Sex-Specific Equivalent Retirement Ages: 1940–2050

by Marilyn M. McMillen*

This article presents four measures of equivalent retirement ages to be considered when analyzing retirement age issues. Insofar as previous research reveals significant sex differences in life expectancy at the older ages, the analysis here extends the question of equity when increased retirement age is considered by examining each measure separately for men and for women. The measures are applied to data from 1940 to 2050. In the first two measures, all improvements in life expectancy at retirement are assigned to the labor force ages; in the second two measures, increases in life expectancy are shared between expected time in the labor force and expected time in retirement. In each case, the increase in life expectancy at retirement was measured both as the expected years in retirement among those surviving to retirement and as the expected years in retirement among all persons entering the labor force. The findings have different implications in terms of equity when an increased retirement age is considered. The article concludes that although it may not be appropriate to establish separate retirement age schedules for men and women, an awareness of existing life expectancy differences between the sexes should help in selecting a middle-range choice.

Improvements in life expectancies result in a growing retirement age population. An awareness of these changes and the related financial problems facing the Social Security system caused Congress to change the age of eligibility for unreduced retirement benefits. The Social Security Amendments of 1983 (Public Law 98-21) raised the age for full retirement benefits from 65 to 66 for those reaching age 62 in 2000-05 and from 66 to 67 for those reaching age 62 in 2017-22. (The increase is to be phased in by 2 months per year during each time period.) This gradual phasein is similar to recommendations made by the National Commission on Social Security (1981), the President's Commission on Pension Policy (1981), and the National Commission on Social Security Reform (1983).

The suggestion that the age of retirement should be changed to reflect changes in life expectancy is not new. More than 10 years ago, A. J. Jaffe raised the issue of increasing the retirement age as life expectancy at the older ages goes up.[1] In 1975, Norman B. Ryder proposed a new index of old age. He suggested that "it would seem sensible to consider the measurement of age not in terms of years elapsed since birth but rather in terms of the number of years of life remaining until death."[2] Thus, instead of keeping a fixed age, such as 65, for retirement or entry into old age, he proposed the selection of an arbitrary length of time in retirement, such as 10 years.

This notion has also appeared in research done by the Social Security Administration.[3] In their work, rather

* McMillen was formerly with the Division of Retirement and Survivors Studies, Office of Retirement and Survivors Insurance, Social Security Administration. She is currently with the Division of Vital Statistics, National Center for Health Statistics.

[1] A.J. Jaffe, "The Retirement Dilemma," **Industrial Gerontology**, summer 1972, pages 1-88.

[2] Norman B. Ryder, "Note on Stationary Populations," **Population Index**, January 1975, page 16.

[3] Francisco R. Bayo and Joseph F. Faber, **Equivalent Retirement Ages: 1940-2050** (Actuarial Note No. 105), Office of the Actuary, Social Security Administration, June 1981.

than study changes in time spent in retirement, Bayo and Faber computed estimates of the equivalent retirement ages that would be required to hold constant the time spent in retirement. In so doing, they acknowledged that many people would consider it unfair to expect all the years of life expectancy gained since 1940 to be spent in the labor force; however, they suggested that it is equally unreasonable to expect that all those years would be spent in leisure. Thus, they employed changes in mortality to compute four measures of equivalent retirement ages that "will be equitable to future retirees relative to past or present retirees."[4] These measures yield variable retirement ages that hold constant some period of time in retirement or some ratio of time in retirement to time in work.

In their analysis, Bayo and Faber estimated life tables for the total resident population at 5-year intervals from 1940 to 2000, and for 2025 and 2050. Life tables provide statistical information on the survival of a population by age from birth through death. Using these life tables, they computed equivalent retirement ages for each of the four measures.

In the first two measures, all of the increases in life expectancy at retirement ages were assigned to the labor force ages; in the second two measures, the increases in life expectancy were shared between expected time in the labor force and expected time in retirement. In each of these cases, the increase in life expectancy at retirement age was measured both as the expected years in retirement among those surviving to retirement and as the expected years in retirement among all persons entering the labor force, assuming a fixed age 20 entry into the labor force.

