year when the actual costs are known. A positive figure represents a transfer to the HI trust fund from the other trust funds. A negative figure represents a transfer from the HI trust fund to the other funds.
[2]For facilities, goods, and services provided by SSA.
[3]Includes expenses of the Medicare Administrative Contractors.
[4]Reflects amount transferred from the HI trust fund to the Patient-Centered Outcomes Research trust fund, as authorized by the Patient Protection and Affordable Care Act of 2010.
[5]Reflects amount transferred from the HI trust fund to the Administration for Community Living (ACL) for administration of the State Health Insurance Assistance Program, as authorized by the Consolidated Appropriations Act of 2014.
[6]Represents amounts transferred from the HI trust fund for administration of provisions of the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA).

Note: Totals do not necessarily equal the sums of rounded components.

Table V.H2.—Statement of Operations of the Part B Account in the SMI Trust Fund during Fiscal Year 2016

[In thousands]

Total assets of the Part B account in the trust fund, beginning of period		$63,851,505
Revenue:		
Premiums from enrollees:		
Enrollees aged 65 and over	$61,061,622	
Disabled enrollees under age 65	11,403,432	
Total premiums		72,465,054
Premiums collected from Medicare Advantage participants		421,905
Government contributions:		
Enrollees aged 65 and over	165,363,609	
Disabled enrollees under age 65	42,857,442	
Repayable transfer from Treasury[1]	3,720,324	
Federal match of repayable transfer from Treasury[1]	11,995,381	
Repayment amount[1]	−431,650	
Adjustment for exempted amounts[1]	−1,385,446	
Health information technology (HIT) receipts	929,814	
Union activity	1,609	
Total government contributions		223,051,082
Other		9,889
Interest on investments		1,988,832
CMS interfund interest receipts[2]		4,075
Interfund interest payments to OASDI[2]		−666
Annual fees–branded Rx manufacturers and importers		2,853,266
ACA Medicare shared savings program receipts		8,223
Total revenue		$300,801,659
Expenditures:		
Net Part B benefit payments		$295,065,934
Administrative expenses:		
Transfer to Medicaid[3]	767,062	
Treasury administrative expenses	548	
Salaries and expenses, CMS[4]	1,879,162	
Salaries and expenses, Office of the Secretary, HHS	45,518	
Salaries and expenses, SSA	1,136,405	
Medicare Payment Advisory Commission	4,390	
Administration on aging funding	3,087	
Railroad Retirement administrative expenses	29,658	
Railroad Retirement administrative expenses, OIG	1,330	
CMS program management–Affordable Care Act	29,066	
Transfer to Patient-Centered Outcomes Research trust fund[5]	72,994	
ACL State Health Insurance Assistance Program[6]	10,010	
MACRA[7]	4,865	
Transfer to Centers for Disease Control[8]	4,156	
Total administrative expenses		3,988,251
Total expenditures		$299,054,185
Net addition to the trust fund		1,747,474
Total assets of the Part B account in the trust fund, end of period		$65,598,978

[1]The Bipartisan Budget Act of 2015 (BBA) required a transfer of funds from the general fund to cover the premium income that was lost in 2016 as a result of the hold-harmless provision. The BBA further requires that, starting in 2016, the Part B premium otherwise determined be increased by $3.00, which is to be collected and repaid to the general fund of the Treasury. The additional repayment premium amounts will continue until the balance due (defined as transfer to the Part B account from the general fund plus forgone income-related premiums) has been repaid. The additional repayment premium is not to be matched by general revenue contributions; however, since CMS is not able to separate it from the standard premium, the additional repayment premium is matched. An adjustment is therefore necessary to transfer this erroneous Federal matching amount back to the general fund.
[2]Reflects interest adjustments on the reallocation of administrative expenses among the Medicare trust funds, the OASDI trust funds, and the general fund of the Treasury. Estimated payments are made from the trust funds and then are reconciled, with interest, the next year when the actual costs are known. A positive figure represents a transfer to the Part B account of the SMI trust fund from the other trust funds. A negative figure represents a transfer from the Part B account in the SMI trust fund to the other funds.
[3]Represents amount transferred from the Part B account in the SMI trust fund to Medicaid to pay the Part B premium for certain qualified individuals, as legislated by the Balanced Budget Act of 1997.
[4]Includes expenses of the Medicare Administrative Contractors.
[5]Reflects amount transferred from the Part B account of the SMI trust fund to the Patient-Centered Outcomes Research trust fund, as authorized by the Patient Protection and Affordable Care Act of 2010.
[6]Reflects amount transferred from the Part B account of the SMI trust fund to the Administration for Community Living (ACL) for administration of the State Health Insurance Assistance program, as authorized by the Consolidated Appropriations Act of 2014.
[7]Represents amounts transferred from the Part B account of the SMI trust fund for administration of provisions of the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA).
[8]Reflects amount transferred from the Part B account of the SMI trust fund to the Centers for Disease Control as authorized by section 205 of the Consolidated Appropriations Act of 2015.

Note: Totals do not necessarily equal the sums of rounded components.

Table V.H3—Statement of Operations of the Part D Account in the SMI Trust Fund during Fiscal Year 2016

[In thousands]

Total assets of the Part D account in the trust fund, beginning of period		$5,589,313
Revenue:		
Premiums from enrollees		
Premiums deducted from Social Security benefits	$4,513,963	
Premiums paid directly to plans[1]	9,115,304	
Total premiums		13,629,266
Government contributions:		
Prescription drug benefits	76,006,978	
Prescription drug administrative expenses	434,255	
Total government contributions		76,441,233
Payments from States		9,754,989
Interest on investments		29,470
Interfund interest payments[2]		−1,766
Total revenue		$99,853,192
Expenditures:		
Part D benefit payments[1]		$104,421,962
Part D administrative expenses		432,488
Total expenditures		$104,854,450
Net addition to the trust fund		−5,001,258
Total assets of the Part D account in the trust fund, end of period[3]		$588,055

[1]Premiums paid directly to plans are not displayed on Treasury statements and are estimated. These premiums have been added to the benefit payments reported on the Treasury statement to obtain an estimate of total Part D benefits. Direct data on such benefit amounts are not yet available.
[2]Reflects interest adjustments on the reallocation of administrative expenses among the Medicare trust funds, the OASDI trust funds, and the general fund of the Treasury. Estimated payments are made from the trust funds and then are reconciled, with interest, the next year when the actual costs are known. A positive figure represents a transfer to the Part D account in the SMI trust fund from the other trust funds. A negative figure represents a transfer from the Part D account in the SMI trust fund to the other funds.
[3]As noted in section III.D2, a new policy was developed in 2015 under which amounts from the Treasury are transferred into the Part D account 5 business days before the benefit payments to the plans, rather than on the day the benefit payments are due—typically the first business day of a month—as had previously been the case. Accordingly, for any year in which October 1 does not occur on a weekend, the Part D account includes a balance at the end of the previous fiscal year that is more substantial than it would have been prior to implementation of the new policy.

Note: Totals do not necessarily equal the sums of rounded components.

Tables V.H4, V.H5, V.H6, V.H7, and V.H8 present estimates of the fiscal-year operations of total Medicare, the HI trust fund, the SMI trust fund, the Part B account in the SMI trust fund, and the Part D account in the SMI trust fund, respectively. These tables correspond to the calendar-year trust fund operation tables shown in section V.B and in section III.

Table V.H4.—Total Medicare Income, Expenditures, and Trust Fund Assets during Fiscal Years 1970-2026

[In billions]

Fiscal year	Total income	Total expenditures	Net change in assets	Assets at end of year
Historical data:				
1970	$7.5	$7.1	$0.3	$2.7
1975	16.9	14.8	2.1	11.3
1980	35.7	35.0	0.7	19.0
1985	75.5	71.4	4.1	31.9
1990	125.7	109.7	16.0	110.2
1995	173.0	180.1	−7.1	143.4
2000	248.9	219.3	29.6	214.0
2005	349.4	336.9	12.5	294.6
2010	500.7	521.2	−20.5	350.9
2011	528.0	560.3	−32.3	318.6
2012	532.6	550.1	−17.5	301.2
2013	556.7[1]	581.7	−25.0	276.2
2014	597.7[1]	600.3	−2.6	273.6
2015	629.9	638.1	−8.3	265.3
2016	687.8	694.6	−6.8	258.6
Intermediate estimates:				
2017	721.0	707.8	13.3	271.8
2018	765.4	713.2	52.2	324.0
2019	818.9	789.9	29.0	353.0
2020	875.8	855.6	20.2	373.2
2021	940.8	923.3	17.5	390.6
2022	1,007.3	1,029.4	−22.1	368.6
2023	1,075.7	1,073.0	2.7	371.2
2024	1,149.5	1,113.7	35.8	407.0
2025	1,222.7	1,223.0	−0.3	406.7
2026	1,313.0	1,337.6	−24.6	382.1

[1]Reflects the adjustment made by Treasury in November of 2014 to account for $2.6 billion in Part B drug fee income in September of 2013, rather than in October of 2013 when it was actually received.

Note: Totals do not necessarily equal the sums of rounded components.

