

► **Retirement and Savings Plans**

Payout Elections of Participants *in a Public Pension*

by Norma L. Nielson
and Terry A. Beehr

► **Participants were almost evenly divided among options that provided lifetime income protection to the spouse, those that provided a temporary refund guarantee and those that provided no ongoing income to the spouse after the retiree's death. *Health, while not related to retirement age, was the key factor in retirees' payout choices.*** ◀

This project gathered and analyzed information on the decisions being made by retiring workers regarding their pension plan and alternative sources of income for surviving spouses. Specifically, retiring workers of the Oregon Public Employees Retirement System (PERS) and their spouses who sought information about retirement after February 1, 1990 and later retired during 1990 became the study population. Over 900 public employers, including all state agencies and all school districts in Oregon, participate in PERS. In addition, the majority of cities, counties and other political subdivisions have chosen to participate. PERS, which has administered benefits since 1946, is the retirement program for about 95% of state and local government employees in Oregon.

Fundamental differences between public and private pensions were examined in Lovejoy (1988) and Wiatrowski (1988). Lovejoy, who describes the results of the Bureau of Labor Statistics' first survey of benefits available to state and local government employees, finds that public pension plans tend to provide more liberal benefits but are more likely to require employee contributions than are their private sector counterparts. She found that pensions were somewhat more common in the public sector (98% versus 89% in the private sector) and that the plans offered were more frequently defined benefit plans (93% versus 76% in the private sector).

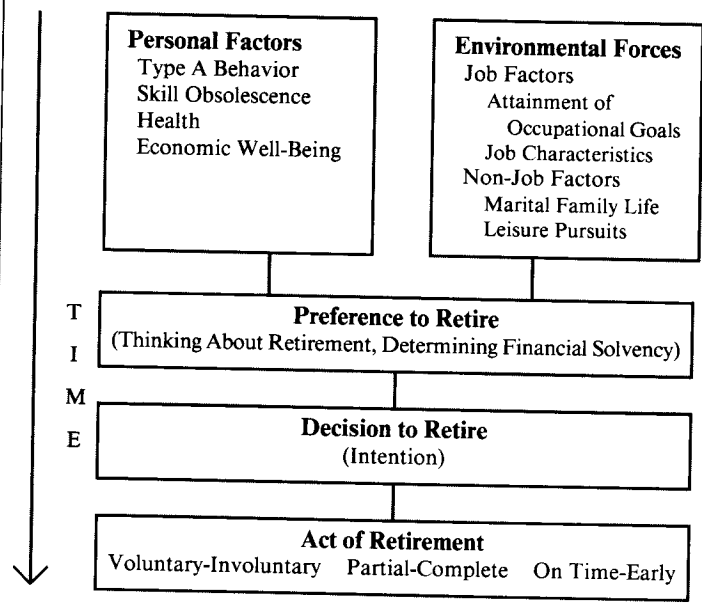
The pension benefits offered to participants in the Oregon PERS correspond very closely to the benefit formula for an "average" public plan. The use of a defined benefit formula for determination of benefits is common in public plans. The plan's application of its percentage to the three year final average salary is "typical" for public plans (Blostin, Burke and Lovejoy 1988).

This article reports the payout choices made by the study population and describes the significance of several variables in explaining decisions about how a pension benefit is paid.

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FIGURE 1

How People Decide to Retire



Source: Terry A. Beehr, "Process of Retirement: A Review and Recommendations for Future Investigations." *Personnel Psychology* 39 (Spring 1986): 31-55. Reprinted with permission.

SIGNIFICANCE OF THE PROBLEM

Little is known today about choices being made by workers as they approach retirement. In some ways this is not surprising. Employers that sponsor pension plans generally ask their actuaries to make mathematical computations in such a way as to offer alternative payouts that are equivalent to the plan's normal benefit. Since the alternatives are designed from the outset to have no cost impact, employers' overriding reaction to payout elections is one of indifference. Indeed, employers strive to remain unbiased and, probably because of fears of potential liability, intentionally do not advise employees on the appropriateness of specific options in their individual circumstances.

Researchers who study retirement have not previously agreed upon standard methodologies to use in the study of retirement. Johnson and Riker (1981) describe the usefulness of a concept they call *retirement maturity*, but no one measure of retirement readiness has surfaced as standard. While gerontologists such as Hatch (1987) focus on the effect of retirement on the individual, a few industrial/organizational psy-

chologists, such as Beehr (1986), have looked at the effect of retirement on the employing organization. Though Burke (1990) reports that 70% of firms with more than 20,000 employees offer preretirement planning programs, little or no agreement has been reached on the value of such programs.

