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PRIMARY INSURANCE AMOUNT FOR AN AVERAGE MALE WORKER

by *Bertram M. Kestenbaum*
Office of the Actuary

Introduction

The Office of the Actuary regularly computes the Primary Insurance Amount (PIA) upon entitlement to retirement benefits, and related measures as well, for hypothetical workers with high, low, and medium earnings. Specifically, these are workers who have earned, respectively, each year since 1951, (a) the maximum amount taxable for Social Security purposes, (b) the official minimum wage, and (c) the "average" wage in the series used to index or adjust various Social Security program parameters, such as the bend points in the PIA formula and the maximum tax and benefit base. For instance, the PIA's (after the June cost-of-living increase) of the three worker types for entitlement at age 62 in 1982 have been computed to be \$637.30, \$345.10, and \$502.70, respectively.

This note examines how representative the third hypothetical worker is of a real cohort of male workers. For reasons given in the following paragraphs, it would seem that male workers ought to have, on the average, a higher PIA than the hypothetical average worker; yet we have found the opposite to be true, at least with respect to mean PIA. We will show, however, that this last-mentioned finding is due to the poor performance of the mean as a measure of central tendency in a heavily-skewed distribution, and that, in fact, the expected relationship holds when the comparison uses statistics other than the mean.

There are two reasons for expecting male workers to have a higher PIA on average than the hypothetical worker with annual earnings equal to the official wage-indexing series. First, average wages for indexing are computed over all workers, women as well as men, the very young and the very old. A somewhat offsetting factor is that the official average is higher than the true average: as described in Actuarial Note No. 103 (*Average Wages for Indexing under the Social Security Act and the Automatic Determinations for 1979-81*, by Eli N. Donkar), the series is based on first quarter wages for 1951-77 multiplied by 4, the effects of which are to essentially include earnings above the taxable maximum and to ignore the presumably lower earnings of part-year workers who miss the first quarter entirely.

Second, even if the average male worker has earnings similar to his hypothetical counterpart, there is reason to expect his PIA to be higher. There will no doubt be

some variability in his earnings, so that he—unlike the hypothetical worker who steadily earns the official average—will profit from the provision in the PIA formula to drop the lowest 5 years of indexed earnings.

The sample

For research and statistical purposes the Social Security Administration maintains a 1-in-100 sample of earnings records, which is presently complete through 1981. From it we selected records for men born in 1920 who, according to the Master Beneficiary Record as it stood in June 1982, were at that time old-age beneficiaries in current payment status. We obtained a sample of 1,226 persons, with a mean PIA of \$485.56—less than the hypothetical average worker's by about \$17.

