

## **REPLACEMENT RATES FOR HYPOTHETICAL RETIRED WORKERS**

*by Michael Clingman, ASA, Kyle Burkhalter, FSA, and Chris Chaplain, ASA*

### **Introduction**

Adequacy and equity of Social Security benefits are major policy considerations for the program. One measure of adequacy is the percentage of pre-retirement earnings that Social Security benefits replace, or the “replacement rate”. The numerator of this replacement rate is well established as the Social Security benefit. One indicator of equity is the degree of variation in replacement rates across different career-average earnings levels and birth cohorts.

In this note, we use the average of the highest 35 years of earnings, wage-indexed to the year before retirement, as the replacement rate denominator. Because Social Security serves a large population of workers with career earnings patterns that vary greatly, we believe the denominator used in this note is the most appropriate choice for measuring the adequacy of Social Security retirement benefits. For a full analysis of this and other possible concepts of replacement rates, see Actuarial Note Number 155 at:

[http://www.ssa.gov/OACT/NOTES/pdf\\_notes/note155.pdf](http://www.ssa.gov/OACT/NOTES/pdf_notes/note155.pdf).

We base all calculations on the intermediate assumptions of the 2018 Trustees Report.

### **Social Security Benefits**

The Social Security benefit formula<sup>1</sup> uses wage-indexed earnings in computing the primary insurance amount (PIA). For a retired worker starting benefits at any age, the PIA formula:

- Indexes annual earnings for those years when the worker is younger than age 60 using changes in the national average wage index (AWI) between each year of younger age and age 60;
- Averages the highest 35 years of these indexed earnings and unindexed earnings at age 60 and over, and converts this average to a monthly

amount, called average indexed monthly earnings (AIME);

- Applies factors of 90 percent, 32 percent, and 15 percent to specified portions of the AIME in a progressive manner, resulting in higher portions of earnings replaced for those with lower AIMEs; and
- Applies cost-of-living increases for each year after age 62.

The retired-worker benefit payable at any age is the PIA adjusted for early or delayed retirement.

The AIME calculation reflects a worker’s career-average earnings level adjusted for changes in the standard of living over the worker’s career, which is consistent with a wage-indexed denominator for the replacement rate measure.

### **Earnings Patterns for Hypothetical Workers**

Our analysis includes five hypothetical workers with different pre-retirement career-average earnings levels. Four of the hypothetical workers in the tables assume the earnings history of workers following scaled-earnings patterns<sup>2</sup> and reflect very low, low, medium, and high career-average levels of pre-retirement earnings starting at age 21. The fifth hypothetical worker assumes the earnings history of a steady maximum earner starting at age 22. The scaled-earnings patterns are derived from earnings experienced by insured workers in years 1995 through 2014. The earnings levels differ by age, reflecting both the likelihood of having earnings at each age, and the average earnings levels for those who have earnings. The career-average level of earnings for each scaled earner case targets a specific percent of the AWI. For the scaled very low, low, medium, and high earners, the career-average earnings level is about 25 percent, 45 percent, 100 percent, and 160 percent of the AWI, respectively (\$12,974, \$23,353, \$51,894, and \$83,031, respectively, for 2018). The steady maximum earner has earnings at or above the contribution and benefit base (\$128,400 for 2018) for

<sup>1</sup> Prior to the 1977 Amendments to the Social Security Act, the benefit formula differed. Historical benefit levels reflect the benefit formula in effect at the time.

<sup>2</sup> Actuarial Note Number 2018.3 has more details on scaled-earnings patterns. See [www.ssa.gov/OACT/NOTES/ran3/an2018-3.pdf](http://www.ssa.gov/OACT/NOTES/ran3/an2018-3.pdf).

each year starting at age 22 through the year prior to retirement.

## Results

Tables A through D show benefit and replacement rate information for the five different pre-retirement earnings levels. Each table shows the Social Security benefit in wage-indexed 2018 dollars and as a percent of career average earnings (the replacement rate measure in this note). The denominator of this replacement rate is the average of the highest 35 years of earnings for these hypothetical workers, wage-indexed to the year before retirement.<sup>3</sup> This calculation is very similar to the current-law AIME calculation, except that the AIME calculation wage-indexes earnings to age 60 rather than to the year before retirement. The calculations in these tables are wage-indexed to the year before retirement to provide a closer comparison of pre-retirement earnings and post-retirement benefit levels.

Tables A through C show benefit amounts and replacement rates for retirement at 62, at 65, and at normal retirement age (NRA) for the hypothetical workers born in 1952 and selected subsequent years. In comparing across tables, benefit levels and replacement rates are lowest at age 62 and highest at NRA. This occurs because an actuarial reduction applies to the monthly benefit for those retiring before NRA. For an NRA of 67, individuals retiring at exact age 62 would have a 30 percent reduction in benefits, and those retiring at

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<sup>3</sup> In table D, in order to calculate the career-average earnings for birth cohorts where individuals attain age 21 before 1951, we use national average earnings from 1937 to 1950 in SSA's employee operations manual, available at <http://policy.ssa.gov/poms.nsf/lnx/0201701200>. For years prior to 1937, we use the 1937 national average earnings level.

age 65 would have a 13<sup>1</sup>/<sub>3</sub> percent reduction. Table D shows benefit amounts and replacement rates for retirement at 62,<sup>4</sup> at 65, and at normal retirement age (NRA) for selected hypothetical workers born between 1875 and 1950.

Tables A through C show current-law scheduled benefits and payable benefits in separate panels. Current-law scheduled benefits are those specified in the law. However, when the trust fund reserves deplete, current law prescribes that expenditures cannot exceed current income. Because the projected date that the combined OASI and DI Trust Funds deplete is 2034 and projected income will not fully finance scheduled benefits after that date, the tables include "payable benefits", where scheduled benefits are reduced such that current-law income is sufficient to pay benefits for that year.