Table V.H5.—Operations of the HI Trust Fund during Fiscal Years 1970-2026

[In billions]

	Income								Expenditures			Trust fund	
Fiscal year[1]	Payroll taxes	Income from taxation of benefits	Railroad Retirement account transfers	Reimbursement for uninsured persons	Premiums from voluntary enrollees	Payments for military wage credits	Interest and other[2,3]	Total	Benefit payments[3,4]	Administrative expenses[5]	Total	Net change	Balance at end of year
Historical data:													
1970	$4.8	—	$0.1	$0.6	—	$0.0	$0.1	$5.6	$4.8	$0.1	$5.0	$0.7	$2.7
1975	11.3	—	0.1	0.5	$0.0	0.0	0.6	12.6	10.4	0.3	10.6	2.0	9.9
1980	23.2	—	0.2	0.7	0.0	0.1	1.1	25.4	23.8	0.5	24.3	1.1	14.5
1985	46.5	—	0.4	0.8	0.0	0.1	3.2	50.9	47.8	0.8	48.7	4.1[6]	21.3
1990	70.7	—	0.4	0.4	0.1	0.1	7.9	79.6	65.9	0.8	66.7	12.9	95.6
1995	98.1	$3.9	0.4	0.5	1.0	0.1	11.0	114.8	113.6	1.3	114.9	0.0	129.5
2000	137.7	8.8	0.5	0.5	1.4	0.0	10.8	159.7	127.9[7]	2.4	130.3	29.4	168.1
2005	169.0	8.8	0.4	0.3	2.3	0.0	16.2	196.9	181.3	2.9	184.1	12.8	277.7
2010	183.6	13.8	0.5	−0.1	3.3	0.0	16.9	218.0	245.6	3.3	249.0	−31.0	278.9
2011	192.1	15.1	0.5	0.3	3.3	0.0	15.3	226.5	255.7	3.9	259.6	−33.1	245.8
2012	204.8	18.6	0.5	0.3	3.4	0.0	14.2	241.7	254.5	3.7	258.2	−16.4	229.4
2013	212.9	14.3	0.6	0.0	3.4	0.0	12.4	243.6	262.4	4.1	266.5	−23.0	206.4
2014	227.6	18.1	0.6	0.4	3.3	0.0	12.8	262.8	262.5	4.3	266.9	−4.1	202.3
2015	237.7	20.2	0.6	0.2	3.3	0.0	10.4	272.4	273.2	5.5	278.7	−6.4	195.9
2016	250.5	23.0	0.7	0.2	3.2	0.0	9.6	287.1	285.6	5.1	290.6	−3.5	192.4
Intermediate estimates:													
2017	262.6	24.5	0.6	0.1	3.5	0.0	9.7	301.1	287.7	5.1	292.8	8.3	200.7
2018	277.5	27.1	0.6	0.1	3.7	0.0	10.4	319.5	291.2	5.4	296.6	22.9	223.5
2019	293.4	29.9	0.6	0.1	3.9	0.0	11.2	339.1	316.5	5.8	322.2	16.9	240.4
2020	308.3	32.9	0.7	0.1	4.1	0.0	12.0	358.2	339.0	6.2	345.2	13.0	253.4
2021	326.9	36.2	0.7	0.1	4.3	0.0	12.9	381.1	363.5	6.6	370.1	11.0	264.4
2022	343.9	39.7	0.7	0.1	4.6	0.0	13.4	402.4	400.5	7.1	407.5	−5.1	259.3
2023	358.4	43.3	0.7	0.1	4.9	0.0	13.5	420.9	419.2	7.5	426.7	−5.8	253.5
2024	374.4	47.3	0.7	0.1	5.2	0.0	13.5	441.2	435.2	8.0	443.2	−2.0	251.5
2025	390.6	51.5	0.8	0.1	5.5	0.0	13.4	461.8	471.0	8.6	479.5	−17.8	233.8
2026	408.6	56.2	0.8	0.1	5.9	0.0	12.9	484.4	511.9	9.4	521.3	−36.9	196.9

[1]Fiscal years 1970 and 1975 consist of the 12 months ending on June 30 of each year; fiscal years 1980 and later consist of the 12 months ending on September 30 of each year.
[2]Other income includes recoveries of amounts reimbursed from the trust fund that are not obligations of the trust fund, receipts from the fraud and abuse control program, and a small amount of miscellaneous income. In 2008, includes an adjustment of −$0.9 billion for interest inadvertently earned as a result of Part A hospice costs that were misallocated to the Part B trust fund account.
[3]See footnote 2 of table III.B4.
[4]Includes costs of Peer Review Organizations from 1983 through 2001 (beginning with the implementation of the prospective payment system on October 1, 1983) and costs of Quality Improvement Organizations beginning in 2002.
[5]Includes costs of experiments and demonstration projects. Beginning in 1997, includes fraud and abuse control expenses, as provided for by the Health Insurance Portability and Accountability Act of 1996 (Public Law 104-191).
[6]Includes repayment of loan principal, from the OASI trust fund, of $1.8 billion.
[7]For 1998 to 2003, includes monies transferred to the SMI trust fund for home health agency costs, as provided for by the Balanced Budget Act of 1997 (Public Law 105-33).

Note: Totals do not necessarily equal the sums of rounded components.

Table V.H6.—Operations of the SMI Trust Fund (Cash Basis) during Fiscal Years 1970-2026

[In billions]

	Income					Expenditures			Trust fund	
Fiscal year[1]	Premium income	General revenue[2]	Transfers from States	Interest and other[3,4]	Total	Benefit payments[4,5]	Adminis-trative expense	Total	Net change	Balance at end of year[6]
Historical data:										
1970	$0.9	$0.9	—	$0.0	$1.9	$2.0	$0.2	$2.2	−$0.3	$0.1
1975	1.9	2.3	—	0.1	4.3	3.8	0.4	4.2	0.2	1.4
1980	2.9	6.9	—	0.4	10.3	10.1	0.6	10.7	−0.5	4.5
1985	5.5	17.9	—	1.2	24.6	21.8	0.9	22.7	1.8	10.6
1990	11.5[7]	33.2	—	1.4[7]	46.1[7]	41.5	1.5[7]	43.0[7]	3.1[7]	14.5[7]
1995	19.2	37.0	—	1.9	58.2	63.5	1.7	65.2	−7.0	13.9
2000	20.5	65.6	—	3.2	89.2	87.2[8]	1.8	89.0	0.2	45.9
2005	35.9	115.2	—	1.4	152.5	149.8	2.9	152.7	−0.2	16.9
2010	61.4	213.7	$4.5	3.2	282.7	268.7	3.5	272.2	10.5	72.0
2011	64.5	225.2	6.5	5.3	301.5	296.8	3.8	300.7	0.9	72.8
2012	66.1	210.5	8.3	6.0	290.9	287.8	4.1	291.9	−1.0	71.8
2013	71.3	227.2	8.7	6.0[9]	313.2	311.4	3.8	315.1	−2.0	69.8
2014	75.9	244.4	8.7	6.0[9]	334.9	329.1	4.3	333.4	1.5	71.3
2015	79.4	263.5	8.8	5.9	357.5	355.8	3.6	359.4	−1.9	69.4
2016	86.1	299.5	9.8	5.3	400.7	399.5	4.4	403.9	−3.3	66.2
Intermediate estimates:										
2017	94.1	308.2	11.0	6.6	419.9	411.4	3.5	415.0	4.9	71.1
2018	107.5	319.5	11.9	7.0	445.9	412.8	3.7	416.6	29.4	100.5
2019	116.7	344.1	12.6	6.4	479.8	463.7	4.0	467.7	12.1	112.6
2020	125.3	371.6	13.8	7.0	517.6	506.2	4.2	510.4	7.2	119.8
2021	135.4	401.7	15.0	7.4	559.6	548.6	4.5	553.2	6.5	126.2
2022	145.6	435.0	16.4	7.9	604.9	617.1	4.8	621.9	−17.0	109.3
2023	157.8	470.8	17.7	8.5	654.8	641.2	5.1	646.3	8.5	117.7
2024	171.1	509.0	19.2	9.1	708.3	665.2	5.4	670.5	37.8	155.5
2025	184.4	546.0	20.7	9.9	760.9	737.8	5.7	743.5	17.5	173.0
2026	201.3	594.3	22.1	10.9	828.6	810.0	6.3	816.3	12.2	185.2

[1]Fiscal years 1970 and 1975 consist of the 12 months ending on June 30 of each year; fiscal years 1980 and later consist of the 12 months ending on September 30 of each year.

[2]Includes Part B general fund matching payments, Part D subsidy costs, and certain interest-adjustment items.

[3]Other income includes recoveries of amounts reimbursed from the trust fund that are not obligations of the trust fund and other miscellaneous income. In 2008, includes an adjustment of $0.8 billion for interest inadvertently earned as a result of Part A hospice costs that were misallocated to the Part B trust fund account.

[4]See footnote 2 of table III.B4.

[5]See footnote 3 of table III.B4.

[6]The financial status of SMI depends on both the assets and the liabilities of the trust fund (see table III.C8).

[7]Includes the impact of the Medicare Catastrophic Coverage Act of 1988 (Public Law 100-360).

[8]Benefit payments less monies transferred from the HI trust fund for home health agency costs, as provided for by the Balanced Budget Act of 1997.

[9]See footnote 1 of table V.H4.

Note: Totals do not necessarily equal the sums of rounded components.