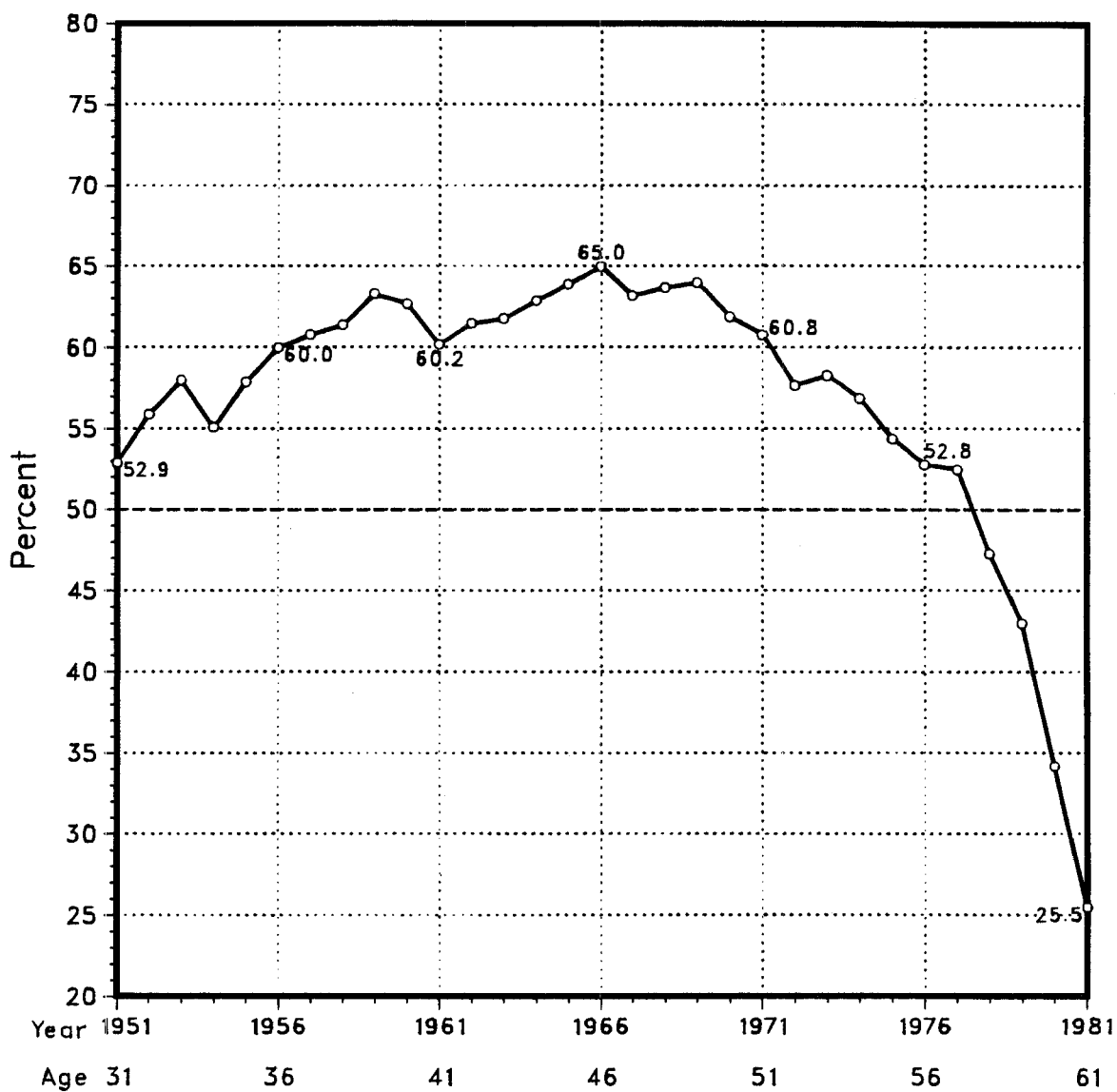
PIA's in the sample ranged from \$37.60 to \$659.50. The minimum benefit provision does not apply to this cohort, having been eliminated prospectively by the Social Security Amendments of 1981. Five persons had PIA's larger than the \$637.30 of the steady maximum earner; presumably these persons had periods of disability on account of which fewer than 26 years of earnings were used in computing PIA. About 94 percent of the 1,226 PIA's were based on average indexed monthly post-1950 earnings (AIME), the remainder on various special PIA formulas.

Because early retirement benefits are not payable until the month after attainment of age 62, nearly all the 1,226 were born between January and May 1920. The few born in June 1920 presumably were born June 1st: for Social Security purposes a person's date of birth is taken to be the day before he was born.

Findings

One way to compare the earnings of the sample, on the average, with the hypothetical worker's is to examine how frequently an earnings amount exceeds the official average in that particular year. This gives rise to 1,226 persons \times 31 years = 38,006 comparisons, among which, it turns out, the actual earnings were higher 21,574 times, or 57 percent of the time. The pattern by age shown in figure 1 is an expected one: the likelihood that actual earnings exceed the official average declines as the cohort approaches age 61, and more and more of its members either retire or decrease their work effort.

Figure 1.—Percent with earnings greater than average wage indexing series, by year and age for men born in 1920 and retiring in the first half of 1982, based on the 1-percent Continuous Work History Sample



Consider three persons, one with all 31 years with above-average earnings, the other two each with 10 such years. Taken together, earnings exceed the average in 51 of the 93 person-years; yet two-thirds of the group probably have PIA's less than the hypothetical worker's. This little example suggests that we concern ourselves with the frequency of above-average earnings per individual. Figure 2 shows that 39 percent of the cohort have 15 or fewer years among the 31 with above-average earnings, so that 61 percent of the cohort have 16 or more years with above-average earnings. Furthermore, given the provision for 5 drop years, leaving 26 years in the benefit computation, our attention is more properly fixed on the proportions with 13 or 14 above-average years, which are even higher.

The distribution of PIA's in the sample is shown in figure 3. The skewness of the distribution explains why the mean is not a satisfactory measure of central tendency. Indeed, the median PIA is \$541.55—more than the

hypothetical worker's \$502.70 by almost \$40. Also, the fraction of the cohort with PIA greater than \$502.70 is 0.59.