Tables A through C also include current-law scheduled and payable benefits in CPI-indexed 2018 dollars.<sup>5</sup> The current-law scheduled benefits column shows a general increase over time in the purchasing power of Social Security benefits, which would be necessary for retirees across generations to maintain a similar standard of living.

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<sup>4</sup> The Social Security Act extended retirement benefits beginning at age 62 to female workers effective November 1956 and to male workers effective August 1961.

<sup>5</sup> A CPI-indexed 2018 dollar adjustment uses the adjusted CPI indexing series in table VI.G6 of the 2018 Trustees Report. See: [www.ssa.gov/OACT/TR/2018/lr6g6.html](http://www.ssa.gov/OACT/TR/2018/lr6g6.html)

**Table A—Scheduled and Payable Benefits and Replacement Rates for Hypothetical Retired Workers<sup>a</sup> in their First Year of Benefit Receipt at Age 62**

*(based on intermediate assumptions of the 2018 OASDI Trustees Report)*

Year of birth <sup>c</sup>	Year attain age 62	Current-Law Scheduled Benefits		Payable Benefits		Purchasing Power of Benefits in CPI-Indexed 2018 dollars <sup>b</sup>	
		Wage-indexed 2018 dollars <sup>d</sup>	Percent of career-average earnings <sup>e</sup>	Wage-indexed 2018 dollars <sup>d</sup>	Percent of career-average earnings <sup>e</sup>	Current-Law Scheduled Benefits	Payable Benefits
<b>Scaled very low earnings: (Career-average earnings for 2017 equal \$12,479<sup>f</sup>)</b>							
1952	2014	\$7,727	61.8	\$7,727	61.8	\$7,266	\$7,266
1953	2015	7,548	60.3	7,548	60.3	7,376	7,376
1954	2016	7,735	60.4	7,735	60.4	7,569	7,569
1955	2017	7,706	61.2	7,706	61.2	7,594	7,594
1956	2018	7,419	59.5	7,419	59.5	7,419	7,419
1960	2022	6,937	56.0	6,937	56.0	7,451	7,451
1965	2027	6,980	56.1	6,980	56.1	8,111	8,111
1970	2032	7,011	56.3	7,011	56.3	8,672	8,672
1975	2037	7,016	56.3	5,462	43.8	9,232	7,188
1980	2042	7,023	56.3	5,473	43.9	9,804	7,640
1985	2047	7,023	56.3	5,532	44.3	10,396	8,189
1990	2052	7,022	56.3	5,555	44.5	11,034	8,729
1995	2057	7,023	56.3	5,515	44.2	11,713	9,198
2000	2062	7,025	56.3	5,439	43.6	12,431	9,624
2005	2067	7,031	56.3	5,359	42.9	13,172	10,039
2010	2072	7,034	56.4	5,275	42.3	13,933	10,447
2015	2077	7,036	56.4	5,231	41.9	14,728	10,949
2020	2082	7,036	56.4	5,247	42.1	15,557	11,600
2025	2087	7,035	56.4	5,258	42.1	16,438	12,284
<b>Scaled low earnings: (Career-average earnings for 2017 equal \$22,463<sup>f</sup>)</b>							
1952	2014	10,102	44.9	10,102	44.9	9,499	9,499
1953	2015	9,866	43.8	9,866	43.8	9,640	9,640
1954	2016	10,104	43.8	10,104	43.8	9,888	9,888
1955	2017	10,063	44.4	10,063	44.4	9,916	9,916
1956	2018	9,704	43.2	9,704	43.2	9,704	9,704
1960	2022	9,063	40.6	9,063	40.6	9,733	9,733
1965	2027	9,134	40.8	9,134	40.8	10,614	10,614
1970	2032	9,171	40.9	9,171	40.9	11,345	11,345
1975	2037	9,173	40.9	7,142	31.8	12,070	9,397
1980	2042	9,183	40.9	7,156	31.9	12,820	9,990
1985	2047	9,182	40.9	7,233	32.2	13,592	10,706
1990	2052	9,179	40.9	7,262	32.4	14,424	11,411
1995	2057	9,183	40.9	7,211	32.1	15,314	12,025
2000	2062	9,184	40.9	7,111	31.7	16,252	12,583
2005	2067	9,194	40.9	7,007	31.2	17,224	13,127
2010	2072	9,197	40.9	6,896	30.7	18,216	13,659
2015	2077	9,199	40.9	6,839	30.4	19,255	14,315
2020	2082	9,199	40.9	6,860	30.5	20,340	15,167
2025	2087	9,198	40.9	6,874	30.6	21,491	16,060
<b>Scaled medium earnings: (Career-average earnings for 2017 equal \$49,917<sup>f</sup>)</b>							
1952	2014	16,623	33.2	16,623	33.2	15,632	15,632
1953	2015	16,249	32.5	16,249	32.5	15,877	15,877
1954	2016	16,647	32.5	16,647	32.5	16,291	16,291
1955	2017	16,585	32.9	16,585	32.9	16,343	16,343
1956	2018	15,992	32.0	15,992	32.0	15,992	15,992
1960	2022	14,929	30.1	14,929	30.1	16,034	16,034
1965	2027	15,037	30.2	15,037	30.2	17,474	17,474
1970	2032	15,095	30.3	15,095	30.3	18,673	18,673
1975	2037	15,110	30.3	11,764	23.6	19,883	15,480
1980	2042	15,125	30.3	11,786	23.6	21,115	16,454
1985	2047	15,120	30.3	11,910	23.9	22,381	17,629
1990	2052	15,116	30.3	11,959	24.0	23,754	18,793
1995	2057	15,119	30.3	11,872	23.8	25,214	19,799
2000	2062	15,121	30.3	11,707	23.5	26,757	20,716
2005	2067	15,138	30.3	11,537	23.1	28,359	21,613
2010	2072	15,142	30.3	11,354	22.7	29,991	22,488
2015	2077	15,147	30.3	11,261	22.5	31,706	23,571

