contributions cease at a relatively early age. The rate increase reflects the increased risk with age. Since contributions are payable only for employees aged 23–54, the premiums do not reach the magnitude that might otherwise be expected.

Disability Pensions

The total amount of annual premiums collected for the risk of disability must be large enough to cover the pensions granted in a specific year for as long as the disabilities last. Index-linked increases, determined by changes in the price and wage indexes, are financed from the support fund.

The method used to compute the risk factor depends on the size of the work force. For firms with 600 or more employees, the risk premium is determined for each individual employer and is related to the number of disability cases involved. For firms with fewer than 300 employees, the premium is based on the combined risk factor of all employers in this category, with the age distribution still taken into account and the contribution rate computed for each age group.

As table 1 shows, the rate rises with age for employers with fewer than 300 employees. Besides reflecting the incidence of disability, the rate aims at equalizing age group contributions by combining a declining number of contributors in each advancing age group as wages become increasingly higher.

For employers with 300–599 employees, a combination of the two methods of determining contributions is used. The common rate for all small employers is used for the first 299 employees; for the remainder, the individual employer rate is used. Thus, the contribution rate for an employer with 500 employees would be weighted to reflect the combination of the two rates.

Survivor Pensions

For men, the premium for survivor protection is a risk premium, related to age, that finances the survivor pension until the employee retires. The premium tends to rise with the employee's age, but it tapers off after he reaches age 55 since pensions beyond retirement age are financed from the support fund. That fund also finances any index-related increases before retirement, as for the disability pension.

For women employees the contribution rate for survivor protection is much lower and is uniform for all age groups. The difference between the rates for men and women reflects the fact that only the woman's surviving children are eligible for survivor pensions, since benefits are provided for widows but not for widowers.

Support Fund

A support fund—essentially a pooling arrangement for covering shortfalls in contributions and equalizing the carriers' costs—also receives contributions from employers and is similarly based on age, sex, and number of employees.

Relating the employer contributions into the support fund to age of the employees is intended to assure that all age groups will be contributing an approximately equal amount. Thus, the rate starts at a relatively high level for the younger ages (when wages are low), tapers off as the wages of older workers rise, and finally increases for employees nearing retirement age (primarily because of the declining number of workers in this age group).

Research Grants Studies

Sections 702 and 1110 of the Social Security Act authorize extramural research projects in the broad areas of social security. The Social Security Administration provides funding through grants to nonprofit organizations and through contracts with both nonprofit and profitmaking organizations. From time to time, as projects are completed, the **Bulletin** publishes summaries of research findings. A summary of a completed project (Grant No. 90296) is presented below.

Demographic and Economic Differences in Survivor Experiences of Nonwhite and White Families

This national study investigated demographic and economic differences in the survivor experiences of nonwhite and white families. Substantial racial differentials in working lifetime mortality are apparent yet mortality data do not clearly illuminate the impact upon the surviving population. The study compares the risks of widowhood for women and of paternal orphanhood for children. Also compared are the consequences of family-status changes for the duration of widowhood and of paternal orphanhood and for lifetime income deficits—the extent to which "survivor" families are financially disadvantaged in their remaining worklife years in comparison with their intact counterparts. The research was conducted by Gordon F. Sutton, University of Massachusetts at Amherst.

The study produced a set of national estimates of racial differences for the United States. These estimates are based on national current population survey (CPS) data collected by the Bureau of the Census (from the June 1971 survey) and on recent national vital statistics data from the National Center for Health Statistics. The CPS questionnaire asked women about their marital and child-bearing histories. These data along with vital statistics data were used in an

analysis—like that for life tables—in which a "synthetic" or hypothetical population of women is exposed to the lifetime risks of widowhood and mortality from ages 14 to 65 in order to assess and compare cumulative lifetime estimates of widowhood risks and durations with those for the contrasting population. These estimates form the bases for preparing estimates for the comparisons of paternal orphanhood and income.

Important and persistent racial differences in mortality rates exist in the adult ages. Such differences tend to be obscured in comparisons of crude death rates. Close inspection, reveals large age differences in the distribution of mortality risk by race. They, in turn, appear to have significantly different consequences in the dissolution of families, the interruption of earned income streams, and the disproportionate risk of onset of deprivation.

One way to measure differences in the widowhood experience between the white population and the nowhite is to expose a synthetic population of women to a life process containing the risks of changes in martial status and the risk of death across successive ages to extract a distilled view of the cumulative lifetimes of women in the population being compared. In this way one can compute the likelihood of widowhood at a particular age for a woman who is married up to that age without disruption of the marriage or her own death. This calculation takes more information into account than those that compare only the percentage of women who are widowed with those married at various ages.

Estimates of paternal orphanhood, the life experience of children whose father has died, were prepared upon the base developed in the widowhood analysis using fertility histories of the surveyed women. By linking children to their