Given this somewhat primitive state of knowledge, any study of retirement must begin with "the basics." Beehr, following a comprehensive survey of the literature in these areas, described the stages an individual goes through in the process of retirement and factors influencing individual decisions to retire using a simple flow chart. This study categorized data according to the descriptions in Beehr (Figure 1) and used its accompanying terminology to label measurements of the variables that described respondents' attitudes and perceptions about retirement and the decision to retire, the first step in the retirement process.

Next, this research collected and analyzed data to describe how financial information and status contribute to attitudes about retirement and the decision to retire. Studying the financial status of the couple also implied looking past the well-being of the couple immediately following retirement to decisions made about surviving spouses.

ALTERNATIVE FORMS OF PAYOUT

A decision among at least three classes of alternatives is common regarding payout of a retiree's pension benefits. The retiree may (1) elect a lifetime joint and survivor annuity under the employer's pension plan; (2) elect to provide a lump sum of capital through other pension plan options or through life insurance in order to provide for the spouse; or (3) elect to make no formal provision for a spouse.

Lifetime Survivor Benefits

Actual retirement payout elections in PERS are made by the retiring worker. This process varies somewhat from qualified pension plans of private employers which, effective with the Retirement Equity Act of 1984, must offer as an automatic form of benefit a qualified joint and survivor (QJS) annuity.¹ Because PERS is a state plan and not subject to all federal requirements, it requires neither the joint and survivor option as the default election nor the spouse's signature waiving the right to any joint and survivor benefit.

Providing a Capital Sum

The principal alternative to the joint and survivor annuity option of the employer's pension plan is some sort of capital sum. This sum may be provided through a refund guarantee on the annuity payout or through the purchase of a private life insurance policy. This use of private insurance in this manner was first described in 1980 (Brainard and Lord). Although the specifically tailored insurance policy requested by those authors is not available in today's marketplace, life insurance is increasingly being sold to support the surviving spouse of a pensioner who elects a single life annuity. Such a purchase can, in some cases, increase a retiring couple's wealth beyond what could be achieved by electing a joint and survivor annuity. The about-to- retire worker purchases life insurance to provide for the income needs of survivors instead of electing a joint and survivor annuity option under the employer's pension plan. The life insurance policy itself then provides the capital needed to support the survivor after the retired worker's death, a sum that can, as is always true with life insurance, be paid out in either a lump sum or an annuitized income for life. Nielson (1988) has presented in detail the strengths and weaknesses of substituting life insurance for the survivor annuity.

No Direct Provision for Surviving Spouse

One option for a retiree, though no longer widely available to the retiree without the spouse's consent following the Retirement Equity Act, is to make no explicit provision for the possibility of a spouse surviving longer. Though believed to be uncommon, 26.5% of those retiring from the Oregon PERS in 1989 elected the single life annuity; another 43.2% elected a refund annuity that will provide cash if the retiree dies in the first few years but provide nothing after annuity payments exhaust the retiree's original account balance (Oregon Public Employees Retirement System 1991, 59).

This "do nothing" strategy may be appropriate in some cases. For instance, spouses of some retirees are entitled to pensions in their own rights, and the best joint decision may be two single life pensions. Another retiree whose spouse is in ill health or is expected to die first may select a single lifetime income on the basis of this noneconomic fact.

SYNOPSIS OF THE RESEARCH METHOD

The results presented in this article are part of a study entitled "Retirement Income for Surviv-

ing Spouses" (Nielson and Beehr 1991). As the main objective of the larger study was to learn more about the future income levels available to surviving spouses, the sample population was limited to married couples with one partner who was ready to retire and was also a participant in PERS with more than five years of service. The final study included an original population of 452 married couples that yielded a useable sample of 440 couples or over 12% of those who scheduled counseling. Four mail-in survey questionnaires were employed to gather information about the financial options perceived by retiring workers and their spouses, the decisions they were making, the reasons behind those decisions and the roles played by financial planning professionals. Each partner completed a questionnaire prior to retirement, and a similar questionnaire was sent to each partner after retirement in 1990. Of the 2,136 PERS participants who retired during this study, 218 couples returned the postretirement instrument, representing 10.2% of PERS participants who retired in 1990.

Specific features of the retirement plan were constant across all participants and already known. Although several alternate calculations are available, the basic formula for the PERS pension is 1.67% per year of service times the final (three year average) salary. Consequently, the dollar amount of the pension benefit is highly correlated with years of service. Retirees with five or fewer years of service, who had an average PERS pension of \$99.27, were eliminated from consideration because the limited service period in Oregon public employment causes an expectation that the PERS pension will represent a relatively small share of total retirement income. The decisions of these cou-

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ples would, therefore, not be representative of those of career employees, and the data from these two populations should not be pooled. Other known features of the plan include:

- Normal retirement conditions (age and payout option)
- Benefit payout options available: single life annuity, joint life annuity, lump sum, "pop-up" and refund options
- Permanent early retirement provisions
- Temporary early retirement incentives
- No provision for integration with Social Security.