**Table A—Scheduled and Payable Benefits and Replacement Rates for Hypothetical Retired Workers<sup>a</sup> in their First Year of Benefit Receipt at Age 62 (Cont.)**

(based on intermediate assumptions of the 2018 OASDI Trustees Report)

Year of birth <sup>c</sup>	Year attain age 62	Current-Law Scheduled Benefits		Payable Benefits		Purchasing Power of Benefits in CPI-Indexed 2018 dollars <sup>b</sup>	
		Wage-indexed 2018 dollars <sup>d</sup>	Percent of career-average earnings <sup>e</sup>	Wage-indexed 2018 dollars <sup>d</sup>	Percent of career-average earnings <sup>e</sup>	Current-Law Scheduled Benefits	Payable Benefits
2020	2082	\$15,147	30.3	\$11,294	22.6	\$33,490	\$24,973
2025	2087	15,144	30.3	11,317	22.6	35,383	26,442
<b>Scaled high earnings: (Career-average earnings for 2017 equal \$79,868<sup>f</sup>)</b>							
1952	2014	22,070	27.6	22,070	27.6	20,754	20,754
1953	2015	21,570	26.9	21,570	26.9	21,077	21,077
1954	2016	22,102	27.0	22,102	27.0	21,629	21,629
1955	2017	22,010	27.3	22,010	27.3	21,688	21,688
1956	2018	21,223	26.6	21,223	26.6	21,223	21,223
1960	2022	19,813	25.0	19,813	25.0	21,280	21,280
1965	2027	19,954	25.0	19,954	25.0	23,189	23,189
1970	2032	20,040	25.1	20,040	25.1	24,790	24,790
1975	2037	20,052	25.1	15,612	19.5	26,386	20,543
1980	2042	20,071	25.1	15,640	19.6	28,020	21,835
1985	2047	20,068	25.1	15,807	19.8	29,705	23,398
1990	2052	20,061	25.1	15,871	19.9	31,524	24,940
1995	2057	20,063	25.1	15,754	19.7	33,460	26,274
2000	2062	20,069	25.1	15,538	19.4	35,511	27,493
2005	2067	20,089	25.2	15,310	19.2	37,633	28,681
2010	2072	20,094	25.2	15,067	18.9	39,801	29,844
2015	2077	20,100	25.2	14,943	18.7	42,073	31,278
2020	2082	20,101	25.2	14,989	18.8	44,443	33,140
2025	2087	20,097	25.2	15,019	18.8	46,957	35,091
<b>Steady maximum earnings: (Career-average earnings for 2017 equal \$122,516<sup>f</sup>)</b>							
1952	2014	26,578	22.0	26,578	22.0	24,994	24,994
1953	2015	26,075	21.5	26,075	21.5	25,479	25,479
1954	2016	26,764	21.4	26,764	21.4	26,192	26,192
1955	2017	26,699	21.7	26,699	21.7	26,309	26,309
1956	2018	25,803	21.1	25,803	21.1	25,803	25,803
1960	2022	24,142	19.7	24,142	19.7	25,929	25,929
1965	2027	24,344	19.8	24,344	19.8	28,290	28,290
1970	2032	24,470	19.8	24,470	19.8	30,269	30,269
1975	2037	24,468	19.8	19,049	15.4	32,196	25,066
1980	2042	24,508	19.8	19,099	15.4	34,215	26,663
1985	2047	24,476	19.9	19,279	15.7	36,230	28,538
1990	2052	24,427	19.9	19,325	15.7	38,384	30,367
1995	2057	24,402	19.9	19,162	15.6	40,697	31,957
2000	2062	24,398	19.9	18,889	15.4	43,172	33,424
2005	2067	24,427	19.9	18,616	15.2	45,761	34,875
2010	2072	24,439	19.9	18,325	14.9	48,406	36,296
2015	2077	24,450	19.9	18,177	14.8	51,178	38,047
2020	2082	24,453	19.9	18,234	14.8	54,067	40,316
2025	2087	24,451	19.9	18,272	14.9	57,130	42,694

<sup>a</sup> The table uses four hypothetical “scaled” earnings levels and a hypothetical worker who earns the taxable maximum each year. See Actuarial Note Number 2018.3 at [www.ssa.gov/OACT/NOTES/ran3/an2018-3.pdf](http://www.ssa.gov/OACT/NOTES/ran3/an2018-3.pdf) for more information.

<sup>b</sup> CPI-indexed dollar adjustment uses the adjusted CPI indexing series shown in table VI.G6 of the 2018 OASDI Trustees Report.

<sup>c</sup> Born on January 2nd of year.

<sup>d</sup> Wage-indexed dollar adjustment uses the national average wage indexing series shown in table VI.G6 of the 2018 OASDI Trustees Report.

<sup>e</sup> Computed using nominal dollars.

<sup>f</sup> Average of highest 35 years of wage-indexed earnings through the year prior to retirement. The value is for retirement in 2018. Thus, the annual earnings used for this average are wage-indexed to 2017.

**Table B—Scheduled and Payable Benefits and Replacement Rates for Hypothetical Retired Workers<sup>a</sup> in their First Year of Benefit Receipt at Age 65**  
*(based on intermediate assumptions of the 2018 OASDI Trustees Report)*

