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Social Security and Medicare Lifetime Benefits and Taxes

2018 Update

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Since 2003, we and our colleagues have released periodic data on Social Security and Medicare lifetime benefits and taxes. This brief provides updated estimates of Social Security and Medicare lifetime benefits and taxes for households with different earnings histories, updated to the latest information on income, prices, mortality, and related factors. Through this lens, we can visualize the impact of these retirement and health programs separately and together, comprehensively and annually, based on both benefits received and taxes paid, and across people with different earnings histories. We can see how Social Security has evolved and is scheduled to evolve for 100 years, stretching from a cohort born around the turn of the 20th century to millennials just coming into adulthood. This analysis allows elected officials to compare how various reforms to restore financial balance to Social Security and Medicare would affect households in different generations with different earning histories.

The following tables show the expected present value at age 65 of benefits received in retirement and taxes paid over a career for households with different earnings and marriage histories. The underlying data come from the 2018 Social Security and Medicare trustees' reports (Social Security Board of Trustees 2018; Medicare Boards of Trustees 2018) and supplemental data published by the Social Security Administration and Centers for Medicare & Medicaid Services (CMS). For Medicare lifetime benefits, we use an alternative cost scenario that CMS developed based on its concern that measures in current law would result in a rate of decline in reimbursement rates relative to private health insurance that were not sustainable. (See the discussion of the Medicare cost scenario on page

23.) In calculating expected present values, we use sex-adjusted probabilities to account for chance of death after age 65 and a discount rate of 2 percent plus inflation.

Though annual changes in these estimates tend to be modest when Congress makes few or no changes to the underlying laws, updated estimates increasingly reflect a level of scheduled benefits and taxes that cannot be sustained, because the imbalances unaddressed today only add to the adjustments required of retirees tomorrow. However, for any year of retirement, such as 2020, the largest change from our 2017 analysis derives from converting 2017 dollars to 2018 dollars.

Taxes grow for succeeding cohorts because their real earnings grow. Benefits grow more generous as wages increase, because benefits are scheduled to rise along with wages; people live longer and get more years of benefits, except a brief period as the full retirement age increases from 65 to 67; and health costs increase, in most years faster than do earnings.

Many average-income single adults retiring between 2015 and 2020 will receive about $500,000 in benefits, and couples will receive roughly $1 million, substantially more than previous cohorts. Under scheduled law, millennials who turn 65 around 2050 are projected to receive in real dollars about twice as much as those retiring at the time of this report (i.e., about $1 million for an average-income single adult and $2 million for a couple).

These growth factors are independent of what is sometimes called the baby boom problem, the impact of a declining birth rate starting around the mid-1960s on numbers of beneficiaries relative to numbers of taxpayers. This issue does affect our analysis of the scheduled growth in benefits and taxes per person or per couple. Some reports mistakenly report on Social Security and Medicare's financial imbalances as owing almost solely to the "aging" of that population, but these data show it is much more complicated, and that real economic growth provides many ways to accommodate that aging while still allowing higher levels of real benefits for future cohorts or retirees.

Lifetime taxes represent the amount of money a household would have if its Social Security and Medicare contributions had been saved in an account that earned a 2 percent real rate of return during the household's working years. The households examined here work every year at the same relative earnings level set out in analysis by the Social Security Administration; however, many workers do not work every year because of child raising, graduate school, unemployment, and other factors (see discussion on page 20).

When lifetime retirement and health benefits exceed lifetime Social Security and Medicare taxes, as is true for most households, the value of benefits from those programs is greater than an annuity that the household would have been able to purchase on the private market with their lifetime taxes.

Social Security and Medicare, however, are primarily pay-as-you-go systems, meaning that taxes are not actually invested in accounts but are used to pay benefits for current beneficiaries. This is easiest to see in those years when the trust funds approach zero, as in the early years of Social Security, the years right before the 1983 reform, and soon again in the mid-2030s. But even in years when the

baby boom generation was most fully employed and had not yet started retiring, the trust fund buildup was only a tiny fraction of liabilities.[1]

Thus, we discourage people from using these data to draw conclusions about whether individuals got their "money's worth" out of the system. Each generation's taxes go to support their parents' and grandparents' generations; that doesn't answer the question of what a new generation of retirees is owed by its children and grandchildren, particularly if fewer children per adult means fewer workers to support each retiree.

Comparing lifetime benefits with taxes, however, does offer a systematic way to compare across generations and inform judgments as to whether different cohorts and types of households are treated fairly and efficiently by America's old-age systems, as well as how each generation might share in any increased burden from the reduced benefits or increased taxes required to bring or keep those systems in balance.

In performing these calculations, Medicare premiums paid by individuals are subtracted from Medicare benefits. Higher income-adjusted Medicare premiums for high-income retirees are not included here because they generally do not apply to people with incomes at the levels shown, except those with substantial assets accumulated by time of retirement or with continued earnings above the maximum taxable earnings. Over time, more households will be subject to the income-based premium adjustments because the income thresholds are not indexed to inflation until 2020, and because real wages will rise over time, pushing more households above the thresholds (Cubanski and Neuman 2017).

The numbers presented are averages for hypothetical workers with specific work histories and longevity characteristics. Lifetime benefits and taxes experienced by specific households in the economy will vary based on several factors, including income, health, and choices about marriage, divorce, children, and retirement. The estimates do adjust for the greater expected lifetime benefits of women compared with men because of women's longer life expectancies.

These estimates assume people receive all benefits scheduled under current benefit formulas, regardless of the status of the Social Security or Medicare trust funds. Because both funds face shortfalls in the intermediate future, policies for both programs will inevitably change, and those changes will greatly influence the benefits and taxes of current and future cohorts. From that perspective, future benefits are likely overstated, or taxes understated, or both, for many typical households represented.

When Congress addresses these shortfalls, these tables will help them consider how households in different generations with different earning histories might or should be affected by any tax increases or slowdown in benefit growth.