In addition, PERS collects certain kinds of comparative data for each individual participant:

- Date of birth
- Sex
- Earnings history
- Actual payout election
- Years and dates of service
- Job classification
- Worker's ending salary
- Employee's actual retirement age.

Characteristics of the sample population were continuously monitored as data were collected to assure a sample representing overall the living, retired PERS population.

Data were first analyzed for simple means, percentages and standard deviations, as appropriate, for the following variables:

- Retirement age by years of service and by sex
- Retirees electing straight life annuity over joint and survivor life annuity and the reasons cited for their decisions
- Perceived confidence of retirees and their spouses in making the financial decisions of retirement
- Perceived value of employer-sponsored pre-retirement planning activities.

In all cases, respondents were asked to mail back the completed questionnaires within two weeks using a postage-paid, preaddressed envelope that was provided. Of the original 866 retirees who agreed to participate in the first round of questionnaires, 452 couples returned the preretirement survey, and 440 could be used in the study because PERS could verify data; 440 represented about 12% of the population that originally reported for PERS counseling. Of the round one population, 229 (52%) were on their first visit to PERS, 141 (32%) were on their second visit, 56 (12.7%) were on their third visit and 14 (3.2%) had met with counselors four or more times. Spouses are encouraged to accom-

pany prospective retirees to counseling sessions, and 84.4% of this group had been accompanied by their spouses at least once.

PERS also provided a set of 26 data items as electronically transferred information. These data included such information as the date of retirement, gender of the retiree, type of employer, elected retirement option, health insurance carrier, date of birth, employment dates, annuity contributions, adjusted monthly salary and PERS benefit amounts.

PERS does not record marital status in its files; furthermore, information about participants needed the consent of the individual participant for release. A total of 218 married couples retired and completed the followup surveys. Because only anonymous and very basic information could be obtained from cooperative PERS participants who declined to partake in the full study, the total number of PERS participants who met with counselors, were married and declined participation in this study is unknown.

Information collected over the period consistently indicated that approximately 40% of PERS participants who received counseling were not married. Of the 3,613 potential retirees who were counseled in 1990, about 60% or 2,167 were married. Analysis of information on all nonparticipants compared with participants revealed that the only difference is age: Mean age of nonparticipants was 58.1 years, while participants' mean age was 60.5 years. Based on the verbal reports of counselors, it is believed that younger people who came in for information from counselors declined to participate in greater numbers because of the number of years remaining to retirement and feelings that the study would not accept their data due to this time span, or because they had not yet gained a comprehensive grasp of their intentions and readiness for retirement. Even when they were willing to participate, their responses could be useful only in providing cross-sectional information for the preretirement survey. Since their retirements would not have occurred within the 12 months following their counseling session, this group does not affect results based on both the pre- and post-surveys. No differences were noted by gender of nonparticipants or by employer type of nonparticipants.

Followup questionnaires were mailed to the retiree and spouse after retirement, typically within a short time of the first benefit. Of the 2,136 PERS participants who retired during this study, 218 couples returned the postretirement survey, rep-

TABLE I

Survivor Protection for Widows, 1974-86 (Percent)

Type of Benefit	Data Source and Retirement Date				
	New Beneficiary Survey ¹		Survey of Private Pension Benefit Amounts ²	New Beneficiary Survey ¹	Survey of Consumer Finances
	Before 1974	1974-78	1978	1979-82	1983-86
Total	100.0	100.0	100.0	100.0	100.0
Joint and survivor	n/a	n/a	41.5	n/a	69.3
Life certain	n/a	n/a	17.4	n/a	6.9
Total with survivor protected	24.8	53.8	58.9	59.5	76.2
Single life	69.2	41.1	37.2	33.9	17.6
Lump sum	6.0	5.1	3.9	6.6	6.2
Total with no survivor protected	75.2	46.2	41.1	40.5	23.8

¹For comparability, includes only pensions described as "regular pensions" that began at age 55 or later. Excludes profit-sharing and other plans that are often defined contribution plans offering only lump-sum payment options. Also excludes cases with missing data on the survivor options elected. Taken from "Survivor Benefits for Widows Are Often Small or Not Available," General Accounting Office, 1988.

²Calculated from a tabulation of benefit options by John A. Turner in "The Economic Risk of Long Life: Is Mandatory Survivor Insurance Needed?" *Economic Inquiry* (July 1988). Includes only defined benefit plans.

Note: Missing values are excluded from these calculations.

representing 10.2% of PERS participants who retired. Using the rate consistently derived for nonparticipants in the PERS study, about 60% of retirees would have been married; the 218 couples then represented about 17% of married PERS retirees for the time period of the study.

THE LITERATURE: FINANCIAL CONSIDERATIONS

The second step on the road to deciding on retirement concerns the preference to retire, and it appears this "thinking about retirement" includes considerations of solvency in the years after working. Economic factors come into play, and potential retirees need to determine the amounts of their benefits, the adequacy of their savings, the values of their assets and the preferred forms of payouts.