Table V.H7.—Operations of the Part B Account in the SMI Trust Fund (Cash Basis) during Fiscal Years 1970-2026

[In billions]

	Income				Expenditures			Account	
Fiscal year[1]	Premium income	General revenue[2]	Interest and other[3,4]	Total	Benefit payments[4,5]	Administrative expense	Total	Net change	Balance at end of year[6]
Historical data:									
1970	$0.9	$0.9	$0.0	$1.9	$2.0	$0.2	$2.2	−$0.3	$0.1
1975	1.9	2.3	0.1	4.3	3.8	0.4	4.2	0.2	1.4
1980	2.9	6.9	0.4	10.3	10.1	0.6	10.7	−0.5	4.5
1985	5.5	17.9	1.2	24.6	21.8	0.9	22.7	1.8	10.6
1990	11.5[7]	33.2	1.4[7]	46.1[7]	41.5	1.5[7]	43.0[7]	3.1[7]	14.5[7]
1995	19.2	37.0	1.9	58.2	63.5	1.7	65.2	−7.0	13.9
2000	20.5	65.6	3.2	89.2	87.2[8]	1.8	89.0	0.2	45.9
2005	35.9	114.0	1.4	151.3	148.6	2.9	151.5	−0.2	16.9
2010	54.8	161.1	3.2	219.0	205.1	3.3	208.4	10.7	71.3
2011	57.0	168.8	5.3	231.2	226.2	3.4	229.6	1.5	72.8
2012	57.9	165.3	6.0	229.1	227.2	3.8	230.9	−1.8	70.9
2013	61.8	176.9	6.0[9]	244.7	243.4	3.4	246.8	−2.1	68.8
2014	64.9	191.4	6.0[9]	262.3	257.0	3.9	260.9	1.4	70.2
2015	67.1	195.8	5.8	268.8	272.0	3.2	275.2	−6.4	63.9
2016	72.5	223.1	5.3	300.8	295.1	4.0	299.1	1.7	65.6
Intermediate estimates:									
2017	79.0	229.3	6.6	314.9	306.3	3.1	309.4	5.5	71.1
2018	91.0	243.0	7.0	341.0	316.1	3.3	319.3	21.7	92.8
2019	98.0	263.4	6.4	367.8	353.0	3.5	356.5	11.3	104.1
2020	104.5	281.5	7.0	393.0	382.8	3.7	386.5	6.5	110.5
2021	112.8	304.9	7.4	425.1	415.4	4.0	419.4	5.7	116.2
2022	121.1	331.8	7.9	460.7	463.5	4.2	467.7	−7.0	109.3
2023	131.2	359.7	8.4	499.4	486.4	4.5	490.9	8.5	117.7
2024	142.5	389.2	9.1	540.7	510.7	4.8	515.4	25.3	143.1
2025	153.7	419.1	9.9	582.6	561.0	5.0	566.1	16.6	159.6
2026	168.3	457.5	10.8	636.6	619.7	5.6	625.4	11.2	170.9

[1]Fiscal years 1970 and 1975 consist of the 12 months ending on June 30 of each year; fiscal years 1980 and later consist of the 12 months ending on September 30 of each year.
[2]General fund matching payments, plus certain interest-adjustment items.
[3]Other income includes recoveries of amounts reimbursed from the trust fund that are not obligations of the trust fund and other miscellaneous income. In 2008, includes an adjustment of $0.8 billion for interest earned as a result of Part A hospice costs that were misallocated to the Part B trust fund account.
[4]See footnote 2 of table III.B4.
[5]See footnote 3 of table III.B4.
[6]The financial status of Part B depends on both the assets and the liabilities of the trust fund (see table III.C8).
[7]Includes the impact of the Medicare Catastrophic Coverage Act of 1988 (Public Law 100-360).
[8]Benefit payments less monies transferred from the HI trust fund for home health agency costs, as provided for by the Balanced Budget Act of 1997.
[9]See footnote 1 of table V.H4.

Note: Totals do not necessarily equal the sums of rounded components.

Table V.H8.—Operations of the Part D Account in the SMI Trust Fund (Cash Basis) during Fiscal Years 2004-2026

[In billions]

	Income					Expenditures			Account	
Fiscal year	Premium income	General revenue[1]	Transfers from States[2]	Interest and other	Total	Benefit payments[3]	Administrative expense	Total	Net change	Balance at end of year[4]
Historical data:										
2004	—	$0.2	—	—	$0.2	$0.2	—	$0.2	—	—
2005	—	1.2	—	—	1.2	1.2	—	1.2	—	—
2006	$2.6	28.3	$3.6	$0.0	34.6	33.7	$0.2	33.9	$0.7	$0.7
2007	3.9	41.4	7.0	0.0	52.3	51.4	1.0	52.4	−0.1	0.6
2008	4.8	35.5	7.0	0.0	47.4	46.8	0.4	47.2	0.2	0.8
2009	5.8	43.5	7.5	0.0	56.9	56.6	0.2	56.8	0.0	0.9
2010	6.6	52.6	4.5	0.0	63.7	63.6	0.3	63.8	−0.2	0.7
2011	7.5	56.3	6.5	0.0	70.4	70.6	0.4	71.0	−0.7	0.0
2012	8.2	45.3	8.3	0.0	61.8	60.6	0.4	61.0	0.8	0.8
2013	9.5	50.3	8.7	0.0	68.5	68.0	0.4	68.3	0.1	1.0
2014	11.0	52.9	8.7	0.0	72.7	72.2	0.4	72.6	0.1	1.1
2015	12.3	67.6	8.8	0.0	88.7	83.8	0.4	84.2	4.5	5.6
2016	13.6	76.4	9.8	0.0	99.9	104.4	0.4	104.9	−5.0	0.6
Intermediate estimates:										
2017	15.1	78.9	11.0	0.0	105.0	105.2	0.5	105.6	−0.6	—
2018	16.6	76.5	11.9	0.0	104.9	96.8	0.5	97.2	7.7	7.7
2019	18.7	80.6	12.6	0.0	112.0	110.7	0.5	111.2	0.8	8.5
2020	20.8	90.1	13.8	0.0	124.6	123.4	0.5	123.9	0.7	9.3
2021	22.7	96.8	15.0	0.0	134.5	133.2	0.5	133.8	0.8	10.0
2022	24.6	103.2	16.4	0.0	144.2	153.6	0.6	154.2	−10.0	—
2023	26.5	111.1	17.7	0.0	155.4	154.9	0.6	155.4	—	—
2024	28.6	119.8	19.2	0.0	167.6	154.5	0.6	155.1	12.4	12.4
2025	30.7	126.9	20.7	0.0	178.3	176.8	0.6	177.4	0.9	13.3
2026	33.0	136.8	22.1	0.0	192.0	190.3	0.7	191.0	1.0	14.3

[1]Includes, net of transfers from States, all government transfers required to fund benefit payments, administrative expenses, and State expenses for making low-income eligibility determinations.
[2]See footnote 3 of table III.D3.
[3]Includes payments to Part D plans, payments to retiree drug subsidy plans, payments to States for making low-income eligibility determinations, Part D drug premiums collected from beneficiaries, and transfers to Medicare Advantage plans and private drug plans. Includes amounts for the Transitional Assistance program of $0.2, $1.1, and $0.2 billion in 2004-2006, respectively.
[4]See footnote 3 of table V.H3.

Note: Totals do not necessarily equal the sums of rounded components.

Table V.H9 shows the total assets of the HI trust fund and their distribution by interest rate and maturity date at the end of fiscal years 2015 and 2016. The assets at the end of fiscal year 2016 totaled $192.4 billion: $192.2 billion in the form of U.S. Government obligations and an undisbursed balance of $0.2 billion.

Table V.H9.—Assets of the HI Trust Fund, by Type, at the End of Fiscal Years 2015 and 2016[1]

	September 30, 2015	September 30, 2016
Investments in public-debt obligations sold only to the trust funds (special issues):		
Certificates of indebtedness:		
2.125-percent, 2016	$10,291,817,000.00	——
1.625-percent, 2017	——	$3,702,852,000.00
Bonds:		
1.875-percent, 2025-2026	——	25,500,234,000.00
2.000-percent, 2024-2025	11,864,939,000.00	11,864,939,000.00
3.250-percent, 2023-2024	18,380,800,000.00	18,380,800,000.00
3.500-percent, 2016	1,669,250,000.00	——
3.500-percent, 2017-2018	16,840,497,000.00	16,840,497,000.00
4.000-percent, 2017	1,201,235,000.00	——
4.000-percent, 2018-2023	27,894,894,000.00	27,894,894,000.00
4.125-percent, 2017	986,225,000.00	——
4.125-percent, 2018-2020	20,776,670,000.00	20,776,670,000.00
4.625-percent, 2017	977,468,000.00	——
4.625-percent, 2018-2019	18,795,433,000.00	18,795,433,000.00
5.000-percent, 2017	979,723,000.00	——
5.000-percent, 2018-2022	24,606,377,000.00	24,606,377,000.00
5.125-percent, 2017	903,572,000.00	——
5.125-percent, 2018-2021	22,418,448,000.00	22,418,448,000.00
5.250-percent, 2017	15,171,247,000.00	1,427,999,000.00
5.625-percent, 2016	1,699,174,000.00	——
Total investments	$195,457,769,000.00	$192,209,143,000.00
Undisbursed balance	451,406,209.78	157,886,120.64
Total assets	$195,909,175,209.78	$192,367,029,120.64

[1]Certificates of indebtedness and bonds are carried at par value, which is the same as book value.

The effective annual rate of interest earned by the assets of the HI trust fund during the 12 months ending on December 31, 2016 was 3.9 percent. Interest on special issues is paid semiannually on June 30 and December 31. The interest rate on public-debt obligations issued for purchase by the trust fund in June 2016 was 1.875 percent, payable semiannually.

Table V.H10 shows a comparison of the total assets of the SMI trust fund, Parts B and D combined, and their distribution at the end of fiscal years 2015 and 2016. At the end of 2016, assets totaled $66.2 billion: $63.3 billion in the form of U.S. Government obligations and an undisbursed balance of $2.9 billion.