TABLE 1

Expected Present Value of Lifetime Social Security and Medicare Benefits and Taxes

Single man with low earnings ($23,400 in 2018 dollars)

Year cohort turns age 65	First year Social Security benefit	Lifetime Benefits			Lifetime Taxes		
		Social Security	Medicare (net of premiums)	Total	Social Security	Medicare	Total
1960	6,700	82,000	16,000	98,000	9,000	0	9,000
1965	7,000	92,000	29,000	121,000	14,000	0	14,000
1970	8,000	105,000	41,000	146,000	22,000	1,000	23,000
1975	9,400	117,000	54,000	171,000	32,000	2,000	34,000
1980	10,300	138,000	70,000	208,000	43,000	4,000	47,000
1985	9,700	129,000	87,000	216,000	54,000	7,000	61,000
1990	9,600	135,000	106,000	241,000	67,000	10,000	77,000
1995	10,300	146,000	127,000	273,000	82,000	14,000	96,000
2000	10,400	155,000	146,000	301,000	95,000	19,000	114,000
2005	11,500	177,000	167,000	344,000	109,000	24,000	133,000
2010	12,000	182,000	183,000	365,000	120,000	29,000	149,000
2015	12,000	183,000	202,000	385,000	128,000	33,000	161,000
2020	12,100	193,000	229,000	422,000	135,000	36,000	171,000
2025	12,100	196,000	263,000	459,000	144,000	39,000	183,000
2030	13,200	217,000	299,000	516,000	153,000	42,000	195,000
2035	14,100	235,000	337,000	572,000	161,000	44,000	205,000
2040	15,000	253,000	378,000	631,000	170,000	47,000	217,000
2045	15,900	271,000	421,000	692,000	179,000	50,000	229,000
2050	16,900	291,000	467,000	758,000	190,000	53,000	243,000
2055	17,900	312,000	517,000	829,000	203,000	56,000	259,000
2060	19,000	335,000	573,000	908,000	218,000	60,000	278,000

Source: C. Eugene Steuerle and Caleb Quakenbush, Urban Institute. Based on earlier work with Stephanie Rennane and Adam Carasso.

Notes: 2018 dollars, adjusted to present value at age 65 using a 2 percent real interest rate. Adjusts for mortality after age 65. Assumes benefits scheduled in law will be paid. Worker works every year starting at age 22 and retires at age 65. An average earner has earnings equal to the Social Security Administration's national average wage index each year. A low earner earns 45 percent of the average wage.

TABLE 2

Expected Present Value of Lifetime Social Security and Medicare Benefits and Taxes

Single man with average earnings ($51,900 in 2018 dollars)

Year cohort turns age 65	First year Social Security benefit	Lifetime Benefits			Lifetime Taxes		
		Social Security	Medicare (net of premiums)	Total	Social Security	Medicare	Total
1960	10,100	124,000	16,000	140,000	19,000	0	19,000
1965	10,700	140,000	29,000	169,000	32,000	0	32,000
1970	12,600	165,000	41,000	206,000	49,000	2,000	51,000
1975	15,000	188,000	54,000	242,000	71,000	5,000	76,000
1980	17,100	228,000	70,000	298,000	96,000	9,000	105,000
1985	16,000	212,000	87,000	299,000	121,000	15,000	136,000
1990	15,900	222,000	106,000	328,000	150,000	23,000	173,000
1995	16,900	241,000	127,000	368,000	181,000	31,000	212,000
2000	17,200	257,000	146,000	403,000	212,000	41,000	253,000
2005	19,000	292,000	167,000	459,000	242,000	53,000	295,000
2010	19,800	300,000	183,000	483,000	266,000	65,000	331,000
2015	19,700	302,000	202,000	504,000	285,000	74,000	359,000
2020	19,900	318,000	229,000	547,000	299,000	81,000	380,000
2025	20,000	324,000	263,000	587,000	320,000	87,000	407,000
2030	21,800	358,000	299,000	657,000	340,000	93,000	433,000
2035	23,300	387,000	337,000	724,000	357,000	98,000	455,000
2040	24,800	417,000	378,000	795,000	378,000	105,000	483,000
2045	26,300	448,000	421,000	869,000	399,000	110,000	509,000
2050	27,900	480,000	467,000	947,000	422,000	117,000	539,000
2055	29,600	515,000	517,000	1,032,000	450,000	124,000	574,000
2060	31,400	552,000	573,000	1,125,000	484,000	133,000	617,000

Source: C. Eugene Steuerle and Caleb Quakenbush, Urban Institute. Based on earlier work with Stephanie Rennane and Adam Carasso.

Notes: 2018 dollars, adjusted to present value at age 65 using a 2 percent real interest rate. Adjusts for mortality after age 65. Assumes benefits scheduled in law will be paid. Worker works every year starting at age 22 and retires at age 65. An average earner has earnings equal to the Social Security Administration's national average wage index each year.

TABLE 3

Expected Present Value of Lifetime Social Security and Medicare Benefits and Taxes

Single man with high earnings ($83,000 in 2018 dollars)

Year cohort turns age 65	First year Social Security benefit	Lifetime Benefits			Lifetime Taxes		
		Social Security	Medicare (net of premiums)	Total	Social Security	Medicare	Total
1960	11,300	138,000	16,000	154,000	26,000	0	26,000
1965	11,700	154,000	29,000	183,000	40,000	0	40,000
1970	14,200	187,000	41,000	228,000	62,000	2,000	64,000
1975	17,600	221,000	54,000	275,000	91,000	7,000	98,000
1980	21,300	286,000	70,000	356,000	130,000	14,000	144,000
1985	20,100	266,000	87,000	353,000	166,000	23,000	189,000
1990	20,100	282,000	106,000	388,000	210,000	35,000	245,000
1995	21,700	309,000	127,000	436,000	260,000	48,000	308,000
2000	22,300	333,000	146,000	479,000	311,000	64,000	375,000
2005	25,000	385,000	167,000	552,000	363,000	82,000	445,000
2010	26,200	397,000	183,000	580,000	412,000	102,000	514,000
2015	26,100	399,000	202,000	601,000	451,000	117,000	568,000
2020	26,400	421,000	229,000	650,000	479,000	129,000	608,000
2025	26,400	428,000	263,000	691,000	512,000	140,000	652,000
2030	28,800	473,000	299,000	772,000	544,000	149,000	693,000
2035	30,800	512,000	337,000	849,000	571,000	157,000	728,000
2040	32,800	551,000	378,000	929,000	605,000	167,000	772,000
2045	34,800	592,000	421,000	1,013,000	638,000	177,000	815,000
2050	36,900	635,000	467,000	1,102,000	675,000	189,000	864,000
2055	39,100	681,000	517,000	1,198,000	720,000	203,000	923,000
2060	41,500	730,000	573,000	1,303,000	774,000	220,000	994,000

Source: C. Eugene Steuerle and Caleb Quakenbush, Urban Institute. Based on earlier work with Stephanie Rennane and Adam Carasso.

Notes: 2018 dollars, adjusted to present value at age 65 using a 2 percent real interest rate. Adjusts for mortality after age 65. Assumes benefits scheduled in law will be paid. Worker works every year starting at age 22 and retires at age 65. An average earner has earnings equal to the Social Security Administration's national average wage index each year. A high earner earns 160 percent of the average wage.