Prior Statistics on Survivor Protection

Turner and Beller (1989, 396) summarize previous research on survivor protection for widows for the period 1974-1986. Their Table D5 is reproduced here as Table I to facilitate the reader's comparison of these data, which are for male populations only and from periods that for the most part preceded the Retirement Equity Act. Values shown are the percentage of married males with pensions who retired during the period shown.

Asset Values Corresponding to Income

One of the most important theoretical insights added to retirement research in the 1980s was the concept of income rights as wealth (Burkhauser 1979 and 1980). Economists now view a worker facing a retirement decision as choosing between two different streams of income and treat pension rights as an asset whose value changes with the age of retirement. Burkhauser and Quinn (1983a and 1983b) measured, for Social Security and employer pensions separately, the incentives for retirement income using a variable called *wealth* that is the present discounted value of the benefit stream(s). The Oregon PERS study used this same variable to value the income streams from PERS pensions.

Social Security

A similar present value was used to include Social Security in the analysis of the Oregon PERS Study. Burkhauser (1980) found that the size of Social Security wealth was an important determinant of the retirement decision. Social Security provides a payment in the amount of a worker's primary insurance amount (PIA) each month as the recipient's retirement benefit beginning at age 65 if that worker meets the requirements of fully insured status under Social Security. Viscusi and Moore (1989) reviewed workers' choices over time with respect

TABLE II

Payout Elections of Oregon PERS Study Participants

(n = 435)

Form of Annuity Payout	Number Electing This Option Without Any Lump Sum		Number Electing This Option in Combination With a Lump Sum		Total	
Single life annuity	129	29.7%	21	4.8 %	150	34.5%
Straight life with 15 year guarantee	26	6.0	0	0.0	26	5.9
Straight life with refund guarantee	116	26.7	0	0.0	116	26.7
Joint and 100% survivor annuity	34	7.8	5	1.15	39	9.0
Joint and 100% survivor annuity with "pop-up" feature	23	5.3	1	.23	24	5.5
Joint and 50% survivor annuity	31	7.1	2	.45	33	7.6
Joint and 50% survivor annuity with "pop-up" feature	45	10.3	2	.45	47	10.8
TOTAL	404	92.9%	31	7.1 %	435	100 %

to risks with long-term implications. These choices, which they found to be broadly consistent with rational behavior, were based on an implicit real rate of time preference with respect to future years of life equal to approximately 11%. The rate of time preference decreased with education.

Health and Financial Assets as Predictors

The relationships with respect to health and wealth in the Oregon PERS study contained some surprises. While not every past study found health to be related to retirement, it has nevertheless been one of the most consistent predictors of it, along with financial status. The Oregon PERS study was in the minority in that health was not related to its participants' decisions to retire. This, again, helps to remind retirement researchers and policy makers of all that is yet to be known about retirement decisions, especially when beliefs might contradict facts. As was expected, financial assets were related to retirement age, with people in better financial shape retiring earlier than other people.

RETIREMENT PAYOUT ELECTIONS

Choices by the 435 individuals who completed the preretirement questionnaires and for whom PERS data were provided were recorded and compared to the number of individuals who elected their annuities with and without any lump sum from among the seven annuity payout options (Table II).

These percentages compare reasonably well with numbers from the full plan during a four year period of the late 1980s. Although a larger propor-

tion of the recipients in each category elected a lump sum during that period, the difference between their data and current data is attributed by the actuary to tax law changes. During that time, 34% of PERS recipients elected the straight life annuity, 26% elected a joint and survivor annuity in some form and 39% elected the cash refund annuity. The 15 year certain annuity, which was added during the period these numbers were produced, was elected by only 1% of the participants (Johnson 1991).

The lump-sum options available through this plan are different than might be familiar to most readers. No lump-sum payout of employer contributions is permitted. Under all except one of the benefit calculations, therefore, the tax consequences of such a lump-sum distribution are quite unfavorable. For the so-called money match computation, however, the lump-sum distribution is equal to exactly 50% of the value of the benefit, and some accountants and financial planners had believed until very recently that such a lump-sum distribution would qualify as a *partial distribution* under Section 402(a)(5)(D) of the Internal Revenue Code, thereby permitting a rollover into an eligible retirement account such as an IRA. A private letter ruling issued by the Internal Revenue Service (IRS) on November 5, 1990 concludes that "the lump sum cash refund which is distributed to employees under the money match method does not qualify as a 'partial distribution' eligible for tax free rollover into an individual retirement account under section 402(a)(5)(D) of the Code." This ruling has made lump-sum distributions much

less attractive because tax free rollovers are not sanctioned; therefore, part of the discussion concerning the choice of options will be limited to the payout options shown in the first column of Table II—that is, those without any component of a lump-sum distribution.