Table V.H10.—Assets of the SMI Trust Fund, by Type, at the End of Fiscal Years 2015 and 2016[1]

	September 30, 2015	September 30, 2016
Investments in public-debt obligations sold only to the trust funds (special issues):		
Certificates of indebtedness:		
1.625-percent, 2017	——	$341,326,000.00
1.875-percent, 2017	——	206,418,000.00
2.125-percent, 2016	$12,216,909,000.00	——
Bonds:		
1.875-percent, 2029-2031	——	13,543,136,000.00
2.250-percent, 2024-2029	12,926,435,000.00	12,926,435,000.00
2.500-percent, 2020	563,905,000.00	——
2.500-percent, 2021-2026	8,124,685,000.00	8,124,685,000.00
2.875-percent, 2020	488,227,000.00	234,222,000.00
2.875-percent, 2021-2025	6,694,167,000.00	6,694,167,000.00
3.250-percent, 2020-2024	5,602,720,000.00	5,602,720,000.00
4.000-percent, 2019	814,480,000.00	——
4.000-percent, 2020-2023	9,110,723,000.00	9,110,723,000.00
5.000-percent, 2019	3,034,172,000.00	——
5.000-percent, 2020-2022	6,551,711,000.00	6,551,711,000.00
Total investments	$66,128,134,000.00	$63,335,543,000.00
Undisbursed balance	3,312,683,271.61	2,851,489,893.68
Total assets	$69,440,817,271.61	$66,187,032,893.68

[1]Certificates of indebtedness and bonds are carried at par value, which is the same as book value.

The effective annual rate of interest earned by the assets of the SMI trust fund for the 12 months ending on December 31, 2016 was 2.5 percent. Interest on special issues is paid semiannually on June 30 and December 31. The interest rate on special issues purchased by the account in June 2016 was 1.875 percent, payable semiannually.

I. GLOSSARY

Accountable care organizations (ACOs). Groups of clinicians, hospitals, and other health care providers that choose to come together to deliver coordinated, high-quality care to the Medicare patients they serve.

Actuarial balance. The difference between the summarized income rate and the summarized cost rate over a given valuation period.

Actuarial deficit. A negative actuarial balance.

Actuarial rates. One-half of the Part B expected monthly benefit and administrative costs for each aged enrollee adjusted for interest earned on the Part B account assets attributable to aged enrollees and a contingency margin (for the aged actuarial rate), and one-half of the expected monthly benefit and administrative costs for each disabled enrollee adjusted for interest earned on the Part B account assets attributable to disabled enrollees and a contingency margin (for the disabled actuarial rate), for the duration the rate is in effect.

Actuarial status. A measure of the adequacy of the financing as determined by the difference between assets and liabilities at the end of the periods for which financing was established.

Administrative expenses. Expenses incurred by the Department of Health and Human Services and the Department of the Treasury in administering HI and SMI and the provisions of the Internal Revenue Code relating to the collection of contributions. Such administrative expenses, which are paid from the HI and SMI trust funds, include expenditures for contractors to determine costs of, and make payments to, providers, as well as salaries and expenses of the Centers for Medicare & Medicaid Services (CMS).

Aged enrollee. An individual, aged 65 or over, who is enrolled in HI or SMI.

Allowed charge. Individual charge determined by a Medicare Administrative Contractor for a covered Part B medical service or supply.

Alternative payment model (APM). A program or model (except for a health care innovation award model) implemented by the Center for Medicare and Medicaid Innovation at CMS; an ACO model participating in the Medicare shared savings program; or a Medicare demonstration required by law. An advanced APM is an APM that

meets certain standards for risk-bearing, use of health information technology, and quality.

Annual out-of-pocket threshold. The amount of out-of-pocket expenses that must be paid for prescription drugs before significantly reduced Part D beneficiary cost sharing is effective. Amounts paid by a third-party insurer are not included in testing this threshold, but amounts paid by State or Federal assistance programs are included.

Assets. Treasury notes and bonds guaranteed by the Federal Government, and cash held by the trust funds for investment purposes.

Assumptions. Values relating to future trends in certain key factors that affect the balance in the trust funds. Demographic assumptions include fertility, mortality, net immigration, marriage, divorce, retirement patterns, disability incidence and termination rates, and changes in the labor force. Economic assumptions include unemployment, average earnings, inflation, interest rates, and productivity. Three sets of economic assumptions are presented in the Trustees Report:

(1) The low-cost alternative, with relatively rapid economic growth, low inflation, and favorable (from the standpoint of program financing) demographic conditions;
(2) The intermediate assumptions, which represent the Trustees' best estimates of likely future economic and demographic conditions; and
(3) The high-cost alternative, with slow economic growth, more rapid inflation, and financially disadvantageous demographic conditions.

See also *Hospital assumptions*.

Average market yield. A computation that is made on all marketable interest-bearing obligations of the United States. It is computed on the basis of market quotations as of the end of the calendar month immediately preceding the date of such issue.

Baby boom. The period from the end of World War II through the mid-1960s marked by unusually high birth rates.

Base estimate. The updated estimate of the most recent historical year.

Beneficiary. A person enrolled in HI or SMI. See also *Aged enrollee* and *Disabled enrollee*.

Benefit payments. The amounts disbursed for covered services after the deductible and coinsurance amounts have been deducted.

Benefit period. An alternate name for spell of illness.

Board of Trustees. A Board established by the Social Security Act to oversee the financial operations of the Federal Hospital Insurance Trust Fund and the Federal Supplementary Medical Insurance Trust Fund. The Board comprises six members, four of whom serve automatically by virtue of their positions in the Federal Government: the Secretary of the Treasury, who is the Managing Trustee; the Secretary of Labor; the Secretary of Health and Human Services; and the Commissioner of Social Security. Two other members are public representatives whom the President appoints and the Senate confirms. These positions are currently vacant. The Administrator of CMS serves as Secretary of the Board of Trustees.

Bond. A certificate of ownership of a specified portion of a debt due by the Federal Government to holders, bearing a fixed rate of interest.

Callable. Subject to redemption upon notice, as is a bond.

Case mix index. A relative weight that captures the average complexity of certain Medicare services.

Cash basis. The costs of the service when payment was made rather than when the service was performed.

Certificate of indebtedness. A short-term certificate of ownership (12 months or less) of a specified portion of a debt due by the Federal Government to individual holders, bearing a fixed rate of interest.

Closed-group population. Includes all persons currently participating in the program as either taxpayers or beneficiaries, or both. See also *Open-group population*.

Coinsurance. Portion of the costs for covered services paid by the beneficiary after meeting the annual deductible. See also *Hospital coinsurance* and *SNF coinsurance*.

Consumer Price Index (CPI). A measure of the average change in prices over time in a fixed group of goods and services. In this report, references to the CPI relate to the CPI for Urban Wage Earners and Clerical Workers (CPI-W), except for those cases in which the CPI for All Urban Consumers—all items (CPI-U) is indicated.

Contingency. Funds included in the SMI Part B trust fund account to serve as a cushion in case actual expenditures are higher than those projected at the time financing was established. Since the financing is set prospectively, actual experience may be different from the estimates used in setting the financing.

Contingency margin. An amount included in the actuarial rates to provide for changes in the contingency level in the SMI Part B trust fund account. Positive margins increase the contingency level, and negative margins decrease it.

Contribution base. See *Maximum tax base.*

Contributions. See *Payroll taxes*.

Cost rate. The ratio of HI cost (or outgo or expenditures) on an incurred basis during a given year to the taxable payroll for the year.

Covered earnings. Earnings in employment covered by HI.

Covered employment. All employment and self-employment creditable for Social Security purposes. Almost every kind of employment and self-employment is covered under HI. In a few employment situations—for example, religious orders under a vow of poverty, foreign affiliates of American employers, or State and local governments—coverage must be elected by the employer. However, effective July 1991, coverage is mandatory for State and local employees who are not participating in a public employee retirement system. All new State and local employees have been covered since April 1986. In a few situations—for instance, ministers or self-employed members of certain religious groups—workers can opt out of coverage. Covered employment for HI includes all Federal employees (whereas covered employment for OASDI includes some, but not all, Federal employees).

Covered Part D drugs. Prescription drugs covered under the Medicaid program plus insulin-related supplies and smoking cessation agents. Drugs covered in Parts A and B of Medicare will continue to be covered there, rather than in Part D.

Covered services. Services for which HI or SMI pays, as defined and limited by statute. Covered HI services are provided by hospitals (inpatient care), skilled nursing facilities, home health agencies, and hospices. Covered SMI Part B services include most physician services, care in outpatient departments of hospitals, diagnostic tests, durable

medical equipment, ambulance services, and other health services that are not covered by HI. See *Covered Part D drugs* for SMI Part D.

Covered worker. A person who has earnings creditable for Social Security purposes on the basis of services for wages in covered employment and/or on the basis of income from covered self-employment. The number of HI covered workers is slightly larger than the number of OASDI covered workers because of different coverage status for Federal employment. See *Covered employment*.

Creditable prescription drug coverage. Prescription drug coverage that meets or exceeds the actuarial value of Part D coverage provided through a group health plan or otherwise.

Dedicated financing sources. The sum of HI payroll taxes, HI share of income taxes on Social Security benefits, Part D State transfers, Part B drug fees, and beneficiary premiums. This amount is used in the test of excess general revenue Medicare funding.

Deductible. The annual amount payable by the beneficiary for covered services before Medicare makes reimbursement. See also *Inpatient hospital deductible*.

Deemed wage credit. See *Non-contributory or deemed wage credits*.

Demographic assumptions. See *Assumptions*.