Year of birth <sup>c</sup>	Year attain age 65	Current-Law Scheduled Benefits		Payable Benefits		Purchasing Power of Benefits in CPI-Indexed 2018 dollars <sup>b</sup>	
		Wage-indexed 2018 dollars <sup>d</sup>	Percent of career-average earnings <sup>e</sup>	Wage-indexed 2018 dollars <sup>d</sup>	Percent of career-average earnings <sup>e</sup>	Current-Law Scheduled Benefits	Payable Benefits
<b>Scaled very low earnings: (Career-average earnings for 2017 equal \$12,505<sup>f</sup>)</b>							
1952	2017	\$9,129	72.4	\$9,129	72.4	\$8,995	\$8,995
1953	2018	8,946	71.5	8,946	71.5	8,946	8,946
1954	2019	9,106	73.1	9,106	73.1	9,257	9,257
1955	2020	9,108	73.4	9,108	73.4	9,434	9,434
1956	2021	8,767	70.6	8,767	70.6	9,251	9,251
1960	2025	8,196	65.9	8,196	65.9	9,253	9,253
1965	2030	8,352	66.9	8,352	66.9	10,076	10,076
1970	2035	8,385	67.1	6,578	52.6	10,768	8,448
1975	2040	8,405	67.3	6,528	52.3	11,463	8,904
1980	2045	8,423	67.4	6,610	52.9	12,177	9,557
1985	2050	8,413	67.3	6,652	53.2	12,908	10,206
1990	2055	8,412	67.3	6,634	53.1	13,700	10,805
1995	2060	8,415	67.3	6,553	52.4	14,544	11,326
2000	2065	8,426	67.4	6,464	51.7	15,433	11,839
2005	2070	8,443	67.5	6,369	50.9	16,356	12,337
2010	2075	8,449	67.6	6,294	50.4	17,301	12,888
2015	2080	8,455	67.6	6,293	50.3	18,289	13,611
2020	2085	8,453	67.6	6,318	50.5	19,318	14,438
2025	2090	8,448	67.6	6,290	50.3	20,410	15,196
<b>Scaled low earnings: (Career-average earnings for 2017 equal \$22,510<sup>f</sup>)</b>							
1952	2017	11,946	52.6	11,946	52.6	11,772	11,772
1953	2018	11,699	52.0	11,699	52.0	11,699	11,699
1954	2019	11,911	53.1	11,911	53.1	12,109	12,109
1955	2020	11,922	53.4	11,922	53.4	12,349	12,349
1956	2021	11,480	51.4	11,480	51.4	12,114	12,114
1960	2025	10,726	47.9	10,726	47.9	12,110	12,110
1965	2030	10,933	48.6	10,933	48.6	13,190	13,190
1970	2035	10,979	48.8	8,613	38.3	14,098	11,060
1975	2040	11,004	48.9	8,547	38.0	15,008	11,657
1980	2045	11,025	49.0	8,652	38.5	15,939	12,509
1985	2050	11,011	49.0	8,706	38.7	16,894	13,358
1990	2055	11,011	49.0	8,684	38.6	17,932	14,143
1995	2060	11,012	49.0	8,576	38.2	19,033	14,822
2000	2065	11,030	49.0	8,461	37.6	20,202	15,498
2005	2070	11,051	49.1	8,336	37.0	21,407	16,147
2010	2075	11,057	49.1	8,236	36.6	22,641	16,866
2015	2080	11,065	49.1	8,235	36.5	23,934	17,813
2020	2085	11,063	49.1	8,268	36.7	25,281	18,895
2025	2090	11,056	49.1	8,232	36.6	26,711	19,888
<b>Scaled medium earnings: (Career-average earnings for 2017 equal \$50,021<sup>f</sup>)</b>							
1952	2017	19,690	39.0	19,690	39.0	19,402	19,402
1953	2018	19,298	38.6	19,298	38.6	19,298	19,298
1954	2019	19,632	39.4	19,632	39.4	19,959	19,959
1955	2020	19,649	39.6	19,649	39.6	20,354	20,354
1956	2021	18,926	38.1	18,926	38.1	19,971	19,971
1960	2025	17,700	35.6	17,700	35.6	19,984	19,984
1965	2030	18,037	36.1	18,037	36.1	21,761	21,761
1970	2035	18,104	36.2	14,203	28.4	23,249	18,239
1975	2040	18,144	36.3	14,093	28.2	24,746	19,221
1980	2045	18,178	36.4	14,266	28.6	26,280	20,625
1985	2050	18,160	36.3	14,359	28.7	27,863	22,030
1990	2055	18,156	36.3	14,320	28.6	29,569	23,321
1995	2060	18,159	36.3	14,142	28.3	31,385	24,442
2000	2065	18,185	36.4	13,951	27.9	33,308	25,552
2005	2070	18,222	36.4	13,744	27.5	35,297	26,624
2010	2075	18,230	36.4	13,580	27.1	37,330	27,809

**Table B—Scheduled and Payable Benefits and Replacement Rates for Hypothetical Retired Workers<sup>a</sup> in their First Year of Benefit Receipt at Age 65 (Cont.)**

(based on intermediate assumptions of the 2018 OASDI Trustees Report)