These measures provide an interesting approach from which to analyze the retirement age issue. Each measure gives a different perspective of what is equitable. Insofar as previous research reveals significant sex differences in life expectancy at the older ages, the analysis in this article extends the question of equity by examining each measure separately for men and women.[5]

Data

The life tables provided by the Office of the Actuary are based on data from the National Center for Health Statistics (NCHS), the Bureau of the Census, and the Health Care Financing Administration. Death rates, by age group and sex for the U.S. resident population aged 0-64, were computed using annual tabulations of death records received by NCHS in the numerators and annual Census estimates of the resident population in the denominators. Both numerators and denominators for death rates for the population aged 65 or older are drawn from Medicare data; the fact that the numerators and denominators for the older ages are from the same source reduces the problems of noncomparability that exist in the death rates for the younger ages. For years before the Medicare program, death rates for the age 65 or older group were developed "by retrospective applications of vital statistics trends to Medicare data for 1968."[6] In addition to these data on actual death rates for 1940-75, mortality projections based on the intermediate assumptions of the 1981 Trustees Report for the Old-Age, Survivors, and Disability Insurance program were used to develop death rates for 1980-2050.[7]

The resulting death rates provided a basis for the computation of life tables, which were then used to compute various measures of equivalent retirement ages. However, changes over time in the methods used to construct published NCHS life tables could serve to confound real changes in the life-table-based measures of equivalent retirement ages. Thus, the Office of the Actuary used one consistent set of procedures to produce a new set of sex-specific life tables for 1940-2050. The procedures used were similar to those employed for the 1959-61 decennial life tables, with some adjustments at the youngest and oldest ages.

Measuring Equivalence

A set of decisions must be made to define measures of equivalent retirement ages (Here, equivalent retirement ages are the ages that would be required to hold the time spent in retirement constant over time, taking increased life expectancy into consideration.) Specifically, the decisions central to the measurement of equivalent retirement ages are a determination of expected time in retirement, the point of comparison for equivalence, and the selection of the base year. Regarding the first decision, the time spent in retirement may be defined in two ways: the expected number of years spent in retirement, or the ratio of the expected number of years spent in retirement to the expected number of years in the labor force. Previous research has illustrated the existence of significant sex differences in life expectancy at the older ages; in this analysis the expected time in retirement (defined both ways) is computed separately for men and women.

The second decision concerns the question of when in the life cycle the measurement of equivalence should be made. Two obvious choices exist. Specifically, the expected years of life at entry into the labor force includes both those persons who will ultimately survive to retire and those persons who enter the labor force but die be-

[4] **Ibid.**, page 1.

[5] In order to maintain comparability with data employed in the Actuarial Note, this article is based on sex-specific life tables provided by the Office of the Actuary. Ideally, this analysis should be done by race and sex, but data are not available by race.

[6] **Equivalent Retirement Ages: 1940–2050**, page 2.

[7] **Ibid.**

fore reaching retirement age. Measurement at retirement age includes only the experiences of those individuals surviving to retirement age. The actuaries computed estimates based on both measurements of equivalence; in the case of age of entry into the labor force they used an assumption of an age 20 entry. Again, each of these measures is computed separately for men and for women.[8]

Finally, deciding what base year to use as a standard against which to measure equivalence resulted in a range of computations based on decennial data for 1940–80. The selection of 1940 would set the standard at the inception of monthly benefit payments, acknowledging the specific decision to establish the retirement age at 65 when the Social Security program started. Another alternative would restore the amount of time spent in retirement and the retirement to labor force ratio to some earlier, lower level, such as 1960—but not necessarily to the levels prevailing when the Social Security system began. Similarly, selection of 1980 would fix the measures at current levels.[9]

These decisions result in a set of four measures of retirement equivalence. However, before examining the specifics of the computation formulas for these measures, two assumptions implicit in this analysis should be made explicit. The first assumption concerns availability for work and has two aspects: (1) In the preretirement years, time in the labor force ages is based on data for the entire population, assuming that everyone of working age is actually working, and (2) in the postretirement years, equivalent retirement ages increase as life expectancy improves, it is assumed that health status does not deteriorate, and hence the availability for work also increases.

The second assumption is that everyone retires at age 65 under the current system. This concept ignores the issue of early retirement and the complexities involved in the retirement decision process. Although in reality the decision to retire and the age at retirement are affected by health status, spouse's income level, and the pre- and postretirement income of the individual, the measures in this analysis are based on an assumed age 65 retirement. Nonetheless, with these caveats in mind, such measures of equivalent retirement ages provide a means of exploring alternative ways of defining retirement age.