TABLE 4

Expected Present Value of Lifetime Social Security and Medicare Benefits and Taxes

Single man with maximum taxable earnings ($127,200 in 2018 dollars)

Year cohort turns age 65	First year Social Security benefit	Lifetime Benefits			Lifetime Taxes		
		Social Security	Medicare (net of premiums)	Total	Social Security	Medicare	Total
1960	11,300	138,000	16,000	154,000	29,000	0	29,000
1965	11,700	154,000	29,000	183,000	44,000	0	44,000
1970	14,200	187,000	41,000	228,000	66,000	2,000	68,000
1975	17,700	221,000	54,000	275,000	96,000	7,000	103,000
1980	21,700	290,000	70,000	360,000	137,000	14,000	151,000
1985	21,000	278,000	87,000	365,000	181,000	27,000	208,000
1990	21,500	301,000	106,000	407,000	243,000	44,000	287,000
1995	23,700	337,000	127,000	464,000	317,000	63,000	380,000
2000	25,000	373,000	146,000	519,000	393,000	86,000	479,000
2005	28,700	442,000	167,000	609,000	477,000	112,000	589,000
2010	30,900	468,000	183,000	651,000	562,000	142,000	704,000
2015	31,500	483,000	202,000	685,000	640,000	168,000	808,000
2020	32,100	512,000	229,000	741,000	710,000	192,000	902,000
2025	32,100	521,000	263,000	784,000	776,000	212,000	988,000
2030	35,000	575,000	299,000	874,000	826,000	227,000	1,053,000
2035	37,500	624,000	337,000	961,000	870,000	241,000	1,111,000
2040	39,900	672,000	378,000	1,050,000	921,000	258,000	1,179,000
2045	42,500	723,000	421,000	1,144,000	974,000	276,000	1,250,000
2050	45,000	774,000	467,000	1,241,000	1,027,000	296,000	1,323,000
2055	47,600	829,000	517,000	1,346,000	1,093,000	320,000	1,413,000
2060	50,500	887,000	573,000	1,460,000	1,172,000	349,000	1,521,000

Source: C. Eugene Steuerle and Caleb Quakenbush, Urban Institute. Based on earlier work with Stephanie Rennane and Adam Carasso.

Notes: 2018 dollars, adjusted to present value at age 65 using a 2 percent real interest rate. Adjusts for mortality after age 65. Assumes benefits scheduled in law will be paid. Worker works every year starting at age 22 and retires at age 65. A maximum-taxable earner earns the Social Security maximum taxable wage every year.

TABLE 5

Expected Present Value of Lifetime Social Security and Medicare Benefits and Taxes

Single woman with low earnings ($23,400 in 2018 dollars)

Year cohort turns age 65	First year Social Security benefit	Lifetime Benefits			Lifetime Taxes		
		Social Security	Medicare (net of premiums)	Total	Social Security	Medicare	Total
1960	6,800	107,000	26,000	133,000	9,000	0	9,000
1965	7,100	121,000	44,000	165,000	14,000	0	14,000
1970	8,200	138,000	60,000	198,000	22,000	1,000	23,000
1975	9,700	152,000	77,000	229,000	32,000	2,000	34,000
1980	10,300	169,000	95,000	264,000	43,000	4,000	47,000
1985	9,700	154,000	114,000	268,000	54,000	7,000	61,000
1990	9,600	158,000	134,000	292,000	67,000	10,000	77,000
1995	10,300	168,000	154,000	322,000	82,000	14,000	96,000
2000	10,400	175,000	174,000	349,000	95,000	19,000	114,000
2005	11,500	198,000	196,000	394,000	109,000	24,000	133,000
2010	12,000	202,000	214,000	416,000	120,000	29,000	149,000
2015	12,000	202,000	237,000	439,000	128,000	33,000	161,000
2020	12,100	213,000	268,000	481,000	135,000	36,000	171,000
2025	12,100	216,000	306,000	522,000	144,000	39,000	183,000
2030	13,200	238,000	346,000	584,000	153,000	42,000	195,000
2035	14,100	256,000	388,000	644,000	161,000	44,000	205,000
2040	15,000	275,000	434,000	709,000	170,000	47,000	217,000
2045	15,900	295,000	481,000	776,000	179,000	50,000	229,000
2050	16,900	316,000	533,000	849,000	190,000	53,000	243,000
2055	17,900	338,000	588,000	926,000	203,000	56,000	259,000
2060	19,000	361,000	650,000	1,011,000	218,000	60,000	278,000

Source: C. Eugene Steuerle and Caleb Quakenbush, Urban Institute. Based on earlier work with Stephanie Rennane and Adam Carasso.

Notes: 2018 dollars, adjusted to present value at age 65 using a 2 percent real interest rate. Adjusts for mortality after age 65. Assumes benefits scheduled in law will be paid. Worker works every year starting at age 22 and retires at age 65. An average earner has earnings equal to the Social Security Administration's national average wage index each year. A low earner earns 45 percent of the average wage.

TABLE 6

Expected Present Value of Lifetime Social Security and Medicare Benefits and Taxes

Single woman with average earnings ($51,900 in 2018 dollars)

Year cohort turns age 65	First year Social Security benefit	Lifetime Benefits			Lifetime Taxes		
		Social Security	Medicare (net of premiums)	Total	Social Security	Medicare	Total
1960	10,300	162,000	26,000	188,000	19,000	0	19,000
1965	11,000	188,000	44,000	232,000	32,000	0	32,000
1970	13,000	219,000	60,000	279,000	49,000	2,000	51,000
1975	15,600	246,000	77,000	323,000	71,000	5,000	76,000
1980	17,100	281,000	95,000	376,000	96,000	9,000	105,000
1985	16,000	254,000	114,000	368,000	121,000	15,000	136,000
1990	15,900	261,000	134,000	395,000	150,000	23,000	173,000
1995	16,900	277,000	154,000	431,000	181,000	31,000	212,000
2000	17,200	289,000	174,000	463,000	212,000	41,000	253,000
2005	19,000	326,000	196,000	522,000	242,000	53,000	295,000
2010	19,800	333,000	214,000	547,000	266,000	65,000	331,000
2015	19,700	334,000	237,000	571,000	285,000	74,000	359,000
2020	19,900	351,000	268,000	619,000	299,000	81,000	380,000
2025	20,000	356,000	306,000	662,000	320,000	87,000	407,000
2030	21,800	392,000	346,000	738,000	340,000	93,000	433,000
2035	23,300	423,000	388,000	811,000	357,000	98,000	455,000
2040	24,800	455,000	434,000	889,000	378,000	105,000	483,000
2045	26,300	487,000	481,000	968,000	399,000	110,000	509,000
2050	27,900	521,000	533,000	1,054,000	422,000	117,000	539,000
2055	29,600	557,000	588,000	1,145,000	450,000	124,000	574,000
2060	31,400	596,000	650,000	1,246,000	484,000	133,000	617,000

Source: C. Eugene Steuerle and Caleb Quakenbush, Urban Institute. Based on earlier work with Stephanie Rennane and Adam Carasso.

Notes: 2018 dollars, adjusted to present value at age 65 using a 2 percent real interest rate. Adjusts for mortality after age 65. Assumes benefits scheduled in law will be paid. Worker works every year starting at age 22 and retires at age 65. An average earner has earnings equal to the Social Security Administration's national average wage index each year.