Conclusion

The hypothetical workers used in the calculations of the Office of the Actuary are for illustrative persons only and are not meant to be typical cases. For anyone curious of how the hypothetical worker with earnings equal to the wage-indexing series compares with the average result from an actual group of male workers, this Note shows that the earnings and PIA's of male workers are higher, on the average, than those of the hypothetical worker. Almost 60 percent have PIA's greater than the hypothetical figure of \$502.70, and the median for the group is almost \$40 higher. While the mean for the group is lower than \$502.70, the mean is not a very relevant statistic for this type of comparison.

Figure 2.—Percent with earnings greater than average wage indexing series in at most n years (n=0,1,2,...,31) for men born in 1920 and retiring in first half of 1982, based on the 1-percent Continuous Work History Sample

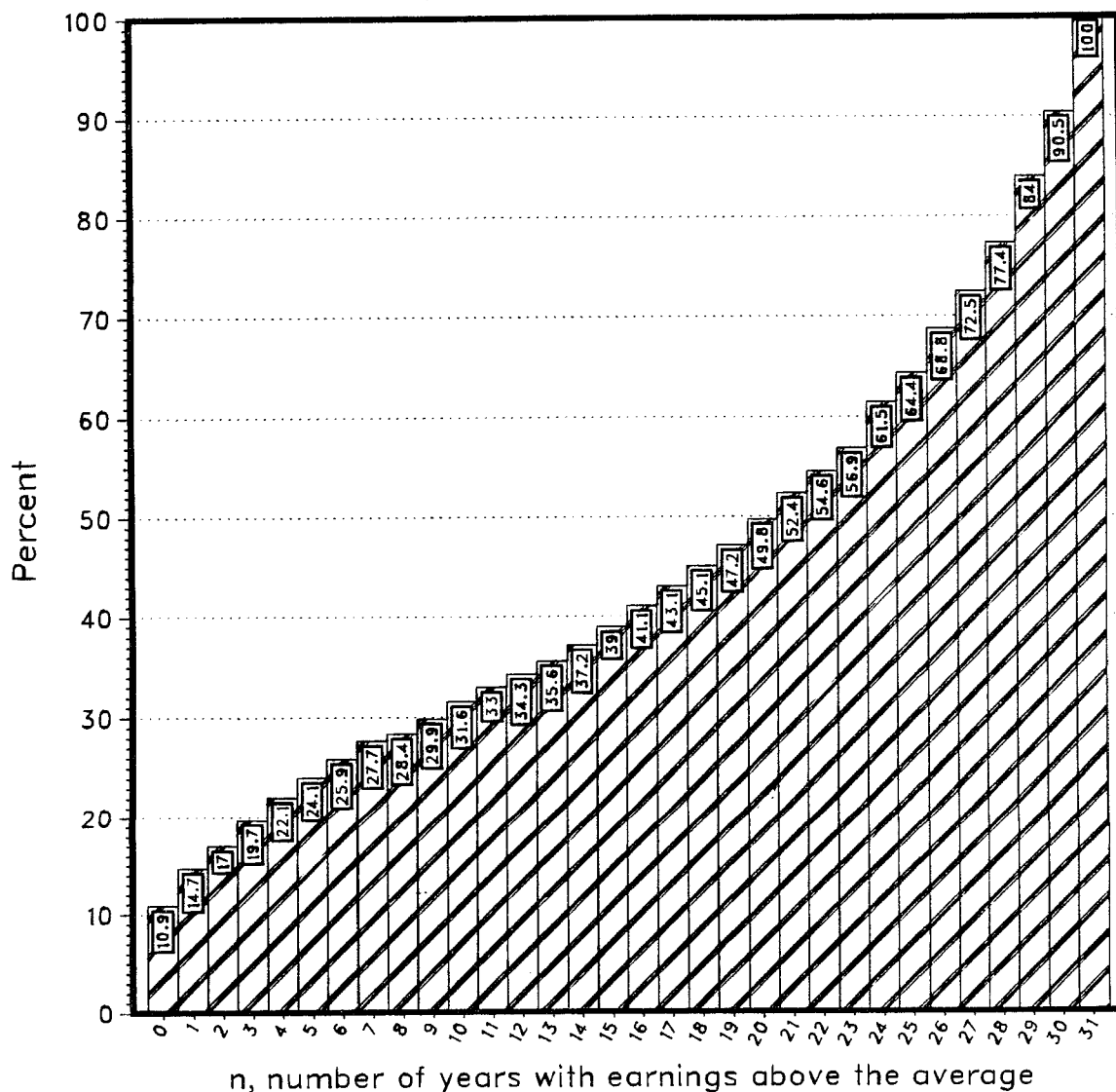


Figure 3.—Percent in each PIA class for men born in 1920 and retiring in the first half of 1982, based on the 1-percent Continuous Work History Sample