The first, and most simplistic, measure is taken at the time of retirement with the expected number of years in retirement—that is, the retirement expectancy—as the characteristic of the measurement

$$A = e_r$$

In order to apply this measure, the average life expectancy (e_r) at age 65 in the base year must be determined ($r = 65$, age at retirement). For each subsequent year, interpolation procedures are employed to determine the exact age at which the average life expectancy for that year equals the average life expectancy at retirement in the base year. Thus, the amount of time in retirement is held constant at the level observed in the base year. All improvements in the life expectancy at the retirement ages are assigned to the labor force ages.

The following tabulation shows that in 1940, for example, the expected years of retirement (that is, the average life expectancy at age 65) for men was 11.99 years. By 1975, men at age 68 had a life expectancy of 12.05 years and at age 69 they had a life expectancy of 11.52 years. Interpolation between these ages results in the conclusion that men aged 68 years and 1 month in 1975 could expect to live exactly the same number of years as men aged 65 in 1940.

Measure	Men	Women
Expected number of years in retirement:		
At retirement, age 65 in—		
1940	11.99	13.67
1960	12.96	16.13
1980	14.89	18.66
At entry into labor force, age 65 in—		
1940	7.28	9.60
1960	8.67	13.05
1980	10.28	15.84
Expected ratio of years in retirement to years in labor force:		
At retirement, age 65 in—		
1940	0.266	0.304
1960	.288	.358
1980	.317	.415
At entry into labor force, age 65 in—		
1940	.184	.235
1960	.211	.305
1980	.248	.366

The second measure is based on the time of entry into the labor force, assumed to be age 20. Again, the retirement expectancy is the characteristic of measurement

$$B = (l_r/l_{20})\, e_r$$

This measure uses the ratio of the number of persons in the life table population who reach retirement age (l_r) to

[8] In addition to assuming an age 20 entry into the labor force, an estimate of the actual average age of entry into the labor force in each year was employed. A comparison of the measures computed in these two ways revealed inconsequential differences. For simplicity and to preserve comparability with the summary measures published in the Actuarial Note, sex-specific measures computed with the age 20 assumption are presented herein.

[9] By using 1940 as a base year, it is assumed that if a population of individuals were in their lifetimes subjected to the mortality rates observed in 1940 they would experience the time in retirement and time in work indicated by the 1940 life table. Similarly, each subsequent life table population shares the same definition; so that, if over their lifetimes men were subject to the mortality schedule observed in 1945, retirement at 65 years and 8 months would be equivalent to an age 65 retirement in 1940. This interpretation applies to each subsequent year with data through 1975 based on observed mortality schedules for the entire range of ages. After that point, the interpretations are the same, but the underlying mortality schedules are based on projections. A shift from a different year, say 1960, and equivalent retirement ages for subsequent years (1965 on) are then keyed on that new year (that is, data for earlier time points, such as 1940 and 1945, are ignored). Sex-specific measures were also computed for the intermediate base years of 1950 and 1970. However, for clarity of presentation they are not displayed.

the number of persons in the life table population who survive until entry into the labor force at age 20 (l_{20}). For the base year, this ratio represents the probability of surviving from an age 20 entry into the labor force to age 65. When the ratio is multiplied by the number of expected years of life in retirement, it yields an estimate of expected years of life in retirement for all persons entering the labor force, not just those surviving to retirement. For each year following the base year, interpolation procedures are applied to find the exact age when expected years in retirement for all persons entering the labor force equal that of the base year. This procedure holds the retirement expectancy constant over time. Again, all improvements in life expectancy are assigned to the labor force ages.

For the 1940 example, the ratio is the 55.253 percent of men who survived until age 65 to the 91.019 percent who survived to age 20. Thus, the probability of a man surviving from age 20 to age 65 in 1940 was 60.70 percent. This probability is multiplied by the 11.99-year average life expectancy for men aged 65 in 1940 and yields 7 years and 3 months as the expected number of years of retirement for all men entering the labor force at age 20. By 1975, this expected years of retirement value was bracketed by the values for ages 68 and 69. Interpolation between these ages reveals that a retirement age of 68 years and 6 months in 1975 is the equivalent retirement age for this measure when 1940 is used as the base year.

The third measure is tied to the time of retirement, and the characteristic of measurement is the ratio of retirement expectancy to total work expectancy

$$C = e_r/(r - 20)$$

The number of expected years in retirement (e_r) is divided by the number of years persons surviving to retirement age (r) spend in the labor force, assuming an age 20 entry. For the base year, this measure then becomes the life expectancy at age 65 expressed as a ratio to the 45 years spent in the labor force by persons surviving to retirement at age 65 (that is, 65 minus 20).