TABLE 7

Expected Present Value of Lifetime Social Security and Medicare Benefits and Taxes

Single woman with high earnings ($83,000 in 2018 dollars)

Year cohort turns age 65	First year Social Security benefit	Lifetime Benefits			Lifetime Taxes		
		Social Security	Medicare (net of premiums)	Total	Social Security	Medicare	Total
1960	11,500	182,000	26,000	208,000	26,000	0	26,000
1965	12,100	206,000	44,000	250,000	40,000	0	40,000
1970	14,800	249,000	60,000	309,000	62,000	2,000	64,000
1975	18,600	293,000	77,000	370,000	91,000	7,000	98,000
1980	21,300	352,000	95,000	447,000	130,000	14,000	144,000
1985	20,100	319,000	114,000	433,000	166,000	23,000	189,000
1990	20,100	330,000	134,000	464,000	210,000	35,000	245,000
1995	21,700	354,000	154,000	508,000	260,000	48,000	308,000
2000	22,300	375,000	174,000	549,000	311,000	64,000	375,000
2005	25,000	429,000	196,000	625,000	363,000	82,000	445,000
2010	26,200	440,000	214,000	654,000	412,000	102,000	514,000
2015	26,100	442,000	237,000	679,000	451,000	117,000	568,000
2020	26,400	465,000	268,000	733,000	479,000	129,000	608,000
2025	26,400	471,000	306,000	777,000	512,000	140,000	652,000
2030	28,800	518,000	346,000	864,000	544,000	149,000	693,000
2035	30,800	559,000	388,000	947,000	571,000	157,000	728,000
2040	32,800	601,000	434,000	1,035,000	605,000	167,000	772,000
2045	34,800	644,000	481,000	1,125,000	638,000	177,000	815,000
2050	36,900	689,000	533,000	1,222,000	675,000	189,000	864,000
2055	39,100	737,000	588,000	1,325,000	720,000	203,000	923,000
2060	41,500	788,000	650,000	1,438,000	774,000	220,000	994,000

Source: C. Eugene Steuerle and Caleb Quakenbush, Urban Institute. Based on earlier work with Stephanie Rennane and Adam Carasso.

Notes: 2018 dollars, adjusted to present value at age 65 using a 2 percent real interest rate. Adjusts for mortality after age 65. Assumes benefits scheduled in law will be paid. Worker works every year starting at age 22 and retires at age 65. An average earner has earnings equal to the Social Security Administration's national average wage index each year. A high earner earns 160 percent of the average wage.

TABLE 8

Expected Present Value of Lifetime Social Security and Medicare Benefits and Taxes

Single woman with maximum taxable earnings ($127,200 in 2018 dollars)

Year cohort turns age 65	First year Social Security benefit	Lifetime Benefits			Lifetime Taxes		
		Social Security	Medicare (net of premiums)	Total	Social Security	Medicare	Total
1960	11,500	182,000	26,000	208,000	29,000	0	29,000
1965	12,100	206,000	44,000	250,000	44,000	0	44,000
1970	14,800	249,000	60,000	309,000	66,000	2,000	68,000
1975	18,600	294,000	77,000	371,000	96,000	7,000	103,000
1980	21,700	357,000	95,000	452,000	137,000	14,000	151,000
1985	21,000	333,000	114,000	447,000	181,000	27,000	208,000
1990	21,500	353,000	134,000	487,000	243,000	44,000	287,000
1995	23,700	387,000	154,000	541,000	317,000	63,000	380,000
2000	25,000	420,000	174,000	594,000	393,000	86,000	479,000
2005	28,700	494,000	196,000	690,000	477,000	112,000	589,000
2010	30,900	519,000	214,000	733,000	562,000	142,000	704,000
2015	31,500	534,000	237,000	771,000	640,000	168,000	808,000
2020	32,100	565,000	268,000	833,000	710,000	192,000	902,000
2025	32,100	572,000	306,000	878,000	776,000	212,000	988,000
2030	35,000	631,000	346,000	977,000	826,000	227,000	1,053,000
2035	37,500	682,000	388,000	1,070,000	870,000	241,000	1,111,000
2040	39,900	732,000	434,000	1,166,000	921,000	258,000	1,179,000
2045	42,500	786,000	481,000	1,267,000	974,000	276,000	1,250,000
2050	45,000	839,000	533,000	1,372,000	1,027,000	296,000	1,323,000
2055	47,600	897,000	588,000	1,485,000	1,093,000	320,000	1,413,000
2060	50,500	958,000	650,000	1,608,000	1,172,000	349,000	1,521,000

Source: C. Eugene Steuerle and Caleb Quakenbush, Urban Institute. Based on earlier work with Stephanie Rennane and Adam Carasso.

Notes: 2018 dollars, adjusted to present value at age 65 using a 2 percent real interest rate. Adjusts for mortality after age 65. Assumes benefits scheduled in law will be paid. Worker works every year starting at age 22 and retires at age 65. A maximum-taxable earner earns the Social Security maximum taxable wage every year.

TABLE 9

Expected Present Value of Lifetime Social Security and Medicare Benefits and Taxes

Married one-earner couple with low earnings ($23,400 in 2018 dollars)

Year cohort turns age 65	First year Social Security benefit	Lifetime Benefits			Lifetime Taxes		
		Social Security	Medicare (net of premiums)	Total	Social Security	Medicare	Total
1960	10,000	154,000	42,000	196,000	9,000	0	9,000
1965	10,500	173,000	73,000	246,000	14,000	0	14,000
1970	12,000	198,000	101,000	299,000	22,000	1,000	23,000
1975	14,100	218,000	132,000	350,000	32,000	2,000	34,000
1980	15,400	251,000	165,000	416,000	43,000	4,000	47,000
1985	14,600	231,000	201,000	432,000	54,000	7,000	61,000
1990	14,400	238,000	240,000	478,000	67,000	10,000	77,000
1995	15,400	255,000	281,000	536,000	82,000	14,000	96,000
2000	15,600	268,000	320,000	588,000	95,000	19,000	114,000
2005	17,300	303,000	364,000	667,000	109,000	24,000	133,000
2010	18,000	309,000	397,000	706,000	120,000	29,000	149,000
2015	17,900	310,000	439,000	749,000	128,000	33,000	161,000
2020	18,100	326,000	498,000	824,000	135,000	36,000	171,000
2025	18,200	331,000	568,000	899,000	144,000	39,000	183,000
2030	19,800	364,000	645,000	1,009,000	153,000	42,000	195,000
2035	21,200	393,000	725,000	1,118,000	161,000	44,000	205,000
2040	22,500	423,000	812,000	1,235,000	170,000	47,000	217,000
2045	23,900	453,000	902,000	1,355,000	179,000	50,000	229,000
2050	25,400	485,000	1,000,000	1,485,000	190,000	53,000	243,000
2055	26,900	519,000	1,106,000	1,625,000	203,000	56,000	259,000
2060	28,600	555,000	1,223,000	1,778,000	218,000	60,000	278,000

Source: C. Eugene Steuerle and Caleb Quakenbush, Urban Institute. Based on earlier work with Stephanie Rennane and Adam Carasso.

