ACTUARIAL NOTE
Number 2018.3
June 2018

SOCIAL SECURITY ADMINISTRATION
Office of the Chief Actuary
Baltimore, Maryland

SCALED FACTORS FOR HYPOTHETICAL EARNINGS EXAMPLES UNDER THE 2018 TRUSTEES REPORT ASSUMPTIONS

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1. Introduction

The Office of the Chief Actuary (OCACT) has traditionally used hypothetical earnings patterns to illustrate a range of benefit levels, replacement rates, money's worth measures, and internal rates of return under the Social Security program. OCACT has long used these illustrations to evaluate the program under current law. In addition, in recent years, these hypothetical earnings patterns have formed the basis for illustrating the effects of possible program changes on benefit levels.[1]

OCACT developed *scaled worker* hypothetical earnings patterns for four different career-average earnings levels between 2001 and 2004. These patterns express the hypothetical earnings at each age as a percent of the Social Security Administration's national average wage index (AWI).[2] Each of the four scaled patterns derives from one set of raw scaled factors based on average work and earnings of actual insured workers over their careers. At each age, the raw scaled factor reflects both the average earnings level of those who worked at that age and the percent of insured workers who actually worked at that age.

This note presents the four sets of scaled worker factors recently updated for the hypothetical very low, low, medium, and high lifetime earnings examples used in table V.C7 of the 2018 Trustees Report. Table 6 shows these final scaled factors. In many office publications, OCACT also includes a hypothetical "maximum" earner with earnings equal to the OASDI maximum taxable earnings level for each year. The scaled worker hypothetical earnings patterns and the maximum earner pattern provide a wide range of career taxable earnings levels under the Social Security program.

Prior to the development of *scaled workers*, OCACT generally used hypothetical *steady workers*, who earn a constant percentage of the AWI each year throughout their careers. These hypothetical steady earnings patterns tended to over-represent the proportion of actual lifetime earnings received at younger and older ages, and under-represent the proportion received at prime working ages for most workers.

In developing these four sets of scaled factors, we initially developed one set of *raw scaled factors* using earnings from the Continuous Work History Sample (CWHS). We made a preliminary adjustment to these raw factors for ages 62 and older to account for the select nature of these workers who continue working at such ages. Then, these *preliminary adjusted scaled factors* are further adjusted so that the resulting *career-average earnings levels*[3] were 25 percent, 45 percent, 100 percent, and 160 percent of the AWI for the very low, low, medium, and high hypothetical workers, respectively. We selected these career-average earnings levels in order to provide both a representative range of examples and continuity with previous estimates for hypothetical workers.

Table 1 compares overall earnings for these hypothetical workers to those of actual retiring workers.[4] We use the Average Indexed Monthly Earnings[5] (AIME), which is based on a worker's earnings, as a measure of overall earnings. We develop the distribution of actual workers retiring in 2012 through 2017 from 1 percent samples of Social Security administrative records.

[1] Refer to the February 2, 2011 letter from Stephen C. Goss for an example of this illustrative benefits analysis. This letter is located at: http://www.ssa.gov/OACT/solvency/BowlesSimpsonRivlinDomenici_20110202.pdf.

[2] For more information on the national average wage index, including historical values, see: http://www.ssa.gov/OACT/COLA/AWI.html.

[3] We define *career-average earnings* as the average of the highest 35 years of earnings, indexed for growth in average wages to the year prior to benefit entitlement. See further discussion under subsection 3.b. We introduced the *career-average earnings* concept with the 2002 Trustees Report.

[4] For purposes of this Actuarial Note, "actual retiring workers" are workers who begin receiving their retired worker benefit.

[5] See http://www.ssa.gov/OACT/COLA/Benefits.html#aime for more details on how to calculate the AIME.

Table 1.---Distribution of AIMEs of Actual Workers Retiring in Years 2012 to 2017, Relative to AIMEs for Hypothetical Workers Retiring in 2017

Hypothetical worker[1] (Career-average earnings)[2]	Percent with AIME less than AIME for hypothetical case: All males	All females	Total, all workers	Percent with AIME closest to AIME for hypothetical case[3]: All males	All females	Total, all workers
Very Low ($12,135)	7.7	16.8	12.1	12.0	25.4	18.5
Low ($21,844)	16.1	33.7	24.7	15.8	29.4	22.4
Medium ($48,542)	41.1	72.2	56.3	29.0	30.6	29.8
High ($77,667)	70.8	92.7	81.5	28.2	12.3	20.4
Maximum ($118,704)	100.0	100.0	100.0	14.9	2.3	8.8

[1] See text for definition of hypothetical workers.