Year of birth <sup>c</sup>	Year attain age 65	Current-Law Scheduled Benefits		Payable Benefits		Purchasing Power of Benefits in CPI-Indexed 2018 dollars <sup>b</sup>	
		Wage-indexed 2018 dollars <sup>d</sup>	Percent of career-average earnings <sup>e</sup>	Wage-indexed 2018 dollars <sup>d</sup>	Percent of career-average earnings <sup>e</sup>	Current-Law Scheduled Benefits	Payable Benefits
2015	2080	\$18,243	36.5	\$13,577	27.2	\$39,460	\$29,368
2020	2085	18,239	36.5	13,632	27.3	41,682	31,154
2025	2090	18,229	36.4	13,572	27.1	44,040	32,790
<b>Scaled high earnings: (Career-average earnings for 2017 equal \$80,034<sup>f</sup>)</b>							
1952	2017	26,088	32.3	26,088	32.3	25,707	25,707
1953	2018	25,563	31.9	25,563	31.9	25,563	25,563
1954	2019	26,015	32.6	26,015	32.6	26,447	26,447
1955	2020	26,041	32.8	26,041	32.8	26,974	26,974
1956	2021	25,063	31.5	25,063	31.5	26,447	26,447
1960	2025	23,419	29.4	23,419	29.4	26,441	26,441
1965	2030	23,881	29.9	23,881	29.9	28,811	28,811
1970	2035	23,969	30.0	18,804	23.5	30,780	24,147
1975	2040	24,025	30.0	18,661	23.3	32,766	25,450
1980	2045	24,069	30.1	18,889	23.6	34,797	27,309
1985	2050	24,044	30.1	19,011	23.8	36,890	29,168
1990	2055	24,038	30.1	18,958	23.7	39,148	30,876
1995	2060	24,043	30.1	18,724	23.4	41,555	32,362
2000	2065	24,078	30.1	18,471	23.1	44,101	33,832
2005	2070	24,125	30.1	18,197	22.7	46,733	35,250
2010	2075	24,137	30.2	17,981	22.5	49,426	36,820
2015	2080	24,154	30.2	17,976	22.5	52,245	38,883
2020	2085	24,150	30.2	18,050	22.6	55,189	41,249
2025	2090	24,136	30.2	17,970	22.5	58,310	43,414
<b>Steady maximum earnings: (Career-average earnings for 2017 equal \$122,516<sup>f</sup>)</b>							
1952	2017	31,700	25.7	31,700	25.7	31,237	31,237
1953	2018	31,130	25.4	31,130	25.4	31,130	31,130
1954	2019	31,705	25.9	31,705	25.9	32,231	32,231
1955	2020	31,748	26.0	31,748	26.0	32,886	32,886
1956	2021	30,597	25.1	30,597	25.1	32,287	32,287
1960	2025	28,631	23.3	28,631	23.3	32,325	32,325
1965	2030	29,219	23.7	29,219	23.7	35,252	35,252
1970	2035	29,349	23.8	23,025	18.7	37,689	29,568
1975	2040	29,394	23.8	22,831	18.5	40,089	31,138
1980	2045	29,465	23.8	23,124	18.7	42,598	33,431
1985	2050	29,402	23.8	23,248	18.8	45,112	35,669
1990	2055	29,341	23.9	23,141	18.8	47,786	37,688
1995	2060	29,314	23.9	22,829	18.6	50,664	39,455
2000	2065	29,339	23.9	22,507	18.3	53,737	41,224
2005	2070	29,400	24.0	22,176	18.1	56,951	42,958
2010	2075	29,419	24.0	21,915	17.9	60,242	44,877
2015	2080	29,445	24.0	21,914	17.9	63,690	47,401
2020	2085	29,443	24.0	22,006	17.9	67,286	50,290
2025	2090	29,429	24.0	21,911	17.9	71,099	52,936

<sup>a</sup> The table uses four hypothetical “scaled” earnings levels and a hypothetical worker who earns the taxable maximum each year. See Actuarial Note Number 2018.3 at [www.ssa.gov/OACT/NOTES/ran3/an2018-3.pdf](http://www.ssa.gov/OACT/NOTES/ran3/an2018-3.pdf) for more information.

<sup>b</sup> CPI-indexed dollar adjustment uses the adjusted CPI indexing series shown in table VI.G6 of the 2018 OASDI Trustees Report.

<sup>c</sup> Born on January 2nd of year.

<sup>d</sup> Wage-indexed dollar adjustment uses the national average wage indexing series shown in table VI.G6 of the 2018 OASDI Trustees Report.

<sup>e</sup> Computed using nominal dollars.

<sup>f</sup> Average of highest 35 years of wage-indexed earnings through the year prior to retirement. The value is for retirement in 2018. Thus, the annual earnings used for this average are wage-indexed to 2017.

**Table C—Scheduled and Payable Benefits and Replacement Rates for Hypothetical Retired Workers<sup>a</sup> in their First Year of Benefit Receipt at Normal Retirement Age (NRA)**  
*(based on intermediate assumptions of the 2018 OASDI Trustees Report)*