Notes: 2018 dollars, adjusted to present value at age 65 using a 2 percent real interest rate. Adjusts for mortality after age 65. Assumes benefits scheduled in law will be paid. Worker works every year starting at age 22 and retires at age 65. An average earner has earnings equal to the Social Security Administration's national average wage index each year. A low earner earns 45 percent of the average wage.

TABLE 10

Expected Present Value of Lifetime Social Security and Medicare Benefits and Taxes

Married one-earner couple with average earnings ($51,900 in 2018 dollars)

Year cohort turns age 65	First year Social Security benefit	Lifetime Benefits			Lifetime Taxes		
		Social Security	Medicare (net of premiums)	Total	Social Security	Medicare	Total
1960	15,200	232,000	42,000	274,000	19,000	0	19,000
1965	16,000	266,000	73,000	339,000	32,000	0	32,000
1970	18,900	310,000	101,000	411,000	49,000	2,000	51,000
1975	22,600	349,000	132,000	481,000	71,000	5,000	76,000
1980	25,600	417,000	165,000	582,000	96,000	9,000	105,000
1985	24,100	381,000	201,000	582,000	121,000	15,000	136,000
1990	23,800	393,000	240,000	633,000	150,000	23,000	173,000
1995	25,400	421,000	281,000	702,000	181,000	31,000	212,000
2000	25,800	442,000	320,000	762,000	212,000	41,000	253,000
2005	28,500	500,000	364,000	864,000	242,000	53,000	295,000
2010	29,700	510,000	397,000	907,000	266,000	65,000	331,000
2015	29,600	512,000	439,000	951,000	285,000	74,000	359,000
2020	29,900	538,000	498,000	1,036,000	299,000	81,000	380,000
2025	30,000	546,000	568,000	1,114,000	320,000	87,000	407,000
2030	32,700	602,000	645,000	1,247,000	340,000	93,000	433,000
2035	34,900	649,000	725,000	1,374,000	357,000	98,000	455,000
2040	37,200	698,000	812,000	1,510,000	378,000	105,000	483,000
2045	39,500	748,000	902,000	1,650,000	399,000	110,000	509,000
2050	41,800	800,000	1,000,000	1,800,000	422,000	117,000	539,000
2055	44,400	856,000	1,106,000	1,962,000	450,000	124,000	574,000
2060	47,100	917,000	1,223,000	2,140,000	484,000	133,000	617,000

Source: C. Eugene Steuerle and Caleb Quakenbush, Urban Institute. Based on earlier work with Stephanie Rennane and Adam Carasso.

Notes: 2018 dollars, adjusted to present value at age 65 using a 2 percent real interest rate. Adjusts for mortality after age 65. Assumes benefits scheduled in law will be paid. Worker works every year starting at age 22 and retires at age 65. An average earner has earnings equal to the Social Security Administration's national average wage index each year.

TABLE 11

Expected Present Value of Lifetime Social Security and Medicare Benefits and Taxes

Married one-earner couple with high earnings ($83,000 in 2018 dollars)

Year cohort turns age 65	First year Social Security benefit	Lifetime Benefits			Lifetime Taxes		
		Social Security	Medicare (net of premiums)	Total	Social Security	Medicare	Total
1960	16,900	258,000	42,000	300,000	26,000	0	26,000
1965	17,600	292,000	73,000	365,000	40,000	0	40,000
1970	21,300	350,000	101,000	451,000	62,000	2,000	64,000
1975	26,500	409,000	132,000	541,000	91,000	7,000	98,000
1980	32,000	521,000	165,000	686,000	130,000	14,000	144,000
1985	30,200	478,000	201,000	679,000	166,000	23,000	189,000
1990	30,200	499,000	240,000	739,000	210,000	35,000	245,000
1995	32,500	539,000	281,000	820,000	260,000	48,000	308,000
2000	33,500	573,000	320,000	893,000	311,000	64,000	375,000
2005	37,500	658,000	364,000	1,022,000	363,000	82,000	445,000
2010	39,300	675,000	397,000	1,072,000	412,000	102,000	514,000
2015	39,200	677,000	439,000	1,116,000	451,000	117,000	568,000
2020	39,600	712,000	498,000	1,210,000	479,000	129,000	608,000
2025	39,700	722,000	568,000	1,290,000	512,000	140,000	652,000
2030	43,200	795,000	645,000	1,440,000	544,000	149,000	693,000
2035	46,200	858,000	725,000	1,583,000	571,000	157,000	728,000
2040	49,100	922,000	812,000	1,734,000	605,000	167,000	772,000
2045	52,200	989,000	902,000	1,891,000	638,000	177,000	815,000
2050	55,300	1,058,000	1,000,000	2,058,000	675,000	187,000	862,000
2055	58,700	1,132,000	1,106,000	2,238,000	720,000	200,000	920,000
2060	62,300	1,212,000	1,223,000	2,435,000	774,000	216,000	990,000

Source: C. Eugene Steuerle and Caleb Quakenbush, Urban Institute. Based on earlier work with Stephanie Rennane and Adam Carasso.

Notes: 2018 dollars, adjusted to present value at age 65 using a 2 percent real interest rate. Adjusts for mortality after age 65. Assumes benefits scheduled in law will be paid. Worker works every year starting at age 22 and retires at age 65. An average earner has earnings equal to the Social Security Administration's national average wage index each year. A high earner earns 160 percent of the average wage.

TABLE 12

Expected Present Value of Lifetime Social Security and Medicare Benefits and Taxes

Married one-earner couple with maximum taxable earnings ($127,200 in 2018 dollars)

Year cohort turns age 65	First year Social Security benefit	Lifetime Benefits			Lifetime Taxes		
		Social Security	Medicare (net of premiums)	Total	Social Security	Medicare	Total
1960	16,900	258,000	42,000	300,000	29,000	0	29,000
1965	17,600	292,000	73,000	365,000	44,000	0	44,000
1970	21,300	350,000	101,000	451,000	66,000	2,000	68,000
1975	26,500	410,000	132,000	542,000	96,000	7,000	103,000
1980	32,500	530,000	165,000	695,000	137,000	14,000	151,000
1985	31,500	499,000	201,000	700,000	181,000	27,000	208,000
1990	32,200	533,000	240,000	773,000	243,000	44,000	287,000
1995	35,500	589,000	281,000	870,000	317,000	63,000	380,000
2000	37,500	642,000	320,000	962,000	393,000	86,000	479,000
2005	43,100	756,000	364,000	1,120,000	477,000	112,000	589,000
2010	46,400	796,000	397,000	1,193,000	562,000	142,000	704,000
2015	47,300	818,000	439,000	1,257,000	640,000	168,000	808,000
2020	48,100	866,000	498,000	1,364,000	710,000	192,000	902,000
2025	48,200	878,000	568,000	1,446,000	776,000	212,000	988,000
2030	52,600	967,000	645,000	1,612,000	826,000	227,000	1,053,000
2035	56,300	1,046,000	725,000	1,771,000	870,000	240,000	1,110,000
2040	59,900	1,124,000	812,000	1,936,000	921,000	255,000	1,176,000
2045	63,700	1,207,000	902,000	2,109,000	974,000	272,000	1,246,000
2050	67,400	1,289,000	1,000,000	2,289,000	1,027,000	291,000	1,318,000
2055	71,400	1,378,000	1,106,000	2,484,000	1,093,000	313,000	1,406,000
2060	75,800	1,473,000	1,223,000	2,696,000	1,172,000	340,000	1,512,000

Source: C. Eugene Steuerle and Caleb Quakenbush, Urban Institute. Based on earlier work with Stephanie Rennane and Adam Carasso.