[2] Career-average earnings of hypothetical scaled workers retiring at age 62 in 2017. Earnings are wage indexed to 2016 in this calculation.

[3] Rounded values do not necessarily sum to 100 percent. The percentage of workers with AIME values closest to that of the hypothetical maximum worker is expected to decline in future years. This is due to a significant increase in the OASDI maximum taxable earnings, relative to the AWI, in 1981 and a smaller increase in 1990.

Note: Worker distributions include individuals who are dually entitled, or may become dually entitled to a higher benefit in the future, based on another worker's account.

Table 1 shows that 33.7 percent of female workers retiring in 2012 through 2017 have AIMEs below that of a hypothetical low wage scaled worker and that about 41 percent of all workers retiring in 2012 through 2017 have AIMEs closest to that of hypothetical low or very low wage scaled workers. OCACT first included the level of earnings corresponding to the very low scaled factors in 2004 and chose this level of earnings so that approximately one-half of the retirees who were previously best represented by the hypothetical low scaled worker would now be best represented by the hypothetical very low scaled worker.

Dually entitled workers are insured for worker benefits, but are entitled to a larger benefit as a dependent on another worker's account (generally as a spouse or widow(er)) than they are entitled to as a worker beneficiary only. A significant proportion of entitled female workers, especially those with lower earnings, will be entitled to higher benefits as aged spouse or aged widow beneficiaries. If we excluded such dually entitled workers from this analysis, a higher percentage of the remaining workers would have earnings closer to the higher-level hypothetical workers.

2. Developing Raw Scaled Factors from Earnings in the CWHS

The raw scaled factors are developed in three steps:

- Select workers in the CWHS for computing the factors;
- Tabulate the earnings for these workers; and
- Develop the raw scaled factors from the tabulated earnings.

a. Select Workers in the CWHS for Computing the Factors

The CWHS is a 1-percent sample of workers with some OASDI taxable earnings during their lifetime. The Office of Systems updates it annually based on specifications from the Office of Research, Evaluation, and Statistics. We develop the factors in this actuarial note using the CWHS containing earnings data through 2015. The CWHS contains earnings for all workers in the sample. It is important to limit analysis only to workers who are likely either to be eligible for retirement or disability benefits, or to have dependents eligible for survivor benefits. To include only those workers, we used the status of *fully insured*. A worker is considered fully insured if he or she has a total number of quarters of coverage (QCs)[6] at least equal to the number of years after attainment of age 21 through the last year considered in the analysis (in this case 2014). A further requirement is that the worker must have a minimum of 6 QCs. Because a worker achieves *permanent insured* status with 40 QCs, any worker with 40 QCs is fully insured no matter how many years have elapsed since age 21. Any *fully insured* worker is likely to become eligible for a Social Security retirement benefit if he or she survives to eligibility age.

[6] The QC is the basic unit for determining whether a worker is insured for Social Security benefits. In 2018, for example, a worker needed to have $1,320 in covered earnings to obtain a QC. Workers can earn up to 4 QCs per calendar year. Since 1978, the amount of covered earnings required to obtain a QC has been automatically indexed each year with the growth in the AWI. See: http://www.ssa.gov/OACT/COLA/QC.html for more information, including a list of historical QC amounts.

b. Tabulate Earnings for These Workers

The updated CWHS file contains taxable earnings for years 1951 through 2015. Due to posting delays, the earnings for 2015 in this file are less complete than for earlier years and were not used in our analysis. For each of the workers classified as fully insured as of 2014 (based on all earnings after 1950), our analysis includes earnings for the most recent 20-year period (1995 through 2014) for ages 21 and older. We classify earnings by age of worker, and express earnings as their ratio to the AWI for the specific year.

OCACT developed scaled factors taking into account both the variations in earnings by age and the probabilities that workers may have years with zero earnings. The earnings records selected include years with zero earnings, but not years in which the worker was deceased[7] or receiving a retired-worker or disabled-worker Social Security benefit.

c. Develop Raw Scaled Factors from the Tabulated Earnings

To normalize earnings from different years, annual earnings amounts for each year are divided by the AWI for that year. For each fully insured worker, normalized earnings are tabulated by age for each age 21 and older for years 1995 through 2014. The normalized earnings are summed by age and a corresponding worker count is kept. The raw scaled factors are determined by dividing the tabulated sum for each age, including years with zero earnings, by the corresponding numbers of workers. Table 2 displays the results.