The ratio from the base year is used as a standard. In subsequent years the exact equivalent retirement age is interpolated between the ages that yield ratios bracketing the base year ratio. This measure holds the ratio of time in retirement to the time in the labor force constant for all persons surviving to retirement age. Improvements in life expectancy at the retirement ages are proportionately allocated between the time in retirement and time in the labor force.

Measure A has shown that in 1940 the life expectancy for men at age 65 was 11.99 years. This value divided by 45 (years spent in the labor force) yields a ratio of 0.266. Thus, using 1940 as the base year, men reaching age 65 could expect to spend just over 25 percent of their adult life in retirement. In 1970, the ratio is between the 0.274 value observed for age 66 and the 0.257 value observed for age 67. An interpolation between these ages shows that the equivalent retirement age for 1970 was 66 years and 6 months.

The fourth measure uses entry into the labor force at age 20 as the point of measurement. The ratio of retirement expectancy to total work expectancy is the characteristic of measurement

$$D = [(l_r/l_{20})\, e_r] / [e_{20} - (l_r/l_{20})\, e_r]$$

The numerator is the expected number of years in retirement for all persons entering the labor force, the second measure discussed in this analysis. The denominator represents the expected number of years in the labor force, assuming labor force entry at age 20. This value is computed as the difference between life expectancy from age 20 (e_{20}) and the expected years in retirement by all persons entering the labor force. This measure holds the ratio of time in retirement to time in the labor force constant for all persons entering the labor force (as opposed to all persons surviving to retirement age). Again, improvements in life expectancy are proportionally allocated between time in retirement and time in the labor force.

The computation of the second measure revealed that men in 1940 were expected to spend 7 years and 3 months in retirement (7.28 years). The average life expectancy for men aged 20 in 1940 was 46.82 years. Thus, under an assumption of an age 20 entry into the labor force, these men could be expected to spend 39.54 years in the labor force (46.82 minus 7.28). The ratio of 7.28 years in retirement to 39.54 years in the labor force yields a value of 0.184. When the experience of the entire population (including the deaths of persons in the labor force) is incorporated, the ratio of years spent in retirement to years in the labor force decreases to 18 percent of the working-age years. In 1975, the ratio of 0.184 (18.4 percent) is between ages 67 and 68. By interpolation, in 1975 men would have to work to age 67 years and 6 months to spend 18.4 percent of the work force years in retirement.

Findings

These four measures of equivalent retirement ages are applied to data from 1940 to 2050. The base year 1940 was chosen to measure retirement age equivalence in relation to conditions that prevailed when retired-worker benefit payments began. The years 1960 and 1980 are also used as standards. The use of these additional time points as base years provides a means for assessing the impact of changes that are smaller in magnitude than those associated with the 1940 base year.

Table 1 shows the equivalent retirement ages that result from the first measure. The data for the base year 1940 are illustrated in chart 1. These data represent the

Table 1.—Retirement expectancy at retirement: Retirement ages equivalent to age 65 retirement for selected base years

[In years:months]

Calendar year	Base year of age 65 retirement								
	1940			1960			1980		
	Total [1]	Men	Women	Total [1]	Men	Women	Total [1]	Men	Women
1940	65:00	65:00	65:00	...	...	...	...	...	...
1945	66:05	66:03	66:06	...	...	...	...	...	...
1950	67:02	66:08	67:05	...	...	...	...	...	...
1955	67:10	67:02	68:03	...	...	...	...	...	...
1960	67:11	66:09	68:06	65:00	65:00	65:00	...	...	...
1965	68:03	66:09	69:01	65:05	65:00	65:07	...	...	...
1970	69:00	67:02	69:11	66:00	68:02	66:05	...	...	...
1975	70:01	68:01	71:02	67:02	68:10	67:08	...	...	...
1980 [2]	71:00	69:01	72:01	68:00	69:04	68:06	65:00	65:00	65:00
1985 [2]	72:00	69:10	73:03	69:01	65:04	69:08	66:00	65:10	66:01
1990 [2]	73:00	70:07	74:04	70:00	66:04	70:09	66:11	66:07	67:02
1995 [2]	73:08	71:01	75:02	70:08	67:03	71:06	67:07	67:01	67:11
2000 [2]	74:01	71:05	75:08	71:00	69:08	71:11	67:11	67:05	68:04
2025 [2]	75:06	72:08	77:01	72:05	70:11	73:04	69:03	68:08	69:09
2050 [2]	76:11	73:10	78:06	73:09	72:01	74:08	70:07	69:10	71:01

[1] Weighted average from Actuarial Note No. 105. See Francisco R. Bayo and Joseph F. Faber, **Equivalent Retirement Ages: 1940–2050**, Office of the Actuary, Social Security Administration, June 1981.