Notes: 2018 dollars, adjusted to present value at age 65 using a 2 percent real interest rate. Adjusts for mortality after age 65. Assumes benefits scheduled in law will be paid. Worker works every year starting at age 22 and retires at age 65. A maximum-taxable earner earns the Social Security maximum taxable wage every year.

TABLE 13

Expected Present Value of Lifetime Social Security and Medicare Benefits and Taxes

Married couple with two low earners ($46,800 in 2018 dollars)

Year cohort turns age 65	First year Social Security benefit	Lifetime Benefits			Lifetime Taxes		
		Social Security	Medicare (net of premiums)	Total	Social Security	Medicare	Total
1960	13,500	186,000	42,000	228,000	17,000	0	17,000
1965	14,100	212,000	73,000	285,000	29,000	0	29,000
1970	16,200	244,000	101,000	345,000	44,000	1,000	45,000
1975	19,100	270,000	132,000	402,000	64,000	4,000	68,000
1980	20,500	307,000	165,000	472,000	87,000	8,000	95,000
1985	19,400	282,000	201,000	483,000	108,000	14,000	122,000
1990	19,200	292,000	240,000	532,000	135,000	21,000	156,000
1995	20,500	314,000	281,000	595,000	163,000	28,000	191,000
2000	20,800	330,000	320,000	650,000	191,000	37,000	228,000
2005	23,000	375,000	364,000	739,000	218,000	47,000	265,000
2010	24,000	383,000	397,000	780,000	240,000	58,000	298,000
2015	23,900	385,000	439,000	824,000	256,000	66,000	322,000
2020	24,200	406,000	498,000	904,000	270,000	72,000	342,000
2025	24,200	412,000	568,000	980,000	288,000	79,000	367,000
2030	26,400	454,000	645,000	1,099,000	306,000	84,000	390,000
2035	28,200	491,000	725,000	1,216,000	321,000	89,000	410,000
2040	30,000	528,000	812,000	1,340,000	341,000	94,000	435,000
2045	31,900	567,000	902,000	1,469,000	359,000	99,000	458,000
2050	33,800	607,000	1,000,000	1,607,000	379,000	105,000	484,000
2055	35,900	650,000	1,106,000	1,756,000	405,000	112,000	517,000
2060	38,100	696,000	1,223,000	1,919,000	435,000	119,000	554,000

Source: C. Eugene Steuerle and Caleb Quakenbush, Urban Institute. Based on earlier work with Stephanie Rennane and Adam Carasso.

Notes: 2018 dollars, adjusted to present value at age 65 using a 2 percent real interest rate. Adjusts for mortality after age 65. Assumes benefits scheduled in law will be paid. Workers work every year starting at age 22 and retire at age 65. An average earner has earnings equal to the Social Security Administration's national average wage index each year. A low earner earns 45 percent of the average wage.

TABLE 14

Expected Present Value of Lifetime Social Security and Medicare Benefits and Taxes

Married couple with one average earner and one low earner ($75,300 in 2018 dollars)

Year cohort turns age 65	First year Social Security benefit	Lifetime Benefits			Lifetime Taxes		
		Social Security	Medicare (net of premiums)	Total	Social Security	Medicare	Total
1960	16,900	247,000	42,000	289,000	28,000	0	28,000
1965	17,800	284,000	73,000	357,000	46,000	0	46,000
1970	20,800	330,000	101,000	431,000	71,000	2,000	73,000
1975	24,700	371,000	132,000	503,000	103,000	7,000	110,000
1980	27,300	436,000	165,000	601,000	140,000	14,000	154,000
1985	25,800	399,000	201,000	600,000	175,000	22,000	197,000
1990	25,500	412,000	240,000	652,000	217,000	33,000	250,000
1995	27,200	442,000	281,000	723,000	263,000	45,000	308,000
2000	27,600	464,000	320,000	784,000	307,000	60,000	367,000
2005	30,500	525,000	364,000	889,000	351,000	76,000	427,000
2010	31,800	536,000	397,000	933,000	386,000	94,000	480,000
2015	31,700	538,000	439,000	977,000	413,000	107,000	520,000
2020	32,000	566,000	498,000	1,064,000	434,000	117,000	551,000
2025	32,100	575,000	568,000	1,143,000	464,000	127,000	591,000
2030	35,000	633,000	645,000	1,278,000	493,000	135,000	628,000
2035	37,400	683,000	725,000	1,408,000	518,000	143,000	661,000
2040	39,800	735,000	812,000	1,547,000	549,000	152,000	701,000
2045	42,300	788,000	902,000	1,690,000	578,000	160,000	738,000
2050	44,800	843,000	1,000,000	1,843,000	611,000	169,000	780,000
2055	47,600	902,000	1,106,000	2,008,000	653,000	181,000	834,000
2060	50,500	966,000	1,223,000	2,189,000	701,000	195,000	896,000

Source: C. Eugene Steuerle and Caleb Quakenbush, Urban Institute. Based on earlier work with Stephanie Rennane and Adam Carasso.

Notes: 2018 dollars, adjusted to present value at age 65 using a 2 percent real interest rate. Adjusts for mortality after age 65. Assumes benefits scheduled in law will be paid. Workers work every year starting at age 22 and retire at age 65. An average earner has earnings equal to the Social Security Administration's national average wage index each year. A low earner earns 45 percent of the average wage.