Year of birth <sup>c</sup>	Year attain NRA	Age at retirement	Current-Law Scheduled Benefits		Payable Benefits		Purchasing Power of Benefits in CPI-Indexed 2018 dollars <sup>b</sup>	
			Wage-indexed 2018 dollars <sup>d</sup>	Percent of career-average earnings <sup>e</sup>	Wage-indexed 2018 dollars <sup>d</sup>	Percent of career-average earnings <sup>e</sup>	Current-Law Scheduled Benefits	Payable Benefits
<b>Scaled very low earnings: (Career-average earnings for 2017 equal \$12,505<sup>f</sup>)</b>								
1952	2018	66:0	\$9,619	76.9	\$9,619	76.9	\$9,619	\$9,619
1953	2019	66:0	9,418	75.6	9,418	75.6	9,574	9,574
1954	2020	66:0	9,582	77.2	9,582	77.2	9,926	9,926
1955	2021	66:2	9,738	77.9	9,738	77.9	10,232	10,232
1956	2022	66:4	9,537	75.6	9,537	75.6	10,156	10,156
1960	2027	67:0	9,192	73.7	9,192	73.7	10,682	10,682
1965	2032	67:0	9,402	75.3	9,402	75.3	11,630	11,630
1970	2037	67:0	9,448	75.6	7,356	58.9	12,432	9,679
1975	2042	67:0	9,476	75.8	7,385	59.1	13,230	10,310
1980	2047	67:0	9,491	76.0	7,476	59.9	14,049	11,066
1985	2052	67:0	9,480	75.9	7,500	60.0	14,897	11,786
1990	2057	67:0	9,480	75.9	7,444	59.6	15,810	12,415
1995	2062	67:0	9,484	75.9	7,342	58.8	16,781	12,992
2000	2067	67:0	9,508	76.0	7,246	57.9	17,812	13,575
2005	2072	67:0	9,528	76.2	7,144	57.1	18,873	14,152
2010	2077	67:0	9,537	76.2	7,090	56.6	19,962	14,840
2015	2082	67:0	9,544	76.3	7,117	56.9	21,101	15,735
2020	2087	67:0	9,540	76.3	7,129	57.0	22,290	16,657
2025	2092	67:0	9,534	76.2	7,067	56.5	23,552	17,457
<b>Scaled low earnings: (Career-average earnings for 2017 equal \$22,510<sup>f</sup>)</b>								
1952	2018	66:0	12,589	55.9	12,589	55.9	12,589	12,589
1953	2019	66:0	12,327	55.0	12,327	55.0	12,531	12,531
1954	2020	66:0	12,540	56.1	12,540	56.1	12,989	12,989
1955	2021	66:2	12,739	56.6	12,739	56.6	13,385	13,385
1956	2022	66:4	12,487	55.0	12,487	55.0	13,297	13,297
1960	2027	67:0	12,036	53.6	12,036	53.6	13,987	13,987
1965	2032	67:0	12,310	54.8	12,310	54.8	15,227	15,227
1970	2037	67:0	12,369	55.0	9,630	42.8	16,275	12,671
1975	2042	67:0	12,405	55.1	9,667	42.9	17,319	13,496
1980	2047	67:0	12,423	55.2	9,786	43.5	18,389	14,485
1985	2052	67:0	12,409	55.2	9,817	43.7	19,499	15,427
1990	2057	67:0	12,408	55.2	9,743	43.3	20,694	16,250
1995	2062	67:0	12,415	55.2	9,611	42.7	21,967	17,007
2000	2067	67:0	12,442	55.3	9,482	42.1	23,309	17,764
2005	2072	67:0	12,472	55.4	9,352	41.5	24,703	18,523
2010	2077	67:0	12,481	55.4	9,279	41.2	26,125	19,422
2015	2082	67:0	12,490	55.5	9,314	41.4	27,617	20,593
2020	2087	67:0	12,485	55.5	9,330	41.5	29,171	21,800
2025	2092	67:0	12,477	55.4	9,248	41.1	30,822	22,846
<b>Scaled medium earnings: (Career-average earnings for 2017 equal \$50,021<sup>f</sup>)</b>								
1952	2018	66:0	20,742	41.5	20,742	41.5	20,742	20,742
1953	2019	66:0	20,324	40.8	20,324	40.8	20,662	20,662
1954	2020	66:0	20,665	41.6	20,665	41.6	21,406	21,406
1955	2021	66:2	21,012	42.0	21,012	42.0	22,078	22,078
1956	2022	66:4	20,594	40.8	20,594	40.8	21,930	21,930
1960	2027	67:0	19,863	39.8	19,863	39.8	23,082	23,082
1965	2032	67:0	20,306	40.7	20,306	40.7	25,118	25,118
1970	2037	67:0	20,395	40.8	15,879	31.8	26,838	20,895
1975	2042	67:0	20,457	40.9	15,942	31.9	28,559	22,255
1980	2047	67:0	20,489	41.0	16,139	32.3	30,329	23,890
1985	2052	67:0	20,461	40.9	16,188	32.4	32,152	25,437
1990	2057	67:0	20,461	40.9	16,067	32.1	34,124	26,796
1995	2062	67:0	20,469	40.9	15,847	31.7	36,219	28,041
2000	2067	67:0	20,518	41.0	15,637	31.2	38,438	29,294
2005	2072	67:0	20,562	41.1	15,418	30.8	40,728	30,539
2010	2077	67:0	20,578	41.1	15,298	30.6	43,074	32,023

**Table C—Scheduled and Payable Benefits and Replacement Rates for Hypothetical Retired Workers<sup>a</sup> in their First Year of Benefit Receipt at Normal Retirement Age (NRA) (Cont.)**  
(based on intermediate assumptions of the 2018 OASDI Trustees Report)

Year of birth <sup>c</sup>	Year attain NRA	Age at retirement	Current-Law Scheduled Benefits		Payable Benefits		Purchasing Power of Benefits in CPI-Indexed 2018 dollars <sup>b</sup>	
			Wage-indexed 2018 dollars <sup>d</sup>	Percent of career-average earnings <sup>e</sup>	Wage-indexed 2018 dollars <sup>d</sup>	Percent of career-average earnings <sup>e</sup>	Current-Law Scheduled Benefits	Payable Benefits
2015	2082	67:0	\$20,594	41.2	\$15,356	30.7	\$45,533	\$33,953
2020	2087	67:0	20,585	41.2	15,384	30.8	48,098	35,944
2025	2092	67:0	20,571	41.1	15,248	30.5	50,818	37,667
<b>Scaled high earnings: (Career-average earnings for 2017 equal \$80,034<sup>f</sup>)</b>								
1952	2018	66:0	27,498	34.4	27,498	34.4	27,498	27,498
1953	2019	66:0	26,927	33.8	26,927	33.8	27,374	27,374
1954	2020	66:0	27,387	34.5	27,387	34.5	28,369	28,369
1955	2021	66:2	27,844	34.8	27,844	34.8	29,256	29,256
1956	2022	66:4	27,270	33.8	27,270	33.8	29,039	29,039
1960	2027	67:0	26,268	32.9	26,268	32.9	30,526	30,526
1965	2032	67:0	26,875	33.6	26,875	33.6	33,244	33,244
1970	2037	67:0	26,995	33.8	21,017	26.3	35,523	27,656
1975	2042	67:0	27,084	33.9	21,105	26.4	37,810	29,464
1980	2047	67:0	27,126	33.9	21,367	26.7	40,152	31,627
1985	2052	67:0	27,090	33.9	21,432	26.8	42,568	33,677
1990	2057	67:0	27,089	33.9	21,271	26.6	45,178	35,476
1995	2062	67:0	27,099	33.9	20,980	26.2	47,950	37,124
2000	2067	67:0	27,163	33.9	20,702	25.8	50,887	38,782
2005	2072	67:0	27,224	34.0	20,414	25.5	53,924	40,434
2010	2077	67:0	27,246	34.0	20,256	25.3	57,031	42,399
2015	2082	67:0	27,266	34.1	20,332	25.4	60,287	44,955
2020	2087	67:0	27,255	34.1	20,368	25.5	63,682	47,590
2025	2092	67:0	27,236	34.0	20,188	25.2	67,283	49,871
<b>Steady maximum earnings: (Career-average earnings for 2017 equal \$122,516<sup>f</sup>)</b>								
1952	2018	66:0	33,523	27.4	33,523	27.4	33,523	33,523
1953	2019	66:0	32,882	26.9	32,882	26.9	33,428	33,428
1954	2020	66:0	33,460	27.4	33,460	27.4	34,659	34,659
1955	2021	66:2	34,048	27.7	34,048	27.7	35,775	35,775
1956	2022	66:4	33,388	26.9	33,388	26.9	35,555	35,555
1960	2027	67:0	32,360	26.3	32,360	26.3	37,605	37,605
1965	2032	67:0	33,124	26.8	33,124	26.8	40,975	40,975
1970	2037	67:0	33,281	26.9	25,911	20.9	43,793	34,095
1975	2042	67:0	33,365	27.0	26,001	21.0	46,580	36,298
1980	2047	67:0	33,430	27.0	26,332	21.3	49,484	38,978
1985	2052	67:0	33,347	27.0	26,382	21.4	52,401	41,457
1990	2057	67:0	33,282	27.1	26,135	21.3	55,507	43,587
1995	2062	67:0	33,260	27.1	25,750	21.0	58,852	45,564
2000	2067	67:0	33,318	27.2	25,392	20.7	62,417	47,569
2005	2072	67:0	33,395	27.2	25,041	20.4	66,147	49,599
2010	2077	67:0	33,426	27.2	24,850	20.2	69,967	52,016
2015	2082	67:0	33,455	27.3	24,946	20.4	73,969	55,157
2020	2087	67:0	33,446	27.2	24,994	20.3	78,145	58,398
2025	2092	67:0	33,426	27.2	24,776	20.2	82,574	61,205