[2] Based on intermediate mortality assumptions described in the 1981 Report of the Board of Trustees of the OASDI Trust Funds.

equivalent retirement ages for years following 1940, assuming that the expected number of years in retirement remains unchanged and that the entire increase in life expectancy is spent in the labor force.

As mentioned earlier, the series reported by the Office of the Actuary represents a weighted average of separate estimates for men and women. The amount of time persons at retirement age can expect to spend in retirement, holding constant the time in retirement, is provided by the first measure in this analysis. In the aggregate, the equivalent retirement age associated with this measure increased just over 5 years from 1940 to 1975, with projected increases of 4 years and 6 months for 1975–2025, and 1 year and 5 months for 2025–50. Thus, by 2050, workers who want the same amount of time in retirement as their 1940 counterparts would be required to spend 11 years and 11 months more time in the labor force than workers in 1940. Sex-specific data for 1940–75 show the increments of time required in the labor force as 6 years and 2 months for women and 3 years and 1 month for men. If all the increased life expectancy were spent in the labor force, women would work 13 years and 6 months longer in 2050 than women who retired in 1940, and men would work 8 years and 10 months longer in 2050 than men who retired in 1940.

The fact that the first measure increased more for women than men reflects the longer life expectancy for women than for men (above and beyond the 1 year and 8-month differential in life expectancy at age 65 in 1940). The increased longevity for women contributed to an increase in their equivalent retirement age, compared with men. Specifically, from the starting point of age 65 in 1940, an assumption that all gains in life expectancy will be spent in the labor force would lead to a retirement age in 1975 of 71 years and 2 months for women, compared with 68 years and 1 month for men—a difference of 3 years and 1 month.

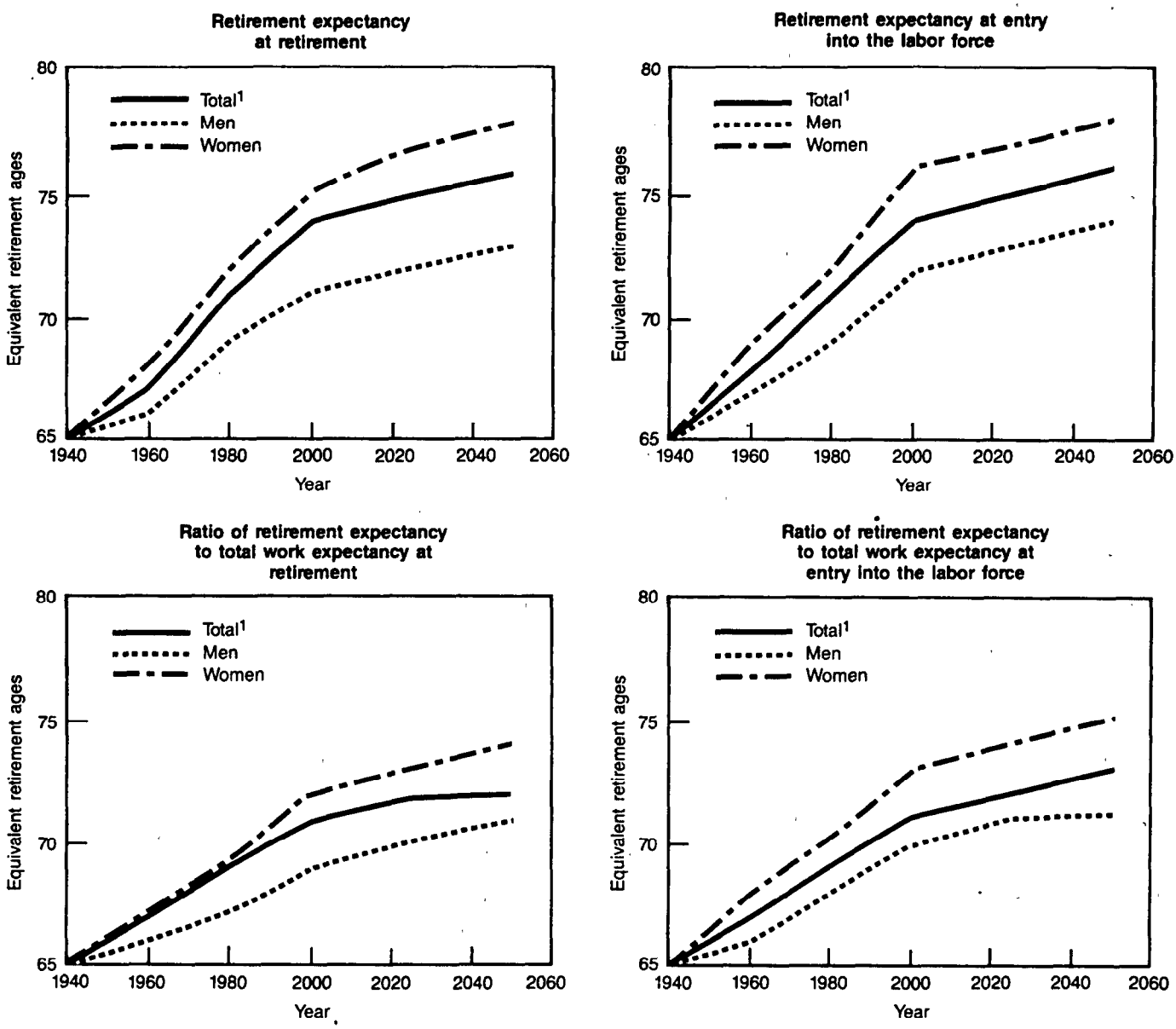
By 2000, the gap is projected to widen to 4 years and 3 months. Women would work until age 75 and 8 months and men would work until age 71 and 5 months. By the middle of the 21st century, the equivalent retirement age for women is projected to be 78 years and 6 months—4 years and 8 months above the equivalent retirement age for men in 2050.