TABLE 15

Expected Present Value of Lifetime Social Security and Medicare Benefits and Taxes

Married couple with two average earners ($103,800 in 2018 dollars)

Year cohort turns age 65	First year Social Security benefit	Lifetime Benefits			Lifetime Taxes		
		Social Security	Medicare (net of premiums)	Total	Social Security	Medicare	Total
1960	20,400	282,000	42,000	324,000	39,000	0	39,000
1965	21,700	327,000	73,000	400,000	64,000	0	64,000
1970	25,600	385,000	101,000	486,000	97,000	3,000	100,000
1975	30,600	436,000	132,000	568,000	142,000	10,000	152,000
1980	34,100	510,000	165,000	675,000	193,000	19,000	212,000
1985	32,100	467,000	201,000	668,000	241,000	30,000	271,000
1990	31,700	483,000	240,000	723,000	299,000	46,000	345,000
1995	33,900	518,000	281,000	799,000	363,000	63,000	426,000
2000	34,400	546,000	320,000	866,000	424,000	82,000	506,000
2005	38,000	619,000	364,000	983,000	484,000	105,000	589,000
2010	39,700	633,000	397,000	1,030,000	532,000	130,000	662,000
2015	39,500	636,000	439,000	1,075,000	569,000	147,000	716,000
2020	39,900	669,000	498,000	1,167,000	599,000	161,000	760,000
2025	40,000	680,000	568,000	1,248,000	640,000	175,000	815,000
2030	43,600	750,000	645,000	1,395,000	680,000	186,000	866,000
2035	46,600	810,000	725,000	1,535,000	714,000	197,000	911,000
2040	49,600	872,000	812,000	1,684,000	757,000	209,000	966,000
2045	52,600	935,000	902,000	1,837,000	798,000	221,000	1,019,000
2050	55,800	1,001,000	1,000,000	2,001,000	843,000	236,000	1,079,000
2055	59,200	1,073,000	1,106,000	2,179,000	900,000	254,000	1,154,000
2060	62,900	1,149,000	1,223,000	2,372,000	968,000	276,000	1,244,000

Source: C. Eugene Steuerle and Caleb Quakenbush, Urban Institute. Based on earlier work with Stephanie Rennane and Adam Carasso.

Notes: 2018 dollars, adjusted to present value at age 65 using a 2 percent real interest rate. Adjusts for mortality after age 65. Assumes benefits scheduled in law will be paid.

Workers work every year starting at age 22 and retire at age 65. An average earner has earnings equal to the Social Security Administration's national average wage index each year.

TABLE 16

Expected Present Value of Lifetime Social Security and Medicare Benefits and Taxes

Married couple with one high earner and one average earner ($134,900 in 2018 dollars)

Year cohort turns age 65	First year Social Security benefit	Lifetime Benefits			Lifetime Taxes		
		Social Security	Medicare (net of premiums)	Total	Social Security	Medicare	Total
1960	21,500	301,000	42,000	343,000	45,000	0	45,000
1965	22,800	344,000	73,000	417,000	72,000	0	72,000
1970	27,200	413,000	101,000	514,000	110,000	4,000	114,000
1975	33,200	478,000	132,000	610,000	163,000	12,000	175,000
1980	38,400	591,000	165,000	756,000	226,000	23,000	249,000
1985	36,200	542,000	201,000	743,000	286,000	38,000	324,000
1990	36,000	564,000	240,000	804,000	359,000	58,000	417,000
1995	38,600	609,000	281,000	890,000	441,000	80,000	521,000
2000	39,500	646,000	320,000	966,000	522,000	105,000	627,000
2005	44,000	739,000	364,000	1,103,000	605,000	135,000	740,000
2010	46,000	758,000	397,000	1,155,000	679,000	166,000	845,000
2015	45,800	761,000	439,000	1,200,000	736,000	190,000	926,000
2020	46,300	801,000	498,000	1,299,000	779,000	209,000	988,000
2025	46,500	813,000	568,000	1,381,000	832,000	227,000	1,059,000
2030	50,600	896,000	645,000	1,541,000	884,000	242,000	1,126,000
2035	54,100	967,000	725,000	1,692,000	928,000	256,000	1,184,000
2040	57,500	1,040,000	812,000	1,852,000	984,000	273,000	1,257,000
2045	61,100	1,116,000	902,000	2,018,000	1,037,000	291,000	1,328,000
2050	64,800	1,194,000	1,000,000	2,194,000	1,096,000	313,000	1,409,000
2055	68,800	1,279,000	1,106,000	2,385,000	1,171,000	341,000	1,512,000
2060	73,000	1,369,000	1,223,000	2,592,000	1,258,000	375,000	1,633,000

Source: C. Eugene Steuerle and Caleb Quakenbush, Urban Institute. Based on earlier work with Stephanie Rennane and Adam Carasso.

Notes: 2018 dollars, adjusted to present value at age 65 using a 2 percent real interest rate. Adjusts for mortality after age 65. Assumes benefits scheduled in law will be paid. Workers work every year starting at age 22 and retire at age 65. An average earner has earnings equal to the Social Security Administration's national average wage index each year. A high earner earns 160 percent of the average wage.

Appendix

Basic Data and Assumptions

DATA

Program rules, economic projections, and mortality assumptions are taken from the annual reports of the Social Security and Medicare trustees and from supplemental data provided in the Social Security Bulletin and the CMS actuaries. Except for Medicare benefits described below, we use the intermediate scenario provided in the trustees' reports.

WORK AND EARNINGS HISTORIES

People start working at age 22 and work continuously along a wage path until they retire on their 65th birthdays. The wage path is set with reference to the Social Security Administration's national average wage index: an average worker earns the national wage index in every year worked, low-earning workers earn 45 percent of the index, and high-earning workers earn 160 percent of the index each year. A maximum-taxable worker earns the maximum taxable wage for Social Security taxes every year. The national average wage index is estimated as $51,894 in 2018.

We use the Social Security definition of average wage because of its common use as a standard; however, the average wage is that for people who have earnings that year. The average person, including those with zero earnings, would have lower lifetime earnings than the person who earned the average wage every year. Hence, workers earning the index every year would sit at about the 56th percentile of workers in their cohort (Board of Trustees 2018).

MARRIAGE

Spouses in the calculations for couples are the same age and are assumed to marry at age 24. Couples are married continuously over their careers and retirement. Therefore, no divorce benefits are included in the calculation of lifetime benefits. Because spouses often differ by age, our projections of years of benefit for a same-aged couple will generally be lower than the years of benefits for couples of different ages. Because of this factor, we project modestly lower-than-average survivor benefits.

MORTALITY

All individuals are assumed to live to age 65. After age 65, sex-adjusted probabilities of mortality are applied to retirees receiving benefits to arrive at expected values. These values come from life tables provided by the Social Security Administration. They do not include adjustments for income or other factors (e.g., a female worker with high lifetime earnings is assumed to have the same life expectancy as a female worker with low lifetime earnings).

Because women on average have longer life expectancies than men, our expected lifetime benefits for women are higher than for men with identical earnings histories.

DISCOUNT RATES

The model applies a 2 percent real (inflation-adjusted) discount rate for both benefits and taxes. Assuming a higher discount rate would lead to higher estimates of lifetime taxes and lower lifetime benefits; a lower discount rate would lead to lower lifetime taxes and higher lifetime benefits. The Social Security Administration's historical and projected series for the consumer price index for urban wage earners and clerical workers is used to adjust for inflation.