Table 2.---Raw Scaled Worker Factors for the 2018 Trustees Report

Age	Percent with Earnings	Average earnings as % of AWI for those with earnings	Factor
21	0.840	0.299	0.251
22	0.848	0.357	0.303
23	0.853	0.443	0.378
24	0.854	0.525	0.448
25	0.854	0.591	0.505
26	0.853	0.650	0.554
27	0.853	0.703	0.600
28	0.854	0.750	0.640
29	0.853	0.792	0.676
30	0.851	0.830	0.707
31	0.851	0.862	0.733
32	0.849	0.890	0.756
33	0.849	0.915	0.777
34	0.849	0.936	0.795
35	0.849	0.956	0.812
36	0.850	0.972	0.826
37	0.851	0.986	0.839
38	0.851	0.998	0.849
39	0.851	1.009	0.860
40	0.852	1.020	0.869
41	0.852	1.030	0.878
42	0.852	1.039	0.885
43	0.852	1.046	0.892
44	0.852	1.054	0.898
45	0.850	1.061	0.902
46	0.848	1.068	0.906
47	0.846	1.073	0.909
48	0.844	1.080	0.911
49	0.840	1.084	0.911
50	0.837	1.087	0.910
51	0.833	1.089	0.907
52	0.828	1.090	0.903
53	0.823	1.088	0.896
54	0.816	1.085	0.886
55	0.810	1.077	0.872
56	0.800	1.062	0.850
57	0.788	1.047	0.825
58	0.776	1.029	0.799
59	0.761	1.012	0.770
60	0.742	0.987	0.732
61	0.715	0.958	0.685
62	0.776	1.095	0.849
63	0.774	1.133	0.877
64	0.758	1.139	0.863

[7] Data concerning worker deaths appears in the CWHS. However, death data in the CWHS does not include all state-reported death data. Therefore, we also used Social Security's NUMIDENT file to identify deaths of individuals in the CWHS. The NUMIDENT file contains, among other things, death data including state-reported deaths.

3. Adjust Raw Scaled Factors to Match Selected Career-Average Earnings Levels

The raw scaled factors are adjusted in three steps:

- Calculate preliminary adjusted scaled factors from the raw scaled factors by overriding the scaled factors at ages 62 through 64;
- Construct the earnings pattern and calculate the career-average earnings for a hypothetical scaled worker using the preliminary adjusted scaled factors; and
- Calculate very low, low, medium, and high *final scaled factors* from the preliminary adjusted scaled factors such that the career-average earnings for these hypothetical workers match the selected percentages of the AWI for the year prior to entitlement (25, 45, 100 and 160 percent).

a. Calculate Preliminary Adjusted Scaled Factors from Raw Scaled Factors

The following values, based on table 2, show that there is an accelerating decline in raw factors at ages 60 and 61, followed by increases at ages 62 and 63:

Age	Raw Scaled Factor	Difference
55	0.872	---
56	0.850	-0.023
57	0.825	-0.024
58	0.799	-0.027
59	0.770	-0.029
60	0.732	-0.038
61	0.685	-0.047
62	0.849	0.165
63	0.877	0.027
64	0.863	-0.014

We do not have definitive information on the reasons for these changes after age 59. However, it seems reasonable to assume that some of the decline in the raw factors at ages 60 and 61 is due to the retirement (total or partial) of some workers before they became entitled to their OASDI retirement benefits at age 62. The increases in the raw factors at ages 62 and 63 may well occur because healthier, higher-wage workers, and workers who have maintained consistent employment at older ages, are more likely to delay entitlement to OASDI benefits until after age 62. Our methodology removed the earnings of many non-workers, low-wage workers, or less-healthy workers from the tabulated group starting at age 62 because they started to receive Social Security retirement benefits.

Due to the differences between the groups of workers represented in data for ages just before versus just after reaching age 62, we develop a smoother set of "adjusted" raw factors for ages 62 through 64. Here we assume that earnings for workers older than age 61 will stay constant in nominal dollars, thus decreasing relative to the AWI.