Diagnosis-related groups (DRGs). A classification system that groups patients according to diagnosis, type of treatment, age, and other relevant criteria. Under the inpatient hospital prospective payment system, hospitals are paid a set fee for treating patients in a single DRG category, regardless of the actual cost of care for the individual.

Direct subsidy. The amount paid to the prescription drug plans representing the difference between the plan's risk-adjusted bid and the beneficiary premium for basic coverage.

Disability. For Social Security purposes, the inability to engage in substantial gainful activity by reason of any medically determinable physical or mental impairment that can be expected to result in death or to last for a continuous period of not less than 12 months. Special rules apply for workers aged 55 or older whose disability is based on blindness. The law generally requires that a person be disabled continuously for 5 months before he or she can qualify for a

disabled-worker cash benefit. An additional 24 months is necessary to qualify for benefits under Medicare.

Disability Insurance (DI). See *Old-Age, Survivors, and Disability Insurance (OASDI).*

Disabled enrollee. An individual under age 65 who has been entitled to disability benefits under Title II of the Social Security Act or the Railroad Retirement system for at least 2 years and who is enrolled in HI or SMI.

DRG Coding. The DRG categories used by hospitals on discharge billing. See also *Diagnosis-related groups (DRGs).*

Dual beneficiary. An individual who is eligible for both Medicare and Medicaid.

Durable medical equipment (DME). Items such as iron lungs, oxygen tents, hospital beds, wheelchairs, and seat lift mechanisms that are used in the patient's home and are either purchased or rented.

Earnings. Unless otherwise qualified, all wages from employment and net earnings from self-employment, whether or not taxable or covered.

Economic assumptions. See *Assumptions*.

Economic stabilization program. A legislative program during the early 1970s that limited price increases.

Economy-wide private nonfarm business multifactor productivity. A measure of real output per combined unit of labor and capital, reflecting the contributions of all factors of production for the private nonfarm business sector of the economy.

End-stage renal disease (ESRD). Permanent kidney failure.

Excess general revenue Medicare funding. A determination that occurs when the difference between outlays and dedicated funding sources exceeds or is projected to exceed 45 percent of outlays.

Extended care services. In the context of this report, an alternate name for skilled nursing facility services.

Fallback prescription drug plan. Prescription drug coverage provided by plans bearing no risk. One fallback plan will be approved in regions that do not have a choice of at least two at-risk plans.

Federal Insurance Contributions Act (FICA). Provision authorizing taxes on the wages of employed persons to provide for OASDI and HI. The tax is paid in equal amounts by covered workers and their employers.

Financial interchange. Provisions of the Railroad Retirement Act providing for transfers between the trust funds and the Social Security Equivalent Benefit Account of the Railroad Retirement program in order to place each trust fund in the same position as if railroad employment had always been covered under Social Security.

Fiscal year. The accounting year of the U.S. Government. Since 1976, each fiscal year has begun October 1 of the prior calendar year and ended the following September 30. For example, fiscal year 2017 began October 1, 2016 and will end September 30, 2017.

Fixed capital assets. The net worth of facilities and other resources.

Frequency distribution. An exhaustive list of possible outcomes for a variable, and the associated probability of each outcome. The sum of the probabilities of all possible outcomes from a frequency distribution is 100 percent.

General fund of the Treasury. Funds held by the U.S. Treasury, other than revenue collected for a specific trust fund (such as HI or SMI) and maintained in a separate account for that purpose. The majority of this fund is derived from individual and business income taxes.

General revenue. Income to the HI and SMI trust funds from the general fund of the Treasury. Only a very small percentage of total HI trust fund income each year is attributable to general revenue.

Gross Domestic Product (GDP). The total dollar value of all goods and services produced in a year in the United States, regardless of who supplies the labor or property.

High-cost alternative. See *Assumptions*.

Hold-harmless provision. A provision limiting the dollar increase in the Part B premium to the dollar increase in an individual's Social Security benefit. As a result, the person affected pays a lower Part B premium, and the net amount of the individual's Social Security benefit does not decrease despite the greater increase in the premium.

Home health agency (HHA). A public agency or private organization that is primarily engaged in providing the following services in the home: skilled nursing services, other therapeutic services (such as physical, occupational, or speech therapy), and home health aide services.

Hospice. A provider of care for the terminally ill; delivered services generally include home health care, nursing care, physician services, medical supplies, and short-term inpatient hospital care.

Hospital assumptions. These include differentials between hospital labor and non-labor indices compared with general economy labor and non-labor indices; rates of admission incidence; the trend toward treating less complicated cases in outpatient settings; and continued improvement in DRG coding.

Hospital coinsurance. For the 61st through 90th day of hospitalization in a benefit period, a daily amount for which the beneficiary is responsible, equal to one-fourth of the inpatient hospital deductible; for lifetime reserve days, a daily amount for which the beneficiary is responsible, equal to one-half of the inpatient hospital deductible (see *Lifetime reserve days*).

Hospital input price index. An alternate name for hospital market basket.

Hospital Insurance (HI). The Medicare trust fund that covers specified inpatient hospital services, posthospital skilled nursing care, home health services, and hospice care for aged and disabled individuals who meet the eligibility requirements. Also known as Medicare Part A.

Hospital market basket. The cost of the mix of goods and services (including personnel costs but excluding nonoperating costs) comprising routine, ancillary, and special care unit inpatient hospital services.

Income rate. The ratio of HI income (including payroll taxes, income from taxation of Social Security benefits, premiums, general revenue transfers for uninsured beneficiaries, and monies from fraud and abuse control activities, but excluding interest income) to taxable payroll for the year.

Incurred basis. The costs based on when the service was performed rather than when the payment was made.

Infinite horizon. The period extending into the indefinite future.

Independent laboratory. A free-standing clinical laboratory meeting conditions for participation in the Medicare program.

Initial coverage limit. The amount up to which the coinsurance applies under the standard prescription drug benefit.

Inpatient hospital deductible. An amount of money that is deducted from the amount payable by Medicare Part A for inpatient hospital services furnished to a beneficiary during a spell of illness.

Inpatient hospital services. These services include bed and board, nursing services, diagnostic or therapeutic services, and medical or surgical services.

Interest. A payment for the use of money during a specified period.

Intermediate assumptions. See *Assumptions*.

Late enrollment penalty. Additional beneficiary premium amounts for those who either do not enroll in Part D at the first opportunity or fail to maintain other creditable coverage for more than 63 days.

Lifetime reserve days. Under HI, each beneficiary has 60 lifetime reserve days that he or she may opt to use when regular inpatient hospital benefits are exhausted. The beneficiary pays one-half of the inpatient hospital deductible for each lifetime reserve day used.

Long range. The next 75 years.

Low-cost alternative. See *Assumptions*.

Low-income beneficiaries. Individuals meeting income and assets tests who are eligible for prescription drug coverage subsidies to help finance premiums and out-of-pocket payments.

Managed care. See *Private Health Plans*.

Market basket. See *Hospital market basket*.

Maximum tax base. Annual dollar amount above which earnings in employment covered under HI are not taxable. In 1994, the maximum tax base was eliminated under HI.

Maximum taxable amount of annual earnings. See *Maximum tax base*.

Medicare. A nationwide, federally administered health insurance program authorized in 1965 under Title XVIII of the Social Security Act to cover the cost of hospitalization, medical care, and some related services for most people age 65 and over. In 1972, lawmakers extended coverage to people receiving Social Security Disability Insurance payments for 2 years and people with end-stage renal disease. (For beneficiaries whose primary or secondary diagnosis is Amyotrophic Lateral Sclerosis, the 2-year waiting period is waived.) In 2010, people exposed to environmental health hazards within areas under a corresponding emergency declaration became Medicare-eligible. In 2006, prescription drug coverage was added as well. Medicare consists of two separate but coordinated trust funds: Hospital Insurance (HI, or Part A) and Supplementary Medical Insurance (SMI). The SMI trust fund comprises two separate accounts: the Part B account and the Part D account. Almost all persons who are aged 65 and over or disabled and who are entitled to HI are eligible to enroll in Part B and Part D on a voluntary basis by paying monthly premiums.

Medicare Administrative Contractor (MAC). A private health care insurer that processes Part A and Part B medical claims or DME claims for fee-for-service beneficiaries.

Medicare Advantage (formerly called Medicare+Choice). An expanded set of options, established by the Medicare Modernization Act, for the delivery of health care under Medicare. Most Medicare beneficiaries can choose to receive benefits through the original fee-for-service program or through one of the following Medicare Advantage plans: (i) coordinated care plans (such as health maintenance organizations, provider-sponsored organizations, and preferred provider organizations); (ii) medical savings account (MSA)/high-deductible plans; (iii) private fee-for-service plans; or (iv) special needs plans.

Medicare Advantage Prescription Drug Plan (MA-PD). Prescription drug coverage provided by Medicare Advantage plans.

Medicare Advantage ratebook. A set of statutory capitation payment rates, by county, originally used directly to establish payments to private health insurance plans contracting with Medicare. Under current law, the ratebook amounts are used as benchmarks, against which plan costs are compared in the calculation of plan payments.

Medicare Economic Index (MEI). An index often used in the calculation of the increases in the prevailing charge levels that help to

determine allowed charges for physician services. In 1992 and later, this index is considered in connection with the update factor for the physician fee schedule.

Medicare funding warning. A warning triggered when a determination of excess general revenue Medicare funding has occurred in 2 consecutive years. Such a warning requires the President to submit to Congress, within 15 days after the date of the Budget submission for the succeeding year, proposed legislation to respond to the warning. The law also requires Congress to consider the legislation proposed in response to Medicare funding warnings on an expedited basis. See also *Excess general revenue Medicare funding*.