Calculating Lifetime Taxes

INCLUDED TAXES

Workers pay payroll taxes (sometimes referred to as FICA taxes) every year they earn wages. Calculated lifetime taxes include contributions for the retirement portion of Social Security (OASI) and for the Hospital Insurance (HI, or Part A) portion of Medicare. Medicare taxes also include the 0.9 percent "surtax" paid by individual workers earning $200,000 or more and married couples earning more than $250,000 combined, which took effect in 2013. At the income levels we present, no case in past and current years is affected, and few are affected even decades into the future.

We assume that workers pay both the employer and employee shares of the payroll tax. By statute, the payroll tax, except for the HI surtax, is split evenly between workers and employers, with each paying 6.75 percent for combined OASI and HI taxes. However, a standard economic assumption is that in the long run, employers can pass this tax onto workers by slowing wage growth or offering fewer fringe benefits.

We do not adjust for the temporary provision in the Tax Cuts and Jobs Act of 2017 for a 20 percent deduction for income arising from "pass-through" arrangements like partnerships and self-employment, because it was designed as a deduction only against income, not Social Security taxes.

EXCLUDED TAXES

Because our model includes no calculation of Disability Insurance benefits, Disability Insurance payroll taxes are excluded. We also exclude the partial income taxation of Social Security benefits, because this would require additional assumptions about people's non–Social Security income after age 65. Also, this income mingles with other income subject to tax. Though the Treasury formally makes transfers to the Social Security trust fund on the liberal assumption that this income gets stacked last at the marginal (not average) tax rate, such an assumption for all government programs would lead to a substantial overstatement of the total tax a person pays for all government services and benefits received. For related reasons, such as how to determine who eventually pays for Social Security and non–Social Security debt, we exclude transfers from the general fund (financed through individual and corporate income and excise taxes or through higher debt levels) used to finance non-HI Medicare benefits and trust fund obligations.

ERROR IN PREVIOUS CALCULATIONS

In the 2011, 2012, and 2013 versions of these tables, an error in the model caused HI taxes to be counted in lifetime OASI taxes, as well as presented separately in the totals for lifetime HI taxes. This double-counting led to an overstatement of lifetime taxes in those estimates. The 2015 model corrected this error, resulting in a higher net transfer or lower net tax for workers in each category. For instance, the transfers and taxes within OASI for an average worker in 2015 are still close to each other, but the net transfer has turned from negative to positive.

Calculating Expected Lifetime Benefits

SOCIAL SECURITY BENEFITS

The model calculates a first-year Social Security benefit based on rules in effect for a cohort at the time of retirement. Because all workers are assumed to retire at age 65, retirees in later cohorts receive a slight reduction in benefits for retiring before the normal retirement age.

The choice of age 65 as the retirement age has only modest effect on the calculation for each cohort. The annual penalty reduction for early retirement is designed to be roughly actuarially neutral, so this has only a small effect on lifetime benefits (e.g., the reduction for early retirement roughly offsets the gain from collecting benefits for additional years). In years after age 65, benefits are increased by the cost-of-living adjustment assumed in the Social Security trustees' reports and discounted back to age 65 using the 2 percent real discount rate.

ERROR IN PREVIOUS SOCIAL SECURITY CALCULATIONS

The 2015 update corrected a programming error in previous models that meant the early retirement penalty was not applied for two-earner couples whose normal retirement age was greater than 65.

MEDICARE BENEFITS

To calculate annual Medicare benefits, the model uses average Medicare expenditures per Medicare enrollee for both HI and Supplemental Medical Insurance (Parts A, B, and D). As with Social Security lifetime benefits, the stream of Medicare benefits is adjusted for probability of dying each year after age 65 and discounted back to age 65.

In reality, the distribution of both annual and lifetime Medicare expenditures is highly uneven, though less so in the latter case, with most expenditures focused on a small number of high-cost people. Also, average expenditures normally increase with age, because those just turning age 65 are on average healthier than those at more advanced ages.

In a 2012 brief, we showed the sensitivity of our estimates for lifetime Medicare benefits to several alternative assumptions (Steuerle and Quakenbush 2012). Age-specific estimates of insurance value tended to raise the estimates of lifetime benefits relative to the simpler assumption that all elderly recipients at any point in time got the same insurance value out of their Medicare policies.

MEDICARE PREMIUMS

To account for premiums paid for enrollees in Medicare Parts B and D, we subtract average premiums from average Medicare expenditures to present benefits net of premiums. Our calculations do not include income-related premium adjustments for high earners, because this would require additional assumptions about enrollees' incomes after age 65. These premiums reflect a small number of enrollees, though the percentage affected is expected to grow because the thresholds at which they apply are frozen through 2019 and then indexed for price inflation, which tends to grow more slowly than wages. Still, few at the lifetime income levels shown would be subject to this surtax until the distant future.

MEDICARE COST SCENARIO

Lifetime Medicare benefits are estimated using an "illustrative alternative scenario" published by CMS actuaries.[2] Before the 2015 trustees' reports, the intermediate current law scenario assumed that deep cuts in physician payment rates scheduled in law would take effect, resulting in lower projected Medicare expenditures. In reality, Congress prevented much of these cuts (which could have resulted in fewer service providers accepting Medicare). The CMS actuaries produced a supplemental analysis with the Medicare trustees' report each year to illustrate cost effects, assuming that physician payment rates would not be cut and that several other cost-reducing measures, many introduced in the Affordable Care Act, would not be fully implemented.[3] This alternative scenario formed the basis of our updates from 2012 forward (prior updates used current law).

The Medicare Access and CHIP Reauthorization Act of 2015 introduced a permanent adjustment to the formulas used to calculate physician reimbursement rates so these periodic "doc fixes" would no longer be required. However, the CMS actuaries report that under the new formulas, reimbursement rates for physicians accepting Medicare will continue to fall relative to the reimbursement rate of private insurance, and this decline may not be sustainable. The actuaries' illustrative scenario, used here, assumes these provisions are scaled back over time, resulting in higher projected Medicare expenditures and therefore higher estimated lifetime benefits.

Notes

1   "Are the Social Security Trust Funds Real?" in Tax Policy Center Briefing Book, Urban-Brookings Tax Policy Center, accessed May 11, 2018, http://www.taxpolicycenter.org/briefing-book/are-social-security-trust-funds-real.

2   John D. Shatto (director, Medicare and Medicaid Cost Estimates Group) and M. Kent Clemens (actuary), "Projected Medicare Expenditures under an Illustrative Scenario with Alternative Payment Updates to Medicare Providers," June 5, 2018, Centers for Medicare & Medicaid Services, https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/ReportsTrustFunds/Downloads/2018TRAlternativeScenario.pdf.

3   One such cost-containment mechanism, the Independent Payment Advisory Board, was repealed by the Bipartisan Budget Act of 2018 (Pub. L. No. 115-123). Although low Medicare cost growth in recent years means the board was never used, it was intended to make recommendations for containing Medicare spending when cost growth exceeded specified thresholds. The board's elimination is believed by many to have led to increased health costs because some of its cost-reducing recommendations would have been implemented absent positive congressional action to disapprove.

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Acknowledgments

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