The preliminary adjusted scaled factors equal the raw scaled factors for ages up to 61. Table 3 calculates factors for ages 62 and older so that earnings in nominal dollars stay constant at the level for age 61. For example, we calculate the preliminary adjusted factor for age 62 by dividing the factor for age 61 by the *ultimate* assumed annual increase in average wages under the intermediate assumptions of the 2018 Trustees Report. Table 3 shows the calculation of the preliminary adjusted scaled factors for ages 62 through 64.

Though it provides an imperfect approximation for all types of workers, we adopted this approach in order to avoid having different scaled factors for workers who become entitled to OASDI benefits at different ages.

Table 3.---Scaled Factor Adjustments Made for Ages After 61

Age	61	62	63	64
Raw scaled factor	0.685	0.849	0.877	0.863
Ultimate AWI increase since age 61, based on 2018 Trustees Report, Intermediate Assumptions	1.000	1.0380	$(1.0380)^2$	$(1.0380)^3$
Preliminary adjusted scaled factor (age 61 raw scaled factor) / (Ultimate AWI increase)	0.685	0.660	0.636	0.612

b. Construct the Earnings Pattern and Calculate the Career-Average Earnings for a Selected Hypothetical Scaled Worker Using the Preliminary Adjusted Scaled Factors

The selected hypothetical scaled worker (referred to as the *1960-born preliminary scaled worker*) was born on January 2, 1960, has earnings from age 21 through 64, and retires at age 65. We calculate earnings for each year by multiplying the preliminary adjusted scaled factor for that age by the AWI value for the corresponding year. This worker turns age 22 in 1982, so the age 22 preliminary adjusted factor of 0.303 is multiplied by the 1982 AWI of $14,531.34 to obtain annual earnings of $4,401.22. Table 4 shows the preliminary adjusted scaled factors, AWI amounts, and corresponding hypothetical earnings for the 1960-born preliminary scaled worker.

The last line of table 4 shows career-average earnings of $55,526 (wage indexed to 2024) for the 1960-born preliminary scaled worker. This is a slightly different calculation than the AIME because (1) earnings are indexed to the year prior to entitlement rather than to two years prior to eligibility, and (2) earnings are averaged on an annual basis instead of a monthly one. For the 1960-born preliminary scaled worker, who retires at age 65 in 2025, the indexing year used to compute career-average earnings is 2024.

Table 4.---Computation of the Earnings Record and the Career-Average Earnings for the 1960-Born Preliminary Scaled Worker Based on the Preliminary Adjusted Scaled Factors and the AWI Series

Year	Age	Preliminary adjusted scaled factors (1)	AWI for current year (2)	Estimated earnings for current year (1)*(2) (3)	Earnings wage indexed to 2024 (4)
1981	21	0.251	$13,773.10	$3,456.15	$16,860.62
1982	22	0.303	14,531.34	4,401.22	20,350.73
1983	23	0.378	15,239.24	5,763.27	25,410.79
1984	24	0.448	16,135.07	7,231.63	30,114.66
1985	25	0.505	16,822.51	8,493.20	33,922.91
1986	26	0.554	17,321.82	9,604.19	37,254.59
1987	27	0.600	18,426.51	11,050.40	40,294.66
1988	28	0.640	19,334.04	12,379.84	43,023.43
1989	29	0.676	20,099.55	13,582.35	45,404.74
1990	30	0.707	21,027.98	14,860.41	47,483.84
1991	31	0.733	21,811.60	15,989.39	49,255.75
1992	32	0.756	22,935.42	17,339.57	50,797.72
1993	33	0.777	23,132.67	17,968.16	52,190.38
1994	34	0.795	23,753.53	18,889.97	53,433.76
1995	35	0.812	24,705.66	20,055.51	54,544.36
1996	36	0.826	25,913.90	21,406.31	55,503.66
1997	37	0.839	27,426.00	23,003.61	56,356.77
1998	38	0.849	28,861.44	24,510.49	57,061.95
1999	39	0.860	30,469.84	26,188.98	57,751.20
2000	40	0.869	32,154.82	27,941.67	58,387.36
2001	41	0.878	32,921.92	28,898.60	58,979.93
2002	42	0.885	33,252.09	29,444.36	59,497.10
2003	43	0.892	34,064.95	30,378.07	59,919.06
2004	44	0.898	35,648.55	32,007.62	60,328.72
2005	45	0.902	36,952.94	33,332.00	60,607.30
2006	46	0.906	38,651.41	35,009.02	60,859.34
2007	47	0.909	40,405.48	36,710.60	61,046.93
2008	48	0.911	41,334.97	37,640.00	61,184.95
2009	49	0.911	40,711.61	37,094.95	61,222.22
2010	50	0.910	41,673.83	37,935.23	61,163.44
2011	51	0.907	42,979.61	39,001.07	60,971.47
2012	52	0.903	44,321.67	40,008.11	60,651.91
2013	53	0.896	44,888.16	40,206.73	60,183.79
2014	54	0.886	46,481.52	41,182.72	59,531.56
2015	55	0.872	48,098.63	41,960.52	58,616.62
2016	56	0.850	48,642.15	41,339.07	57,103.21
2017	57	0.825	50,020.69	41,289.13	55,462.40
2018	58	0.799	51,894.47	41,453.04	53,672.01
2019	59	0.770	54,076.92	41,613.38	51,705.13
2020	60	0.732	56,534.16	41,381.82	49,182.57
2021	61	0.685	59,089.48	40,466.84	46,015.24
2022	62	0.660	61,705.86	40,711.60	44,330.68
2023	63	0.636	64,405.95	40,937.41	42,707.78
2024	64	0.612	67,191.23	41,144.30	41,144.30
Career-Average Earnings……					$55,526.00