The second measure, based on an age 20 entry into the labor force, gives the retirement age required to hold expected years in retirement constant. Under this measure, the retirement age among all persons entering the labor force would increase from 65 in 1940 to the equivalent retirement age of 76 years and 8 months in 2050.

As was the case for the first measure, the equivalent retirement age for the second measure increases more for women than men—with women retiring at older ages than men (table 2). Both measures assign all increased years of life expectancy at the retirement ages to the labor force years. Thus, it is not surpising that the increases in the equivalent retirement ages from both measures are similar.

The third measure focuses on persons who survive to retirement, and the years of life gained by an increase in life expectancy at retirement age are split between time in the labor force and time in retirement. The overall patterns evident in the equivalent retirement ages from the first two measures are repeated in table 3. Once again, retirement ages and amount of improvement in life expectancy are greater for women than for men. When equivalent retirement ages from this measure are compared with those from the first two measures, the

Chart 1. — Retirement ages equivalent to age 65 retirement in 1940, by selected measures



[1]Weighted average from Actuarial Note No. 105. See Francisco R. Bayo and Joseph F. Faber, **Equivalent Retirement Ages: 1940-2050**, Office of the Actuary, Social Security Administration, June 1981.

ages from the third measure are as much as 4 years lower. This measure assigns only a fraction of the increased years of life expectancy to time in the labor force. Thus, the equivalent retirement ages are noticeably lower than with either of the earlier measures.

The last measure combines the point of measurement used for the second measure with the characteristic of measurement from the third measure. The overall patterns are similar to those observed for the first three measures. Briefly, table 4 shows that the amount of increase in life expectancy and the resulting retirement ages are higher for women than for men. Although the pattern of increase is the same for all the measures, the levels of the last two are comparable and lower than those of the first two. Using 1940 as the base year for the last measure would bring retirement age in 2050 to 75 years and 1 month for women and 71 years and 11 months for men. In comparison, with 1940 as the base year for the second measure, equivalent retirement ages in 2050 would be 78 years and 8 months for women and 74 years and 3 months for men. This lowering of the equivalent retirement ages results from dividing the increase in life expectancy between the years in the labor force and the years in retirement.