<sup>a</sup> The table uses four hypothetical “scaled” earnings levels and a hypothetical worker who earns the taxable maximum each year. See Actuarial Note Number 2018.3 at [www.ssa.gov/OACT/NOTES/ran3/an2018-3.pdf](http://www.ssa.gov/OACT/NOTES/ran3/an2018-3.pdf) for more information.

<sup>b</sup> CPI-indexed dollar adjustment uses the adjusted CPI indexing series shown in table VI.G6 of the 2018 OASDI Trustees Report.

<sup>c</sup> Born on January 2nd of year.

<sup>d</sup> Wage-indexed dollar adjustment uses the national average wage indexing series shown in table VI.G6 of the 2018 OASDI Trustees Report.

<sup>e</sup> Computed using nominal dollars.

<sup>f</sup> Average of highest 35 years of wage-indexed earnings through the year prior to retirement. The value is for retirement in 2018. Thus, the annual earnings used for this average are wage-indexed to 2017.

**Table D—Historical Benefits and Replacement Rates for Hypothetical Retired Workers<sup>a</sup>  
in their First Year of Benefit Receipt**  
*(based on intermediate assumptions of the 2018 OASDI Trustees Report)*

Year of birth <sup>b</sup>	Year attain age 65	Benefit Amounts for Workers Retiring at 62		Benefit Amounts for Workers Retiring at 65		Benefit Amounts for Workers Retiring at NRA			
		Wage-indexed 2018 dollars <sup>c</sup>	Percent of career-average earnings <sup>d</sup>	Wage-indexed 2018 dollars <sup>c</sup>	Percent of career-average earnings <sup>d</sup>	NRA	Wage-indexed 2018 dollars <sup>c</sup>	Percent of career-average earnings <sup>d</sup>	
<b>Scaled very low earnings:</b>									
1875	1940	e	e	\$5,211	42.0	65:0	\$5,211	42.0	
1880	1945	e	e	3,183	25.7	65:0	3,183	25.7	
1885	1950	e	e	4,569	36.2	65:0	4,569	36.2	
1890	1955	e	e	8,897	71.8	65:0	8,897	71.8	
1895	1960	e	e	8,858	71.0	65:0	8,858	71.0	
1900	1965	\$6,736	54.6	8,444	66.3	65:0	8,444	66.3	
1905	1970	6,142	50.1	8,842	71.5	65:0	8,842	71.5	
1910	1975	7,085	60.1	10,041	83.2	65:0	10,041	83.2	
1915	1980	8,299	67.9	10,849	91.1	65:0	10,849	91.1	
1920	1985	7,896	64.3	9,390	75.5	65:0	9,390	75.5	
1925	1990	7,970	65.5	9,936	80.1	65:0	9,936	80.1	
1930	1995	7,921	64.3	10,003	80.2	65:0	10,003	80.2	
1935	2000	7,779	63.6	8,838	71.9	65:0	8,838	71.9	
1940	2005	8,081	63.0	9,689	77.4	65:6	10,229	80.3	
1945	2010	7,412	59.8	9,683	76.4	66:0	10,086	80.2	
1950	2015	7,612	60.6	9,166	73.1	66:0	9,719	75.8	
<b>Scaled low earnings:</b>									
1875	1940	e	e	6,861	30.8	65:0	6,861	30.8	
1880	1945	e	e	5,725	25.6	65:0	5,725	25.6	
1885	1950	e	e	7,344	32.2	65:0	7,344	32.2	
1890	1955	e	e	11,286	50.5	65:0	11,286	50.5	
1895	1960	e	e	10,568	47.0	65:0	10,568	47.0	
1900	1965	8,005	36.1	10,159	44.3	65:0	10,159	44.3	
1905	1970	7,475	33.9	10,519	47.3	65:0	10,519	47.3	
1910	1975	8,904	41.9	12,987	59.8	65:0	12,987	59.8	
1915	1980	10,645	48.4	14,287	66.7	65:0	14,287	66.7	
1920	1985	11,492	52.0	13,694	61.1	65:0	13,694	61.1	
1925	1990	10,479	47.8	13,030	58.4	65:0	13,030	58.4	
1930	1995	10,399	46.9	13,109	58.4	65:0	13,109	58.4	
1935	2000	10,168	46.2	11,576	52.3	65:0	11,576	52.3	
1940	2005	10,575	45.8	12,683	56.3	65:6	13,392	58.4	
1945	2010	9,683	43.4	12,672	55.5	66:0	13,209	58.3	
1950	2015	9,962	44.1	12,002	53.2	66:0	12,716	55.1	
<b>Scaled medium earnings:</b>									
1875	1940	e	e	11,855	23.9	65:0	11,855	23.9	
1880	1945	e	e	8,190	16.5	65:0	8,190	16.5	
1885	1950	e	e	9,628	19.0	65:0	9,628	19.0	
1890	1955	e	e	14,776	29.8	65:0	14,776	29.8	
1895	1960	e	e	14,608	29.3	65:0	14,608	29.3	
1900	1965	12,068	24.5	14,882	29.2	65:0	14,882	29.2	
1905	1970	11,467	23.4	16,106	32.6	65:0	16,106	32.6	
1910	1975	13,923	29.6	19,866	41.2	65:0	19,866	41.2	
1915	1980	17,315	35.6	23,589	49.7	65:0	23,589	49.7	
1920	1985	17,260	35.3	20,597	41.5	65:0	20,597	41.5	
1925	1990	17,329	35.6	21,567	43.5	65:0	21,567	43.5	
1930	1995	17,067	34.7	21,623	43.3	65:0	21,623	43.3	
1935	2000	16,763	34.3	19,113	38.9	65:0	19,113	38.9	
1940	2005	17,418	34.0	20,899	41.7	65:6	22,058	43.3	
1945	2010	15,966	32.2	20,905	41.2	66:0	21,783	43.3	
1950	2015	16,392	32.6	19,783	39.4	66:0	20,963	40.9	
<b>Scaled high earnings:</b>									
1875	1940	e	e	14,157	17.9	65:0	14,157	17.9	
1880	1945	e	e	10,115	12.7	65:0	10,115	12.7	
1885	1950	e	e	11,729	14.5	65:0	11,729	14.5	
1890	1955	e	e	18,580	24.1	65:0	18,580	24.1	
1895	1960	e	e	18,338	24.9	65:0	18,338	24.9	
1900	1965	13,580	19.7	17,600	24.8	65:0	17,600	24.8	
1905	1970	12,592	19.5	18,715	28.6	65:0	18,715	28.6	