Note: We base career-average earnings on the highest 35 years of indexed earnings (column 4). Years 1981 through 1987 and 2023 through 2024 are excluded because they are not among the highest 35 years of indexed earnings.

c. Calculate Very Low, Low, Medium, and High Final Scaled Factors from the Preliminary Adjusted Scaled Factors such that the Career-Average Earnings for These Selected Hypothetical Workers Match the Selected Percentages of the AWI in the Year Prior to Entitlement

The selected career-average earnings level for the medium scaled worker is the AWI in the year prior to entitlement. Similarly, the selected career-average earnings levels for the very low, low, and high scaled workers are 25 percent, 45 percent and 160 percent of the AWI in the year prior to entitlement, respectively. As noted earlier, the career-average earnings for the 1960-born preliminary scaled worker equals $55,526, wage indexed to 2024 (see table 4). By comparison, the average wage index for 2024 is $67,191.23.[8] Corresponding career-average earnings levels for a very low, low, and high earner are $16,798, $30,236, and $107,506, respectively. Table 5 summarizes this information, and provides the ratio of the selected career-average earnings levels to the career-average earnings for the 1960-born preliminary scaled worker.

A primary reason for choosing the year prior to entitlement as the indexing year in computing the career-average earnings is to maintain consistency with prior hypothetical steady workers.[9] For example, career-average earnings provide a reasonable denominator for replacement rate calculations that allow hypothetical scaled worker replacement rates to maintain consistency with the prior hypothetical steady worker replacement rates.

[8] The projected AWI value for 2024 appears in the 2018 Trustees Report. See http://www.ssa.gov/OACT/TR/2018/lr6g6.html.

[9] Prior to 2001, the hypothetical workers used were all "steady" workers. Today, we retain only the "steady maximum" worker. "Steady" workers were assumed to work beginning at age 22 until retirement, death, or disability, and to have a steady amount of earnings relative to the AWI each year. For example, the "steady average" worker earns the AWI for every working year. Similarly, the "steady low" worker earns 45 percent of the AWI for every working year, and the "steady high" worker earns 160 percent of the AWI for every working year.

Table 5.---Table of Key Ratios Used to Finalize Scaled Worker Calculations

Case	Selected career-average earnings levels for hypothetical scaled workers (1)	Career-average earnings of the 1960-born preliminary selected scaled worker (2)	Ratio (1) / (2) (3)
Very low earner ……..	$16,798	$55,526	0.303
Low earner ……..	30,236	55,526	0.545
Medium earner ……	67,191	55,526	1.210
High earner …….	107,506	55,526	1.936

The last step is to apply the ratios from table 5 to the preliminary adjusted scaled factors. This step requires four separate calculations, one each for the very low, low, medium, and high scaled worker cases. For example, we determine the scaled factors for the hypothetical medium scaled worker by multiplying:

- The preliminary adjusted scaled factors for ages 21 through 64, by
- The ratio of 1.210 shown in tables 5 and 6.

Table 6 shows the calculation of the final scaled factors, combining the preliminary adjusted scaled factors with the adjustment factors.