As described in the previous section, the pension plan by which this study's participants are covered offers payout options that provide protection for the surviving spouse at one of three different levels:

- A lifetime annuity either reduced or unreduced in amount
- Additional payments of capital to support the spouse for a limited period of time. The 15 year guarantee annuity, as the name implies, would provide temporary payments over the remainder of a 15 year period should the spouse die within 15 years following retirement; the refund annuity provides a capital sum that decreases monthly and typically is exhausted in eight to ten years.
- Nothing.

Consolidating the results of Table II ($n = 435$) to compare these three possibilities, we see that:

- 32.9% (143) of the surviving spouses will receive a lifetime annuity should their spouses die before they do. Of those, 44.1% will be unreduced annuities and 55.9% will be reduced to one-half of their former level.
- 32.6% (142) will receive additional payments or a sum of capital if their spouses should precede them in death within a limited time period.
- 34.5% (150) will receive no additional PERS benefits if the retiree dies before the spouse.

RISK PREFERENCES

One objective of the survey research was to determine, at least in part, the relative importance of various elements of uncertainty among near-retirement workers and to measure how this uncertainty affected the choice of pension payout options and the decision to purchase life insurance at retirement.

Using assumptions on future interest rates, inflation, mortality rates for the general population and the actual life span of a husband and wife, an objective researcher or adviser can determine expected present values to be used in comparing the life insurance and joint and survivor pension options. A consumer decision that chooses the option with the higher expected present value

would be considered rational. However, none of these factors is known precisely, so uncertainty and risk are always present. This section describes the survey questions designed to elicit risk preferences, as well as a brief summary of the responses to those questions.

Stated Importance of Different Financial Risks

The survey instrument solicited a rank ordering of seven different financial risks faced at retirement. Each of these goals was in conflict with the others (i.e., each was desirable, but the retiree could not achieve all of them simultaneously). A rank order measure was used to avoid obtaining data indicating that all were very important and desirable (as might well have occurred on a standard Likert scale) without forcing the retiree to decide among the conflicting alternatives. This instrument was designed to mirror the decisions many people make, as retirees may typically choose among alternatives rather than spread their choices among options with several different risk types.

Respondents ranked the following assurances (risks) from most to least important:

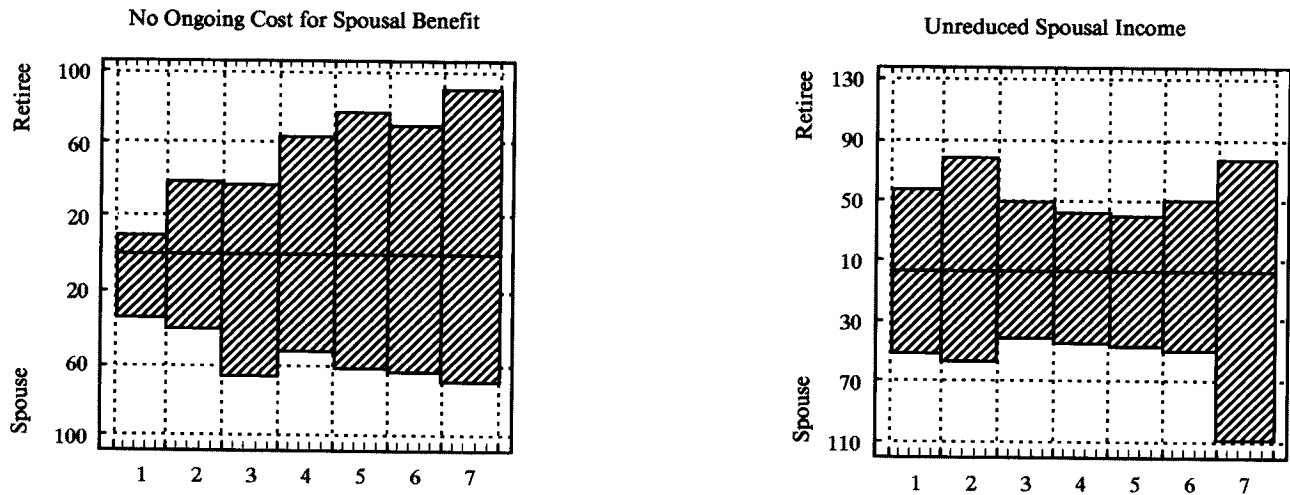
- Choice 1: Assure that my income will grow with inflation during all the years of my retirement.
- Choice 2: Assure that, if my spouse dies first, I don't pay the rest of my life for a benefit we'll never use.
- Choice 3: Assure that the amount of income I/we receive each year in retirement is predictable.
- Choice 4: Assure that I earn the highest possible return on our retirement savings even if the timing of income is not always predictable.
- Choice 5: Assure the highest possible income in the years right after I retire.
- Choice 6: Assure that there are no "surprise" expenses.
- Choice 7: Assure that, if I die first, my spouse's income will not be reduced.