Cooperative research grants program: Final reports available as of July 17, 1979

Number	Title	Grantee and project director
56075	The Economics of the Clinical Laboratory Industry	University of California (Berkeley), Richard Bailey.
56076	Hospital Organization: Effectiveness of Patient Care	Cornell University, Gerald Gordon.
56106	The Effect of Social Security on Personal Saving	Harvard University, Alicia H. Munnell.
57331	Living Arrangements of the Widowed	University of Massachusetts, J. Henry Korson.
57391	Effect of Coinsurance on Physician Utilization	Palo Alto Medical Research Foundation (California), Anne A. Scitovsky.
57396	Relatedness Patterns of Puerto Rican Centenarians	Sweet Briar College, Belle Boone Beard.
57398	Effects of Medicare on Patterns of Hospital Use	University of Missouri, Maw Lin Lee.
57495	Older Workers: Withdrawal Patterns and Adaptations	Iowa State University, Edward Powers.
57524	Evaluation of Surgical Consultation Insurance Benefit	Albany Medical College, Gordon Hatcher.
57537	Health Services Use and Life Problems in Chronic Disease	University of Connecticut, Sydney Croog.
57693	Hospital Reimbursement and Regulation Under Medicare	Policy Center, Inc., Judith Feder and Patrick O'Donoghue.
57716	Collection and Analysis of Prescreening Surgical Consultation Benefit Program Data of Approximately 1,000 Consultations	Cornell University Medical College, Eugene McCarthy.
57773	Mortality Around Retirement: The Rubber Industry Case	University of North Carolina, A.J. McMichael.
57823	National Survey of Black Aged	University of Illinois at Chicago Circle, Ethel Shanas.
57838	Retirement Emigration from the United States	University of Wisconsin (Green Bay), William McAuley.
57842	Kinship and Social Security in a Micronesian Society	University of Iowa, Keith Marshall.
57847	Paying the Doctor: Foreign Lessons for the United States	Columbia University, William Glaser.
57855	Disability Application and Vocational Attitudes	University of Georgia, Thomas Porter.
57857	Effect of Medical Staff Characteristics on Hospital Costs	Northwestern University, Mark Pauley.
90100	Policy Alternatives in Clinical Laboratory Testing	University of California (Berkeley), Richard Bailey.
90290	A Method of Estimating Philantropic Expenditures	National Planning Association, Michael Koleda.
90296	Race Differences in Mortality Burden Among Survivors	University of Massachusetts, Gordon Sutton.
90297	Application of a Functional Classification System	Duke University, George Maddox.
90305	Average Wholesale Price-Actual Acquisition Cost (AWP-AAC) Differentials by Pharmacies and Pharmaceuticals	University of Iowa, G. Norwood and R. Freeman.
90313	Two Studies in the Shifting of Taxes on Labor	Michigan State University, Daniel Hamermesh.
90420	An Investigation of Organizational Factors Affecting Cost and Quality	Boston University, Gerald Gordon.
90482	Problems of Centralizing Data in Federal Systems: Welfare Programs in Canada and the United States	Harvard University, Sidney Verba and Christopher Leman.
90502	Dynamic Aspects of Earning Mobility	National Bureau of Economic Research, Lee Lillard.
90510	Encouraging Workers' Savings: German Results and U.S. Potential	Brookings Institution, Hugh Heclo.

respective mothers' estimated years of life by marital status in the marital life synthetic population, estimates of the number of years of child life in each of the marital statuses occupied by these mothers were computed.

Estimates of person-years of life in the synthetic populations of married, widowed, and divorced women were multiplied by income estimates for corresponding single year-of-age classes by race. The products were cumulated over age to determine lifetime family income aggregates.

Findings

In the aggregate, nonwhite women have a much greater share of their working lifetime (3.8 years) given over to widowhood than do white women (2.5 years). This difference is particularly pronounced among women in their twenties and declines with age, although even at the end of the working life, a larger white-nonwhite difference remains.

For both groups, the risk of widowhood among women who marry is greater than the risk of divorce in the working ages (1 in 3 and 1 in 4 for white women; 1 in 2 and 1 in 3 nonwhite women). Moreover, widowhood accounts for a larger share of the expected lifetime through the working years of life than does divorce. The experience reveals, for only those women subject to specific risks, differences by race that parallel those for all women. The differences are somewhat attenuated, however. More frequent and longer periods of widowhood appear in the working years of life among nonwhite women than among white women, with a clear and substantial disadvantage for nonwhite women. Age for age, widows in both groups appear to have somewhat similar patterns of widowhood duration.

Widowhood comes earlier among nonwhite women, however, and, as a consequence, when durations for the total working lifetimes of all ever-widowed women are considered, the nonwhite women are at a disadvantage. Moreover, when the probable duration of widowhood for both white and nonwhite women at each age are compared on the basis of age-specific risks of remarrying or dying, the values for nonwhite women aged 36–54 are substantially higher in the cumulative effects of these earlier widowings. The disappearance of the difference for those aged 55–65 seems to come from shifts in rate of change in mortality risks with respect to age, where again racial differences appear. These shifts tend to bring about a rise in the net rate of loss among widows more rapidly for nonwhite women than for white women, thus reducing the duration values for nonwhites below those for whites.

For both white and nonwhite survivors, however, income during widowhood appears to be less than 60 percent of what would have been expected if the spouse had not died. Although the size of this difference in relation to aggregate lifetime income among ever-married persons (2.7 percent for white survivors and 5.0 percent for nonwhite survivors) may be small for both groups, the nonwhite population lost a substantially larger share of family income over the working lifetime.

It may be concluded from the study findings that nonwhite families experience losses of a male head in the working ages more often than white families. In addition, the mortality differences understate the size of the loss to surviving family members, both in terms of years of life devoted to widowhood and paternal orphanhood and in the measure of income lost over the expected lifetimes of widowed women.

Copies of the final report of this completed research project are in the Social Security Administration Library, 571 Altmeyer Building, 6401 Security Blvd., Baltimore, Md. 21235, and in the Library of the Office of Research and Statistics, Room 320-O, Universal North Building, 1875 Connecticut Ave., NW., Washington, D.C. 20009. Copies of the report may be obtained through interlibrary loan. (Also in these libraries are copies of more than 100 other project reports that have been completed since 1963. Earlier reports were listed in the May 1974 BULLETIN.)