Table 6.---Calculation of Final Scaled Factors

		Final Scaled Factors by Earnings Level			
Adjustment Factors…….		Very low	Low	Medium	High
Age	Preliminary adjusted scaled factors	0.303	0.545	1.210	1.936
21	0.251	0.076	0.137	0.304	0.486
22	0.303	0.092	0.165	0.367	0.586
23	0.378	0.114	0.206	0.458	0.732
24	0.448	0.136	0.244	0.542	0.868
25	0.505	0.153	0.275	0.611	0.977
26	0.554	0.168	0.302	0.671	1.074
27	0.600	0.181	0.327	0.726	1.161
28	0.640	0.194	0.349	0.775	1.240
29	0.676	0.204	0.368	0.818	1.308
30	0.707	0.214	0.385	0.855	1.368
31	0.733	0.222	0.399	0.887	1.419
32	0.756	0.229	0.412	0.915	1.464
33	0.777	0.235	0.423	0.940	1.504
34	0.795	0.241	0.433	0.962	1.540
35	0.812	0.246	0.442	0.982	1.572
36	0.826	0.250	0.450	1.000	1.599
37	0.839	0.254	0.457	1.015	1.624
38	0.849	0.257	0.462	1.028	1.644
39	0.860	0.260	0.468	1.040	1.664
40	0.869	0.263	0.473	1.052	1.682
41	0.878	0.266	0.478	1.062	1.700
42	0.885	0.268	0.482	1.072	1.714
43	0.892	0.270	0.486	1.079	1.727
44	0.898	0.272	0.489	1.086	1.738
45	0.902	0.273	0.491	1.092	1.746
46	0.906	0.274	0.493	1.096	1.754
47	0.909	0.275	0.495	1.099	1.759
48	0.911	0.275	0.496	1.102	1.763
49	0.911	0.276	0.496	1.103	1.764

Table 6.---Calculation of Final Scaled Factors (Cont.)

Adjustment Factors…….		Final Scaled Factors by Earnings Level			
		Very low	Low	Medium	High
Age	Preliminary adjusted scaled factors	0.303	0.545	1.210	1.936
50	0.910	0.275	0.496	1.102	1.762
51	0.907	0.275	0.494	1.098	1.757
52	0.903	0.273	0.492	1.092	1.748
53	0.896	0.271	0.488	1.084	1.734
54	0.886	0.268	0.482	1.072	1.715
55	0.872	0.264	0.475	1.056	1.689
56	0.850	0.257	0.463	1.028	1.645
57	0.825	0.250	0.449	0.999	1.598
58	0.799	0.242	0.435	0.967	1.547
59	0.770	0.233	0.419	0.931	1.490
60	0.732	0.221	0.399	0.886	1.417
61	0.685	0.207	0.373	0.829	1.326
62	0.660	0.200	0.359	0.798	1.277
63	0.636	0.192	0.346	0.769	1.231
64	0.612	0.185	0.333	0.741	1.186

4. Developing Hypothetical Worker Earnings from Factors

Given a year of birth, and an earnings level for scaled workers, classified as either very low, low, medium, or high, one can obtain annual earnings by multiplying the relevant set of scaled factors by the AWIs in the corresponding years. For example, consider a low earnings worker born in 1970. To determine earnings for this worker at age 22, multiply the scaled factor for the low scaled worker at age 22 by the AWI in 1992, the year in which the worker turns 22. Because the hypothetical workers are born in January, a year of age corresponds to a calendar year. Therefore, a worker born on January 2, 1970 would be age 22 throughout 1992. In this way, one can develop a series of very low, low, medium, and high scaled earnings for any age and hypothetical year of birth. Table 7 carries out the calculation of hypothetical scaled worker earnings for high earnings workers for the selected years of birth 1930, 1949, and 1997.

Table 7.---Example: Developing Earnings for the Hypothetical High Earners Born in 1930, 1949, and 1997