The range of responses on each of these choices was from one to seven (i.e., each item was most important to some retirees and least important to others). The following section describes how retirees' rating of at least one of these items was an important variable in describing their payout choices.

The only change in rankings for these seven risk variables between spouses involves the two items directly related to spousal income. On av-

FIGURE 2

Preferences Relating to Spousal Income
Comparison of Spousal Responses



erage, the spouses showed more concern (ranked fourth by spouses, sixth by retirees) that the worker would not continue to pay for a joint and survivor benefit if he or she should die first. The spouses showed correspondingly less concern for their own level of income if the retiree should die first. The importance rankings of the two risks concerned with provision of income to the surviving spouse are shown in Figure 2.

A two sample analysis was performed to test the hypotheses that the differences between spousal responses was zero for the risk preferences. This hypothesis of equal means was rejected at the .001 level for the preference relating to ongoing cost for the spouse's benefit, and the hypothesis was rejected at the .05 level for unreduced spousal income, indicating that there was very likely a true difference between spouses on these risk preferences. Spouses' attitudes proved altruistic; each was more concerned about the financial well-being of the other than that of himself or herself.

CHARACTERISTICS RELATED TO PAYOUT ELECTION

This section describes several characteristics of participants in the Oregon PERS study that showed a significant relationship to their choice among payout options. These relationships used the three categories of spousal protection from benefit payouts—lifetime, temporary and none—that were described previously. Immediately fol-

lowing is a description of the relationships between options chosen and single variables. Following that is a multivariate analysis that compares the strengths of these relationships.

Simple Relationships

Those retirees electing lifetime benefits for their spouses were older ($\mu = 60.5$ years, $p = .002$) than those participants who elected no ($\mu = 59.2$ years) or temporary benefits ($\mu = 58.9$ years).

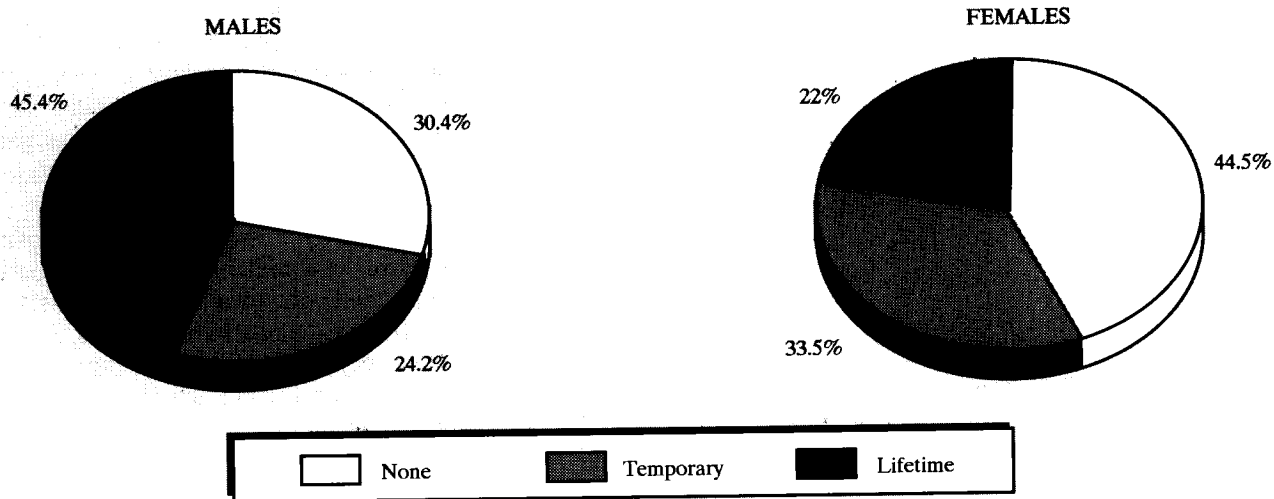
Lifetime spousal benefits were found to be selected more frequently among those retirees with greater length of service within PERS ($p = .020$).

When retirees were classified by gender, males represented 55.5% of the population ($n = 409$). Cross-tabulations for the three general categories of payout options revealed that females elected no benefit or a partial benefit for the surviving spouse slightly more than one-half of the time, while male retirees chose the same options slightly less than one-half of the time. Of all respondents choosing the lifetime option, 72% were males and 28% were females. (See Figure 3.)

Reliance upon an insurance salesperson appeared to play a significant role. Those choosing a straight life annuity payout providing no ongoing spousal benefit considered the advice of an insurance salesperson to be more important than individuals in the other two groups ($p = .035$, $n = 271$). Average ranking (on a 1-5 scale) of 2.47

FIGURE 3

Payout Elections by Gender



compared with 1.97 for those electing lifetime spousal benefits and 2.13 for those electing temporary guarantees.