The tables also display data for equivalent retirement ages from each measure for the base years 1960 and 1980. In general, the overall patterns remain unchanged; regardless of the measure or the base year, the equivalent retirement ages are older for women than for men. However, as the base year moves forward over

Table 2.—Retirement expectancy at entry into the labor force:[1] Retirement ages equivalent to age 65 retirement for selected base years

[In years:months]

Calendar year	Base year of age 65 retirement								
	1940			1960			1980		
	Total[2]	Men	Women	Total[2]	Men	Women	Total[2]	Men	Women
1940	65:00	65:00	65:00	...	...	...	...	...	...
1945	66:04	65:11	66:08	...	...	...	...	...	...
1950	67:06	66:10	68:00	...	...	...	...	...	...
1955	68:05	67:06	69:02	...	...	...	...	...	...
1960	68:05	67:02	69:05	65:00	65:00	65:00	...	...	...
1965	68:08	67:02	70:00	65:03	65:00	65:06	...	...	...
1970	69:02	67:05	70:09	65:09	65:02	66:03	...	...	...
1975	70:05	68:06	72:00	67:00	66:04	67:06	...	...	...
1980[3]	71:04	69:06	72:10	67:11	67:04	68:04	65:00	65:00	65:00
1985[3]	72:04	70:05	74:00	68:11	68:03	69:06	65:00	65:11	66:01
1990[3]	73:03	71:03	75:00	69:10	69:01	70:06	66:11	66:09	67:01
1995[3]	73:11	71:09	75:09	70:06	69:08	71:03	67:07	67:04	67:10
2000[3]	74:03	72:01	76:01	70:10	69:11	71:07	67:11	67:08	68:02
2025[3]	75:06	73:02	77:05	70:00	71:01	72:10	69:01	68:09	69:05
2050[3]	76:08	74:03	78:08	73:02	72:01	74:01	70:03	69:09	70:08

[1] Assumed to be age 20.

[2] Weighted average from Actuarial Note No. 105. See Francisco R. Bayo and Joseph F. Faber, **Equivalent Retirement Ages: 1940–2050**, Office of the Actuary, Social Security Administration, June 1981.

[3] Based on intermediate mortality assumptions described in the 1981 Report of the Board of Trustees of the OASDI Trust Funds.

Table 3.—Ratio of retirement expectancy to total past work expectancy at retirement: Retirement ages equivalent to age 65 retirement for selected base years

[In year:months]

Calendar year	Base year of age 65 retirement								
	1940			1960			1980		
	Total[1]	Men	Women	Total[1]	Men	Women	Total[1]	Men	Women
1940	65:00	65:00	65:00	...	...	...	...	...	...
1945	66:00	65:08	66:00	...	...	...	...	...	...
1950	66:06	66:01	66:08	...	...	...	...	...	...
1955	66:11	66:06	67:03	...	...	...	...	...	...
1960	67:00	66:03	67:05	65:00	65:00	65:00	...	...	...
1965	67:03	66:03	67:10	65:03	65:00	65:08	...	...	...
1970	67:08	66:06	68:05	65:08	65:03	66:00	...	...	...
1975	68:06	67:01	69:03	66:05	65:11	66:10	...	...	...
1980[2]	69:01	67:09	69:10	67:00	66:06	67:04	65:00	65:00	65:00
1985[2]	69:09	68:02	70:08	67:08	67:01	68:01	65:08	65:07	65:09
1990[2]	70:05	68:09	71:05	68:03	67:07	68:10	66:03	66:01	66:05
1995[2]	70:10	69:01	72:00	68:09	67:11	69:04	66:08	66:05	66:11
2000[2]	71:01	69:05	72:03	69:00	68:01	69:07	66:11	66:07	67:02
2025[2]	72:00	70:03	73:03	69:10	68:11	70:06	67:09	67:05	68:00
2050[2]	72:11	71:00	74:03	70:08	69:09	71:05	68:07	68:02	68:11

[1] Weighted average from Actuarial Note No. 105. See Francisco R. Bayo and Joseph F. Faber, **Equivalent Retirement Ages: 1940–2050**, Office of the Actuary, Social Security Administration, June 1981.

[2] Based on intermediate mortality assumptions described in the 1981 Report of the Board of Trustees of the OASDI Trust Funds.

time, the differential in equivalent retirement ages decreases between men and women while the differential in the average years of retirement and the ratio of time in retirement to time in work increases. More specifically, when 1940 is used as a base for the computation of equivalent retirement ages, the sex difference in each measure is small, compared with the increasing differential in life expectancy. This increase in the differential in life expectancy between men and women leads to an increase in the differential retirement ages, by sex, needed to maintain equivalent years in retirement. Consistent with the widening sex differential in life expectancy, the size of the sex differential in the base year increases over time. This contributes to an increase in the portion of the sex differential that is included in the baseline, and thus the sex differential in equivalent retirement ages decreases as the base year moves forward.