Year of birth…….		1930		1949		1997	
Age	Final scaled factors for high earner (1)	AWI (2)	Age-scaled earnings (1)*(2) (3)	AWI (4)	Age-scaled earnings (1)*(4) (5)	AWI (6)	Age-scaled earnings (1)*(6) (7)
21	0.486	$2,799.16	$1,359.96	$6,186.24	$3,005.55	$51,894.47	$25,212.65
22	0.586	2,973.32	1,743.59	6,497.08	3,809.98	54,076.92	31,711.43
23	0.732	3,139.44	2,298.76	7,133.80	5,223.51	56,534.16	41,395.45
24	0.868	3,155.64	2,738.35	7,580.16	6,577.78	59,089.48	51,275.68
25	0.977	3,301.44	3,227.16	8,030.76	7,850.07	61,705.86	60,317.46
26	1.074	3,532.36	3,792.00	8,630.92	9,265.32	64,405.95	69,139.98
27	1.161	3,641.72	4,228.41	9,226.48	10,712.90	67,191.23	78,015.98
28	1.240	3,673.80	4,554.53	9,779.44	12,123.90	70,057.16	86,852.24
29	1.308	3,855.80	5,044.75	10,556.03	13,811.01	73,003.92	95,514.87
30	1.368	4,007.12	5,482.79	11,479.46	15,706.91	75,908.24	103,862.40
31	1.419	4,086.76	5,800.42	12,513.46	17,760.61	78,871.02	111,943.25
32	1.464	4,291.40	6,281.55	13,773.10	20,160.41	81,935.26	119,932.97
33	1.504	4,396.64	6,612.03	14,531.34	21,853.44	85,114.16	128,001.75
34	1.540	4,576.32	7,046.21	15,239.24	23,464.03	88,423.72	136,147.01
35	1.572	4,658.72	7,322.17	16,135.07	25,359.71	91,865.72	144,386.62
36	1.599	4,938.36	7,898.20	16,822.51	26,905.18	95,443.08	152,647.46
37	1.624	5,213.44	8,466.31	17,321.82	28,129.58	99,159.38	161,028.80
38	1.644	5,571.76	9,161.42	18,426.51	30,297.95	103,003.87	169,365.03
39	1.664	5,893.76	9,807.92	19,334.04	32,174.16	106,986.22	178,037.89
40	1.682	6,186.24	10,408.05	20,099.55	33,816.51	111,105.98	186,930.39
41	1.700	6,497.08	11,041.96	21,027.98	35,737.60	115,375.42	196,083.52
42	1.714	7,133.80	12,230.39	21,811.60	37,394.43	119,798.57	205,386.07
43	1.727	7,580.16	13,087.81	22,935.42	39,600.01	124,375.91	214,745.87
44	1.738	8,030.76	13,960.61	23,132.67	40,213.65	129,111.72	224,446.78
45	1.746	8,630.92	15,073.20	23,753.53	41,483.62	134,017.14	234,050.11
46	1.754	9,226.48	16,180.31	24,705.66	43,325.86	139,109.55	243,953.87
47	1.759	9,779.44	17,202.89	25,913.90	45,584.81	144,403.35	254,018.11
48	1.763	10,556.03	18,610.96	27,426.00	48,353.80	149,896.71	264,277.52
49	1.764	11,479.46	20,251.36	28,861.44	50,915.58	155,607.70	274,513.57
50	1.762	12,513.46	22,054.28	30,469.84	53,701.41	161,554.36	284,730.61
51	1.757	13,773.10	24,198.14	32,154.82	56,493.22	167,746.28	294,715.63
52	1.748	14,531.34	25,396.49	32,921.92	57,537.80	174,188.76	304,430.53
53	1.734	15,239.24	26,428.13	33,252.09	57,666.30	180,862.31	313,654.26
54	1.715	16,135.07	27,678.45	34,064.95	58,435.75	187,789.86	322,138.79
55	1.689	16,822.51	28,414.18	35,648.55	60,212.44	194,990.13	329,349.50
56	1.645	17,321.82	28,502.15	36,952.94	60,804.13	202,469.76	333,153.40
57	1.598	18,426.51	29,448.64	38,651.41	61,771.42	210,225.13	335,974.91
58	1.547	19,334.04	29,901.58	40,405.48	62,490.18	218,269.08	337,569.92
59	1.490	20,099.55	29,946.33	41,334.97	61,584.99	226,619.63	337,640.67
60	1.417	21,027.98	29,801.10	40,711.61	57,696.98	235,289.71	333,455.39
61	1.326	21,811.60	28,920.97	41,673.83	55,257.18	244,296.02	323,922.93
62	1.277	22,935.42	29,297.78	42,979.61	54,902.29	253,651.31	324,014.96
63	1.231	23,132.67	28,467.96	44,321.67	54,543.97	263,354.75	324,094.57
64	1.186	23,753.53	28,161.86	44,888.16	53,218.80	273,403.77	324,143.82