Finally, a health effect was evident in payout elections. Those retirees with a higher rating on the illness index selected a lifetime benefit (illness index = +.2378) for the spouse more frequently, while those who elected temporary (illness index = -.0497) or no benefits (illness index = -.2164) were generally in better health.

No differences in selecting payout options existed by criteria of wealth (assets) of participants, present income level or spouse's age.

Multivariate Relationship

Discriminant analysis was applied to identify the variables that are important in distinguishing among the individuals selecting each of the three classes of spousal provisions for payout of the PERS benefit—lifetime, temporary and none. This statistical technique takes linear combinations of the independent variables to form two equations that are in turn used to classify individuals into three distinct groups. For the PERS study, 45.1% of individual payout elections were correctly classified. While this proportion is modest, it is quite respectable for a decision that incorporates so many factors and has proven so difficult to explain consistently in prior studies.

Independent variables were selected to enter the discriminant analysis equations on the basis

of their discriminating power. In order of their appearance through this stepwise process, the significant variables were:

- Retirement age selected
- The priority given by the retiree to assuring the maximum possible rate of return on investments
- Illness index
- The monthly pension amount payable to the spouse based on his or her own employment.

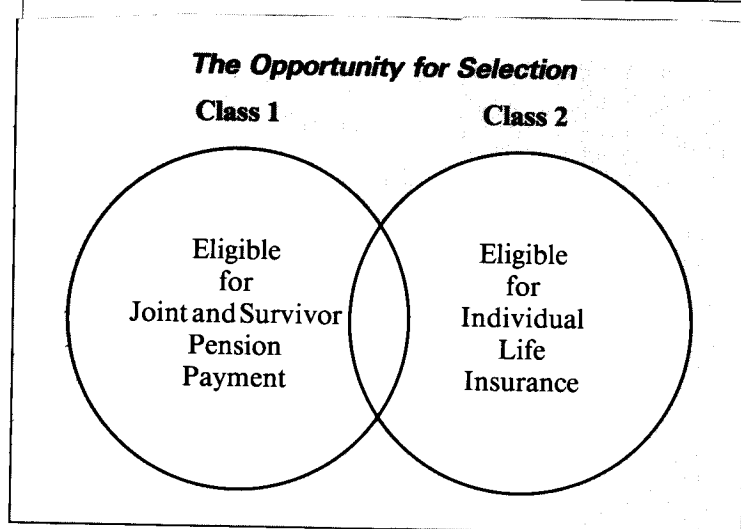
By far the most interesting fact uncovered in the discriminant analysis is the strength with which health appears as a factor in the type of benefit selected in a population where it had no predictive power with respect to the decision to retire. Variables reflecting the retiree's benefit amount, gender, education, use of outside advisers, other risk preferences, the couple's wealth, number of children and the importance of spousal influence on retirement decisions were not important.

Also of note is that the importance ranking given by retirees to "maximizing investment return" was one of only four variables to prove significant in the discriminant analysis used to categorize the type of pension payout selected. The significance of a stated risk preference illustrates the importance of attitudes as well as "hard facts" in describing retirement behaviors.

PENSION MAXIMIZATION

Direct marketing of life insurance to the retiree market is a relatively recent application, and it is

FIGURE 4



often referred to as *pension maximization* or *pension enhancement*. This strategy advocates that individuals about to retire purchase life insurance to provide for the income needs of survivors instead of electing a joint and survivor annuity option under an employer's pension plan. Upon retirement a single life annuity paying a larger monthly amount is selected; at death the life insurance policy provides the capital needed to support the survivor.² A previously published article by one of the present authors discusses the strengths and weakness of substituting life insurance for the joint and survivor annuity and shows how such a proposal should be analyzed (Nielson 1988).

The choice between pension payouts and private life insurance occurs because many retiring workers belong to two distinct classes or "pools" for the purpose of sharing the financial risks faced by a surviving spouse. Figure 4 illustrates that the members of these two classes may face different prices, different guarantees and different risks.

Each retiree then has the opportunity to select the arrangement that is most advantageous in his or her individual circumstances. While the analysis of this situation is complex and varies depending upon the actuarial assumptions and specific provisions of the employer's pension plan, some generalizations are possible. Theoretically, for participants in the PERS plan, life insurance works best

- If the spouse is younger than the retiree
- If the retiree's life expectancy is greater than "average" (e.g., retiree is female or a non-smoker)
- If the beneficiary's life expectancy is shorter than "average"

- If both the retiree and spouse have an interest in leaving an inheritance or charitable bequest.

These generalizations also apply in a typical plan, and at least one of these circumstances exists in every pension plan. Since the Supreme Court decisions in *Manhart*³ and *Norris*,⁴ pension plans are prohibited from using rates that differ for men and women; in all but a handful of states, gender differentiation in the rates for private life insurance is the norm.