Medicare Payment Advisory Commission (MedPAC). A commission established by Congress in the Balanced Budget Act of 1997 to replace the Prospective Payment Assessment Commission and the Physician Payment Review Commission. MedPAC is directed to provide the Congress with advice and recommendations on policies affecting the Medicare program.

Medicare Prescription Drug Account. The separate account within the SMI trust fund to manage revenues and expenditures of the Part D drug benefit.

Medicare severity diagnosis-related groups (MS-DRGs). A refinement of the diagnosis-related group classification system that groups patients according to diagnosis, type of treatment, age, and other relevant criteria. Under the inpatient hospital prospective payment system, hospitals are paid a set fee for treating patients in a single MS-DRG category, regardless of the actual cost of care for the individual.

Merit-based incentive payment system (MIPS). A system for adjusting payments under the Medicare physician fee schedule to non-advanced APM providers based on metrics assessing provider quality, resource use, meaningful use of electronic health records, and clinical practice improvement activities.

Military service wage credits. Credits recognizing that military personnel receive other cash payments and wages in kind (such as food and shelter) in addition to their basic pay. Noncontributory wage credits of $160 were provided for each month of active military service from September 16, 1940 through December 31, 1956. For years after 1956, the basic pay of military personnel is covered under the Social Security program on a contributory basis. In addition to contributory

credits for basic pay, noncontributory wage credits of $300 were granted for each calendar quarter in which a person received pay for military service from January 1957 through December 1977. Deemed wage credits of $100 were granted for each $300 of military wages, up to a maximum of $1,200 per calendar year, from January 1978 through December 2001. See also *Quinquennial military service determinations and adjustments*.

National average monthly bid. The weighted average of all Part D drug bids including all of the bids from PDPs and the drug portion of bids from MA-PDs.

Noncontributory or deemed wage credits. Wages and wages in kind that were not subject to the HI tax but are deemed as having been. Deemed wage credits exist for the purposes of (i) determining HI eligibility for individuals who might not be eligible for HI coverage without payment of a premium were it not for the deemed wage credits and (ii) calculating reimbursement due the HI trust fund from the general fund of the Treasury. The first purpose applies in the case of providing coverage to persons during the transitional periods when HI began and when it was expanded to cover Federal employees; both purposes apply in the cases of military service wage credits and deemed wage credits granted for the internment of persons of Japanese ancestry during World War II.

Old-Age, Survivors, and Disability Insurance (OASDI). The Social Security programs that pay for (i) monthly cash benefits to retired-worker (old-age) beneficiaries, their spouses and children, and survivors of deceased insured workers (OASI); and (ii) monthly cash benefits to disabled-worker beneficiaries and their spouses and children, and for providing rehabilitation services to the disabled (DI).

Open-group population. Includes all persons who will ever participate in the program as either taxpayers or beneficiaries, or both. See also *Closed-group population*.

Outpatient hospital. Part of the hospital providing services covered by SMI Part B, including, for example, services in an emergency room or outpatient clinic, ambulatory surgical procedures, medical supplies such as splints, and laboratory tests billed by the hospital.

Part A. The Medicare Hospital Insurance trust fund.

Part A premium. A monthly premium paid by or on behalf of individuals who wish for and are entitled to voluntary enrollment in

Medicare HI. These individuals are those who are aged 65 and older, are uninsured for Social Security or Railroad Retirement, and do not otherwise meet the requirements for entitlement to Part A. Disabled individuals who have exhausted other entitlement are also qualified. These individuals are those not now entitled but who have been entitled under section 226(b) of the Social Security Act, who continue to have the disabling impairment upon which their entitlement was based, and whose entitlement ended solely because the individuals had earnings that exceeded the substantial gainful activity amount (as defined in section 223(d)(4) of the Social Security Act).

Part B. The account within the Medicare Supplementary Medical Insurance trust fund that pays for a portion of the costs of physician services, outpatient hospital services, and other related medical and health services for voluntarily enrolled aged and disabled individuals.

Part B premium. The monthly amount paid by those individuals who have voluntarily enrolled in Part B. Most enrollees pay the standard premium amount, which currently represents approximately 25 percent of the average program costs for an aged beneficiary. Beneficiaries with high income are also required to pay an income-related monthly adjustment amount starting in 2007, and those who enroll late are required to pay a penalty. In addition, beneficiaries who are affected by the hold-harmless provision pay a lower premium. See section V.E for more details about the Part B premium.

Part C. See *Private health plans*.

Part D. The account within the Medicare Supplementary Medical Insurance trust fund that pays private plans to provide prescription drug coverage.

Pay-as-you-go financing. A financing scheme in which taxes are scheduled to produce just as much income as required to pay current benefits, with trust fund assets built up only to the extent needed to prevent depletion of the fund by random fluctuations.

Payroll taxes. Taxes levied on the gross wages of employees and net earnings of self-employed workers.

PDP regions. Regional areas that are fully serviced by prescription drug plans.

Peer Review Organization (PRO). A group of practicing physicians and other health care professionals paid by the Federal Government to

review the care given to Medicare patients. Starting in 2002, these organizations are called Quality Improvement Organizations.

Percentile. A number that corresponds to one of the equal divisions of the range of a variable in a given sample and that characterizes a value of the variable as not exceeded by a specified percentage of all the values in the sample. For example, a score higher than 97 percent of those attained is said to be in the 97th percentile.

Prescription Drug Plans (PDPs). Stand-alone prescription drug plans offered to beneficiaries in traditional fee-for-service Medicare and to beneficiaries in Medicare Advantage plans that do not offer a prescription drug benefit.

Present value. The present value of a future stream of payments is the lump-sum amount that, if invested today, together with interest earnings would be just enough to meet each of the payments as it fell due. At the time of the last payment, the invested fund would be exactly zero.

Private health plans. Plans offered by private companies that contract with Medicare to provide coverage for Part A and Part B services. Medicare Advantage plans, cost plans, and Program of All-Inclusive Care for the Elderly (PACE) plans are all private health plans.

Projection error. Degree of variation between estimated and actual amounts.

Prospective payment system (PPS). A method of reimbursement in which Medicare payment is made based on a predetermined, fixed amount. The payment amount for a particular service is derived based on the classification system of that service (for example, DRGs for inpatient hospital services).

Provider. Any organization, institution, or individual who provides health care services to Medicare beneficiaries. Hospitals (inpatient services), skilled nursing facilities, home health agencies, and hospices are the providers of services covered under Medicare Part A. Physicians, ambulatory surgical centers, and outpatient clinics are some of the providers of services covered under Medicare Part B.

Quality Improvement Organization (QIO). See *Peer Review Organization*.

Quinquennial military service determination and adjustments. Prior to the Social Security Amendments of 1983, quinquennial determinations (that is, estimates made once every 5 years) were made of the costs arising from the granting of deemed wage credits for military service prior to 1957; annual reimbursements were made from the general fund of the Treasury to the HI trust fund for these costs. The Social Security Amendments of 1983 provided for (i) a lump-sum transfer in 1983 for (a) the costs arising from the pre-1957 wage credits and (b) amounts equivalent to the HI taxes that would have been paid on the deemed wage credits for military service for 1966 through 1983, inclusive, if such credits had been counted as covered earnings; (ii) quinquennial adjustments to the pre-1957 portion of the 1983 lump-sum transfer; (iii) general fund transfers equivalent to HI taxes on military deemed wage credits for 1984 and later, to be credited to the fund on July 1 of each year; and (iv) adjustments as deemed necessary to any previously transferred amounts representing HI taxes on military deemed wage credits.

Railroad Retirement. A Federal insurance program similar to Social Security designed for workers in the railroad industry. The provisions of the Railroad Retirement Act provide for a system of coordination and financial interchange between the Railroad Retirement program and the Social Security program.

Ratebook. See *Medicare Advantage ratebook*.

Real-wage differential. The difference between the percentage increases, before rounding, in (i) the average annual wage in covered employment and (ii) the average annual CPI.

Reasonable-cost basis. The calculation to determine the reasonable cost incurred by individual providers when furnishing covered services to beneficiaries. The reasonable cost is based on the actual cost of providing such services, including direct and indirect costs of providers, and excluding any costs that are unnecessary in the efficient delivery of services covered by a health insurance program.

Reinsurance subsidy. Payments to the prescription drug plans in the amount of 80 percent of drug expenses that exceed the annual out-of-pocket threshold.

Residual factors. Factors other than price, including volume of services, intensity of services, and age/sex changes.

Risk corridor. Triggers that are set to protect Part D prescription drug plans from unexpected losses and that allow the government to share in unexpected gains.

Self-employment. Operation of a trade or business by an individual or by a partnership in which an individual is a member.

Self-Employment Contributions Act (SECA). Provision authorizing taxes on the net income of most self-employed persons to provide for OASDI and HI.

Sequester. The reduction of funds to be used for benefits or administrative costs from a Federal account, based on the legislated requirements.

Short range. The next 10 years.

Skilled nursing facility (SNF). An institution that is primarily engaged in providing skilled nursing care and related services for residents who require medical or nursing care or that is engaged in the rehabilitation of injured, disabled, or sick persons.

SNF coinsurance. For the 21st through 100th day of extended care services in a benefit period, a daily amount for which the beneficiary is responsible, equal to one-eighth of the inpatient hospital deductible.

Social Security Act. Public Law 74-271, enacted on August 14, 1935, with subsequent amendments. The Social Security Act consists of 20 titles, four of which have been repealed. The HI and SMI trust funds are authorized by Title XVIII of the Social Security Act.