**Table D—Historical Benefits and Replacement Rates for Hypothetical Retired Workers<sup>a</sup>  
in their First Year of Benefit Receipt (Cont.)**

*(based on intermediate assumptions of the 2018 OASDI Trustees Report)*

Year of birth <sup>b</sup>	Year attain age 65	Benefit Amounts for Workers Retiring at 62		Benefit Amounts for Workers Retiring at 65		NRA	Benefit Amounts for Workers Retiring at NRA	
		Wage-indexed 2018 dollars <sup>c</sup>	Percent of career-average earnings <sup>d</sup>	Wage-indexed 2018 dollars <sup>c</sup>	Percent of career-average earnings <sup>d</sup>		Wage-indexed 2018 dollars <sup>c</sup>	Percent of career-average earnings <sup>d</sup>
1910	1975	\$15,560	26.0	\$23,179	37.5	65:0	\$23,179	37.5
1915	1980	20,324	33.2	29,017	48.3	65:0	29,017	48.3
1920	1985	20,720	32.7	24,978	38.6	65:0	24,978	38.6
1925	1990	21,398	32.4	26,801	39.5	65:0	26,801	39.5
1930	1995	21,721	30.7	27,561	38.1	65:0	27,561	38.1
1935	2000	21,790	29.3	24,862	33.1	65:0	24,862	33.1
1940	2005	23,024	28.4	27,597	34.8	65:6	29,141	36.1
1945	2010	21,185	26.7	27,689	34.1	66:0	28,846	35.8
1950	2015	21,766	27.1	26,218	32.7	66:0	27,787	33.8
<b>Steady maximum earnings:</b>								
1875	1940	e	e	21,453	16.4	65:0	21,453	16.4
1880	1945	e	e	13,298	10.1	65:0	13,298	10.1
1885	1950	e	e	12,974	9.7	65:0	12,974	9.7
1890	1955	e	e	18,580	15.0	65:0	18,580	15.0
1895	1960	e	e	18,493	16.1	65:0	18,493	16.1
1900	1965	13,580	13.1	17,600	16.5	65:0	17,600	16.5
1905	1970	12,592	13.5	19,109	20.3	65:0	19,109	20.3
1910	1975	15,560	19.4	23,888	28.7	65:0	23,888	28.7
1915	1980	21,040	27.9	30,842	40.6	65:0	30,842	40.6
1920	1985	21,224	29.9	26,610	34.7	65:0	26,610	34.7
1925	1990	22,449	30.0	29,002	35.7	65:0	29,002	35.7
1930	1995	23,244	27.8	30,287	33.5	65:0	30,287	33.5
1935	2000	23,860	25.9	27,872	28.6	65:0	27,872	28.6
1940	2005	25,780	24.5	31,689	29.3	65:6	33,453	30.2
1945	2010	24,536	22.2	32,740	28.0	66:0	34,384	29.3
1950	2015	25,959	21.9	31,746	26.1	66:0	33,794	27.1

<sup>a</sup> The table uses four hypothetical “scaled” earnings levels and a hypothetical worker who earns the taxable maximum each year. See Actuarial Note Number 2018.3 at [www.ssa.gov/OACT/NOTES/ran3/an2018-3.pdf](http://www.ssa.gov/OACT/NOTES/ran3/an2018-3.pdf) for more information.

<sup>b</sup> Born on January 2nd of year.

<sup>c</sup> Wage-indexed dollar adjustment uses the national average wage indexing series shown in table VI.G6 of the 2018 OASDI Trustees Report.

<sup>d</sup> Computed using nominal dollars.

<sup>e</sup> Benefit at age 62 not available for these years of birth.