In addition, the expected years in retirement and the ratio of expected retirement time to work time increases with each subsequent base year. As the absolute and relative time in retirement increases, the level of the equivalent retirement ages declines. For example, under the

Table 4.—Ratio of retirement expectancy to total work expectancy at entry into the labor force:[1] Retirement ages equivalent to age 65 retirement for selected base years

[In years:months]

Calendar year	Base year of age 65 retirement								
	1940			1960			1980		
	Total[2]	Men	Women	Total[2]	Men	Women	Total[2]	Men	Women
1940	65:00	65:00	65:00	...	...	...	...	...	...
1945	66:00	65:09	66:02	...	...	...	...	...	...
1950	66:09	66:03	67:01	...	...	...	...	...	...
1955	67:04	66:09	67:10	...	...	...	...	...	...
1960	67:04	66:05	68:01	65:00	65:00	65:00	...	...	...
1965	67:07	66:05	68:06	65:03	65:00	65:05	...	...	...
1970	68:00	66:08	69:01	65:08	65:03	66:00	...	...	...
1975	68:11	67:06	70:00	66:06	66:01	66:10	...	...	...
1980[3]	69:07	68:03	70:08	67:02	66:10	67:05	65:00	65:00	65:00
1985[3]	70:04	68:11	71:06	67:11	67:06	68:03	65:09	65:08	65:09
1990[3]	71:01	69:06	72:03	68:07	68:01	68:11	66:04	66:03	66:05
1995[3]	71:07	70:00	72:10	69:00	68:06	69:06	66:10	66:08	66:11
2000[3]	71:10	70:03	73:01	69:03	68:09	69:09	67:01	66:11	67:02
2025[3]	72:09	71:01	74:01	70:02	69:07	70:08	67:11	67:09	68:01
2050[3]	73:08	71:11	75:01	71:00	70:05	71:07	68:09	68:06	68:11

[1] Assumed to be age 20.

[2] Weighted average from Actuarial Note No. 105. See Francisco R. Bayo and Joseph F. Faber, **Equivalent Retirement Ages: 1940-2050**, Office of the Actuary, Social Security Administration, June 1981.

[3] Based on intermediate mortality assumptions described in the 1981 Report of the Board of Trustees of the OASDI Trust Funds.

third measure, with 1940 as the base year, women would be expected to wait until age 74 years and 3 months to retire in 2050; with that same measure and 1980 as the base year, in 2050 women would be able to to retire at age 68 years and 11 months, 5 years and 4 months earlier than those with a 1940 base year.

Conclusion

The application of three base years to the full complement of measures of equivalent retirement ages results in a range in the projected equivalent retirement ages in 2050 of a little more than 6 years for men and 9 years and 9 months for women. This range of values, considered in its entirety with all of the intermediate values, provides the basis for a number of ways of thinking about the definition of retirement age.

Each measure reflects a slightly different way of determining equivalent retirement ages. The preference for one over another should be directed by an understanding of the differences and thus an informed choice as to the best measure for the purpose at hand. For example, on the selection of a base year, although 1940 recognizes that a specific decision was made to set the retirement age at 65, the choice of a more recent year would not result in the same magnitude of changes in the retirement age. Similarly, a choice must be made as to whether the point of measurement is defined to include or exclude persons who contribute to the Social Security system but do not survive to collect benefits. Finally, with regard to the characteristic of measurement, the increments in life expectancy from the base year into the future can be left in the retirement period as they are now, moved entirely into the labor force period, or they can be proportionally allocated between the retirement period and the labor force period of the life cycle.

Simply by way of example, the equivalent retirement ages from the base year 1960, with age 20 taken as the point of measurement (to include everyone who pays into the Social Security Trust Funds) and with increments in life expectancy allocated proportionally between the labor force and retirement years provide a middle ground. In this particular case, the aggregate equivalent retirement age in 1975 is 66 years and 6 months; this is nearly 2 1/2 years below the 1975 equivalent retirement age with 1940 as the base year. The equivalent retirement ages in 2000 and 2050 are also about 2 1/2 years below those evident when 1940 is the base, with a retirement age of 69 years and 3 months in 2000 and 71 years in 2050. Comparable data by sex reveal approximately a 1 year differential in the equivalent retirement ages of men and women.

Regardless of the base year or the time and characteristic of measurement, these data show that there are noticeable differences between the equivalent retirement ages computed for the total population and those for men and for women. Although it may not be appropriate to establish separate retirement age schedules for men and for women—or for other population subgroups—an awareness of these differences can help guide the selection of a reasonable middle-range retirement age.