Special public-debt obligation. Securities of the U.S. Government issued exclusively to the OASI, DI, HI, and SMI trust funds and other Federal trust funds. Sections 1817(c) and 1841(a) of the Social Security Act provide that the public-debt obligations issued for purchase by the HI and SMI trust funds, respectively, shall have maturities fixed with due regard for the needs of the funds. The usual practice in the past has been to spread the holdings of special issues, as of every June 30, so that the amounts maturing in each of the next 15 years are approximately equal. Special public-debt obligations are redeemable at par at any time.

Spell of illness. A period of consecutive days, beginning with the first day on which a beneficiary is furnished inpatient hospital or extended care services, and ending with the close of the first period of

60 consecutive days thereafter in which the beneficiary is in neither a hospital nor a skilled nursing facility.

Standard prescription drug coverage. Part D prescription drug coverage that includes a deductible, coinsurance up to an initial coverage limit, and protection against high out-of-pocket expenditures by having reduced coinsurance provisions for individuals exceeding the out-of-pocket threshold.

Stochastic model. An analysis involving a random variable. For example, a stochastic model may include a frequency distribution for one assumption. From the frequency distribution, possible outcomes for the assumption are selected randomly for use in an illustration.

Summarized cost rate. The ratio of the present value of expenditures to the present value of the taxable payroll for the years in a given period. The summarized cost rate includes the cost of reaching and maintaining a target trust fund level, known as a contingency fund ratio. Because a trust fund level of about one year's expenditures is considered to be an adequate reserve for unforeseen contingencies, the targeted contingency fund ratio used in determining summarized cost rates is 100 percent of annual expenditures. Accordingly, the summarized cost rate is equal to the ratio of (i) the sum of the present value of the outgo during the period, plus the present value of the targeted ending trust fund level, plus the beginning trust fund amount, to (ii) the present value of the taxable payroll during the period.

Summarized income rate. The ratio of the present value of HI income (including payroll taxes, income from taxation of Social Security benefits, premiums, general revenue transfers for uninsured beneficiaries, and monies from fraud and abuse control activities, but excluding interest income) incurred during a given period to the present value of the taxable payroll for the years in the period.

Supplemental prescription drug coverage. Coverage in excess of the standard prescription drug coverage.

Supplementary Medical Insurance (SMI). The Medicare trust fund comprising the Part B account, the Part D account, and the Transitional Assistance Account. The Part B account pays for a portion of the costs of physician services, outpatient hospital services, and other related medical and health services for voluntarily enrolled aged and disabled individuals. The Part D account pays private plans to provide prescription drug coverage, beginning in 2006. The

Transitional Assistance Account paid for transitional assistance under the prescription drug card program in 2004 and 2005.

Sustainable growth rate. A system for establishing goals for the rate of growth in Medicare Part B expenditures for physician services. The Medicare Access and CHIP Reauthorization Act of 2015 permanently repealed the sustainable growth rate formula.

Tax rate. The percentage of taxable earnings, up to the maximum tax base, that is paid for the HI tax. Currently, the percentages are 1.45 for employees and employers, each. The self-employed pay 2.9 percent. There is an additional 0.9-percent tax on earnings above $200,000 (for those who file an individual tax return) or $250,000 (for those who file a joint income tax return).

Taxable earnings. Taxable wages and/or self-employment income under the prevailing annual maximum taxable limit.

Taxable payroll. A weighted average of taxable wages and taxable self-employment income. When multiplied by the combined employee-employer tax rate, it yields the total amount of taxes incurred by employees, employers, and the self-employed for work during the period.

Taxable self-employment income. Net earnings from self-employment—generally above $400 and below the annual maximum taxable amount for a calendar or other taxable year—less any taxable wages in the same taxable year.

Taxable wages. Wages paid for services rendered in covered employment up to the annual maximum taxable amount.

Taxation of benefits. Beginning in 1994, up to 85 percent of an individual's or a couple's OASDI benefits are potentially subject to Federal income taxation under certain circumstances. The revenue derived from taxation of benefits in excess of 50 percent, up to 85 percent, is allocated to the HI trust fund.

Taxes. See *Payroll taxes*.

Term insurance. A type of insurance that is in force for a specified period of time.

Test of Long-Range Close Actuarial Balance. The conditions required to meet this test are as follows: (i) The trust fund satisfies the short-range test of financial adequacy; and (ii) the trust fund ratios

stay above zero throughout the 75-year projection period, such that benefits would be payable in a timely manner throughout the period. This test is applied to HI trust fund projections made under the intermediate assumptions.

Test of Short-Range Financial Adequacy. The conditions required to meet this test are as follows: (i) If the trust fund ratio for a fund exceeds 100 percent at the beginning of the projection period, then it must be projected to remain at or above 100 percent throughout the 10-year projection period; (ii) alternatively, if the fund ratio is initially less than 100 percent, it must be projected to reach a level of at least 100 percent within 5 years (and not be depleted at any time during this period), and then remain at or above 100 percent throughout the rest of the 10-year period. This test is applied to HI trust fund projections made under the intermediate assumptions.

Transitional assistance. An interim benefit for 2004 and 2005 that provided up to $600 per year to assist low-income beneficiaries who had no drug insurance coverage with prescription drug purchases. This benefit also paid the enrollment fee in the Medicare Prescription Drug Discount Card program.

Transitional Assistance Account. The separate account within the SMI trust fund that managed revenues and expenditures for the transitional assistance drug benefit in 2004 and 2005.

Trust fund. Separate accounts in the U.S. Treasury, mandated by Congress, whose assets may be used only for a specified purpose. For the HI and SMI trust funds, monies not withdrawn for current benefit payments and administrative expenses are invested in interest-bearing Federal securities, as required by law; the interest earned is also deposited in the trust funds.

Trust fund ratio. A short-range measure of the adequacy of the HI and SMI trust fund level; defined as the assets at the beginning of the year expressed as a percentage of the outgo during the year.

Uninsured beneficiaries. HI beneficiaries who do not have 40 quarters of covered earnings but are entitled to HI coverage either because (i) they were deemed additional wage credits during the transitional periods when the HI program began or when it was expanded to cover Federal employees, or because (ii) they pay a monthly premium that is intended to cover their full cost. See *Part A premium*.

Unit input intensity allowance. The amount added to, or subtracted from, the hospital input price index to yield the prospective payment system update factor.

Valuation period. A period of years that is considered as a unit for purposes of calculating the status of a trust fund.

Voluntary enrollees. Certain individuals, aged 65 or older or disabled, who are not otherwise entitled to Medicare and who opt to obtain coverage under Part A by paying a monthly premium.

Year of depletion. The first year in which a trust fund is unable to pay full benefits when due because the assets of the fund are depleted.

TABLES

II.B1.— Medicare Data for Calendar Year 2016 10
II.C1.— Key Assumptions, 2041-2091 13
II.D1.— Components of Increase in Medicare Incurred Expenditures by Part 20
II.E1.— Estimated Operations of the HI Trust Fund under Intermediate Assumptions, Calendar Years 2016-2026 26
II.F1.— Estimated Operations of the SMI Trust Fund under Intermediate Assumptions, Calendar Years 2016-2026 32
II.F2.— Average Annual Rates of Growth in SMI and the Economy 36
II.F3.— SMI General Revenues as a Percentage of Personal and Corporate Federal Income Taxes 39
III.B1.— Statement of Operations of the HI Trust Fund during Calendar Year 2016 45
III.B2.— Tax Rates and Maximum Tax Bases 47
III.B3.— Comparison of Actual and Estimated Operations of the HI Trust Fund, Calendar Year 2016 50
III.B4.— Operations of the HI Trust Fund during Calendar Years 1970-2026 54
III.B5.— Estimated Operations of the HI Trust Fund during Calendar Years 2016-2026, under Alternative Sets of Assumptions 57
III.B6.— Ratio of Assets at the Beginning of the Year to Expenditures during the Year for the HI Trust Fund 59
III.B7.— HI Cost and Income Rates 62
III.B8.— HI Actuarial Balances under Three Sets of Assumptions 67
III.B9.— Components of 75-Year HI Actuarial Balance under Intermediate Assumptions (2017-2091) 68
III.B10.—Change in the 75-Year Actuarial Balance since the 2016 Report 72
III.B11.—Estimated HI Income Rates, Cost Rates, and Actuarial Balances, Based on Intermediate Estimates with Various Real-Wage Assumptions 73
III.B12.—Estimated HI Income Rates, Cost Rates, and Actuarial Balances, Based on Intermediate Estimates with Various CPI-Increase Assumptions 74
III.B13.—Estimated HI Income Rates, Cost Rates, and Actuarial Balances, Based on Intermediate Estimates with Various Real-Interest Assumptions 75
III.B14.—Estimated HI Income Rates, Cost Rates, and Actuarial Balances, Based on Intermediate Estimates with Various Health Care Cost Growth Rate Assumptions 76
III.C1.— Statement of Operations of the Part B Account in the SMI Trust Fund during Calendar Year 2016 78
III.C2.— Standard Part B Monthly Premium Rates, Actuarial Rates, and Premium Rates as a Percentage of Part B Cost 81

III.C3.— Comparison of Actual and Estimated Operations of the Part B Account in the SMI Trust Fund, Calendar Year 2016 84
III.C4.— Operations of the Part B Account in the SMI Trust Fund (Cash Basis) during Calendar Years 1970-2026 87
III.C5.— Growth in Part B Benefits (Cash Basis) through December 31, 2026 89
III.C6.— Estimated Operations of the Part B Account in the SMI Trust Fund during Calendar Years 2016-2026, under Alternative Sets of Assumptions 90
III.C7.— Estimated Part B Income and Expenditures (Incurred Basis) for Financing Periods through December 31, 2017 93
III.C8.— Summary of Estimated Part B Assets and Liabilities as of the End of the Financing Period, for Periods through December 31, 2017 94
III.C9.— Actuarial Status of the Part B Account in the SMI Trust Fund under Three Cost Sensitivity Scenarios for Financing Periods through December 31, 2017 96
III.C10.—Part B Expenditures (Incurred Basis) as a Percentage of the Gross Domestic Product 97
III.D1.— Statement of Operations of the Part D Account in the SMI Trust Fund during Calendar Year 2016 99
III.D2.— Comparison of Actual and Estimated Operations of the Part D Account in the SMI Trust Fund, Calendar Year 2016 102
III.D3.— Operations of the Part D Account in the SMI Trust Fund (Cash Basis) during Calendar Years 2004-2026 105
III.D4.— Growth in Part D Benefits (Cash Basis) through December 31, 2026 106
III.D5.— Estimated Operations of the Part D Account in the SMI Trust Fund during Calendar Years 2016-2026, under Alternative Sets of Assumptions 108
III.D6.— Part D Expenditures (Incurred Basis) as a Percentage of the Gross Domestic Product 111
IV.A1.— Components of Historical and Projected Increases in HI Inpatient Hospital Payments 115
IV.A2.— Relationship between Increases in HI Expenditures and Increases in Taxable Payroll 119
IV.A3.— Aggregate Part A Reimbursement Amounts on an Incurred Basis 122
IV.A4.— Summary of HI Alternative Projections 123
IV.B1.— Components of Increases in Total Allowed Charges per Fee-for-Service Enrollee for Practitioner Services 128
IV.B2.— Incurred Reimbursement Amounts per Fee-for-Service Enrollee for Practitioner Services 130
IV.B3.— Increases Costs per Fee-for-Service Enrollee for Institutional Services 133

IV.B4.— Incurred Reimbursement Amounts per Fee-for-Service Enrollee for Institutional Services 134
IV.B5.— Fee-for-Service Enrollment and Incurred Reimbursement for Beneficiaries under Age 65 with End-Stage Renal Disease 136
IV.B6.— Aggregate Part B Reimbursement Amounts on an Incurred Basis 137
IV.B7.— Part D Enrollment 141
IV.B8.— Key Factors for Part D Expenditure Estimates 143
IV.B9.— Incurred Reimbursement Amounts per Enrollee for Part D Expenditures 145
IV.B10.—Aggregate Part D Reimbursements on an Incurred Basis 146
IV.B11.—Part D Assumptions under Alternative Scenarios for Calendar Years 2016-2026 147
IV.C1.— Private Health Plan Enrollment 151
IV.C2.— Medicare Payments to Private Health Plans, by Trust Fund 155
IV.C3.— Incurred Expenditures per Private Health Plan Enrollee 156
V.B1.— Total Medicare Income, Expenditures, and Trust Fund Assets during Calendar Years 1970-2026 177
V.B2.— Key Rates of Growth for IPAB Determination 179
V.B3.— Hl and SMI Incurred Expenditures as a Percentage of the Gross Domestic Product 181
V.B4.— Medicare Enrollment 183
V.B5.— Medicare Sources of Income as a Percentage of Total Non-Interest Income 184
V.B6.— Comparative Growth Rates of Medicare, Private Health Insurance, National Health Expenditures, and GDP 187
V.D1.— HI and SMI Average per Beneficiary Costs 197
V.E1.— HI Cost-Sharing and Premium Amounts 200
V.E2.— SMI Cost-Sharing and Premium Amounts 201
V.E3.— Part B Income-Related Monthly Premium Amounts 202
V.E4.— Part D Income-Related Monthly Premium Adjustment Amounts 204
V.F1.— Annual Revenues and Expenditures for Medicare and Social Security Trust Funds and the Total Federal Budget, Fiscal Year 2016 208
V.F2.— Present Values of Projected Revenue and Cost Components of 75-Year Open-Group Obligations for HI, SMI, and OASDI 210
V.G1.— Unfunded HI Obligations from Program Inception through the Infinite Horizon 214
V.G2.— Unfunded HI Obligations for Current and Future Program Participants through the Infinite Horizon 215
V.G3.— Unfunded Part B Obligations from Program Inception through the Infinite Horizon 216

V.G4.— Unfunded Part B Obligations for Current and Future Program Participants through the Infinite Horizon.....217
V.G5.— Unfunded Part D Obligations from Program Inception through the Infinite Horizon.....218
V.G6.— Unfunded Part D Obligations for Current and Future Program Participants through the Infinite Horizon.....219
V.H1.— Statement of Operations of the HI Trust Fund during Fiscal Year 2016.....220
V.H2.— Statement of Operations of the Part B Account in the SMI Trust Fund during Fiscal Year 2016.....221
V.H3.— Statement of Operations of the Part D Account in the SMI Trust Fund during Fiscal Year 2016.....222
V.H4.— Total Medicare Income, Expenditures, and Trust Fund Assets during Fiscal Years 1970-2026.....223
V.H5.— Operations of the HI Trust Fund during Fiscal Years 1970-2026.....224
V.H6.— Operations of the SMI Trust Fund (Cash Basis) during Fiscal Years 1970-2026.....226
V.H7.— Operations of the Part B Account in the SMI Trust Fund (Cash Basis) during Fiscal Years 1970-2026.....227
V.H8.— Operations of the Part D Account in the SMI Trust Fund (Cash Basis) during Fiscal Years 2004-2026.....228
V.H9.— Assets of the HI Trust Fund, by Type, at the End of Fiscal Years 2015 and 2016.....229
V.H10.— Assets of the SMI Trust Fund, by Type, at the End of Fiscal Years 2015 and 2016.....230

FIGURES

I.1.— Medicare Expenditures as a Percentage of the Gross Domestic Product under Current Law and Illustrative Alternative Projections 4
II.D1.— Medicare Expenditures as a Percentage of the Gross Domestic Product 19
II.D2.— Medicare Sources of Non-Interest Income and Expenditures as a Percentage of the Gross Domestic Product 21
II.E1.— HI Trust Fund Balance at Beginning of Year as a Percentage of Annual Expenditures 27
II.E2.— Long-Range HI Non-Interest Income and Cost as a Percentage of Taxable Payroll, Intermediate Assumptions 29
II.F1.— SMI Expenditures and Premiums as a Percentage of the Gross Domestic Product 35
II.F2.— Comparison of Average Monthly SMI Benefits, Premiums, and Cost Sharing to the Average Monthly Social Security Benefit 37
III.B1.— HI Expenditures and Income 52
III.B2.— HI Trust Fund Balance at the Beginning of the Year as a Percentage of Annual Expenditures 60
III.B3.— Estimated HI Cost and Income Rates as a Percentage of Taxable Payroll 63
III.B4.— Workers per HI Beneficiary 65
III.B5.— Present Value of Cumulative HI Taxes Less Expenditures through Year Shown, Evaluated under Current-Law Tax Rates and Legislated Expenditures 69
III.B6.— Comparison of HI Cost and Income Rate Projections: Current versus Prior Year's Reports 70
III.C1.— Part B Aged and Disabled Monthly Per Capita Income 82
III.C2.— Premium Income as a Percentage of Part B Expenditures 88
III.C3.— Actuarial Status of the Part B Account in the SMI Trust Fund through Calendar Year 2017 96
III.C4.— Comparison of Part B Projections as a Percentage of the Gross Domestic Product: Current versus Prior Year's Reports 98
III.D1.— Comparison of Part D Projections as a Percentage of the Gross Domestic Product: Current versus Prior Year's Reports 112
V.B1.— Projected Difference between Total Medicare Outlays and Dedicated Financing Sources, as a Percentage of Total Outlays 186
V.C1.— Medicare Expenditures as a Percentage of the Gross Domestic Product under Current Law and Illustrative Alternative Projections 194

J. STATEMENT OF ACTUARIAL OPINION

It is my opinion that (1) the techniques and methodology used herein to evaluate the financial status of the Federal Hospital Insurance Trust Fund and the Federal Supplementary Medical Insurance Trust Fund are based upon sound principles of actuarial practice and are generally accepted within the actuarial profession; and (2) with the important caveats noted below, the principal assumptions used and the resulting actuarial estimates are, individually and in the aggregate, reasonable for the purpose of evaluating the financial status of the trust funds, taking into consideration the past experience and future expectations for the population, the economy, and the program. I am a member of the American Academy of Actuaries and I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

The methods for updating Medicare payment rates are specified by law and may prove challenging to implement without serious consequences for program access or quality. In particular, physician payment rate updates are not expected to keep up with underlying physician costs, and the annual price updates for most categories of non-physician health services will be adjusted downward each year by the growth in economy-wide productivity. Sustaining these price reductions will be challenging for health care providers, 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.

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. Overriding the price updates specified in current law, as lawmakers repeatedly did in the case of physician payment rates under the SGR formula, would lead to substantially higher costs for Medicare in the long range than those projected in this report.

I encourage readers to review the illustrative alternative projection. This scenario includes price update assumptions constructed to transition from the price updates specified in current law to levels consistent with the overall health economy, and therefore it provides the potential magnitude of the understatement of Medicare costs

relative to the current-law projections. The illustrative alternative scenario is summarized in appendix V.C of this report, and additional details are available at http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Reports TrustFunds/Downloads/2017TRAlternativeScenario.pdf.

Paul Spitalnic
Associate, Society of Actuaries
Member, American Academy of Actuaries
Chief Actuary, Centers for Medicare & Medicaid Services