The purchase of life insurance by 69.2% of those in the PERS study who considered its purchase implies at least two important messages for pension plan sponsors and their advisers. First, the popularity of private alternatives increases pressure to maintain current actuarial assumptions within the plan and to meet or exceed these assumptions. The pension plan is required by law to treat all employees as "average," while the private insurance market actively underwrites its risks and aggressively reflects differences among individuals in its pricing structure. Specifically, the healthiest employees and those employees with spouses in the poorest health can be expected to select against the pension plan; the resulting increase in the election of straight life annuities by the healthiest employees may precipitate an increase in annuity prices for that plan. Second, plan sponsors must expect employees to ask increasingly often about the advisability of the private insurance alternative. This obviously puts the employer in a difficult position, since most employers decline to provide advice on the election of a retirement payout option.

SUMMARY AND CONCLUSIONS

The population in this study was found to divide itself almost evenly among options that provided guaranteed lifetime income protection to the spouse, those that provided a temporary refund guarantee and those that provided no ongoing income to the spouse after the retiree's death. The results of this study strongly support the existence of adverse selection in the payout options chosen by retirees. The health of the retiree does more to explain the payout choice than does any other variable. Pension plan administrators and actuaries must monitor the effects of this adverse selection and respond to it.

Finally, while the results presented in this article indicate that retirees feel more strongly about providing adequately for spouses than do the

spouses themselves, this statement of apparent priority is contradicted when a significant number of spouses of retiring PERS employees will have no lifetime income payable under that or any other pension plan. The ability of retirees to make choices that adequately address their concerns about spousal support is questionable, as is the probable effectiveness of any new mandate that proposes to address this issue by strengthening the requirements for spousal consent. ◀

Endnotes

1. A QJS annuity pays a benefit for the life of the participant with an additional benefit—the survivor annuity—payable for the life of the participant's spouse. The survivor annuity must not be less than 50% of nor greater than the annuity payable during the joint lives of the participant and spouse. The spousal annuity must be continued even if the spouse remarries. The joint and survivor annuity must be at least the actuarial equivalent of the plan's normal form of benefit. The QJS form must be offered automatically to a married participant at retirement. The participant may elect to receive another form of benefit if the plan so provides; however, the spouse must consent in writing to the election, and the consent form must be notarized or witnessed by a plan representative (Allen *et al.* 1988, 99-101).

2. This sum can be paid out in any manner appropriate to the sophistication and circumstances of the beneficiary. A lump-sum payout can be used if the survivor is capable, willing and interested in managing the funds that will fund future living expenses. If that is not practical, the monthly income of lifetime or period certain settlement options may be elected.

3. *City of Los Angeles, Department of Water and Power v. Marie Manhart* (April 25, 1978).

4. *Arizona Governing Committee for Tax Deferred Annuity and Deferred Compensation Plans v. Norris* (July 6, 1983).

References

Allen, Everett T. Jr., Joseph J. Melone, Jerry S. Rosenbloom and Jack L. VanDerhei. 1988. *Pension Planning*, 6th ed. Homewood, IL: Richard D. Irwin.

Beehr, Terry A. 1986. "Process of Retirement: A Review and Recommendations for Future Investigations." *Personnel Psychology* 39 (Spring): 31-55.

Blostin, A. P., T. P. Burke and L. M. Lovejoy. 1988. "Disability and Insurance Plans in the Public and Private Sectors." *Monthly Labor Review* 111 (December): 9-17.

Brainard, C. H., and Blair M. Lord. 1980. "Joint and Survivor Annuity Options Under State Employee Retirement Systems: The Risk of Beneficiary's Prior Decease." *CLU Journal* (July): 17-23.

Burke, James W. 1990. "Most Employers to Offer Retirement Planning Aid." *Business Insurance* 8 (January): 3, 10.

Burkhauser, Richard V. 1979. "The Pension Acceptance Decision of Older Workers." *Journal of Human Resources* 14 (Winter): 63-75.

_____. 1980. "The Early Acceptance of Social Security: An Asset Maximization Approach." *Industrial and Labor Relations Review* 33 (July): 484-492.

Burkhauser, Richard V., and Joseph F. Quinn. 1983a. "The Effect of Pension Plans on the Pattern of Life Cycle Compensation." In Jack E. Triplett, ed., *The Measurement of Labor Cost*, 395-415. Chicago: The University of Chicago Press.

_____. 1983b. "Is Mandatory Retirement Overrated? Evidence From the 1970s." *Journal of Human Resources* 18 (Summer): 337-358.

Corbett, Richard. 1987. "Some Factors to Consider in Retirement Annuity Selection." *Benefits Quarterly* 3, No. 2: 52-55.

Drinkwater, Cynthia J. 1989. "State and Local Government Retirement Plans." *Employee Benefits Practices* (Second Quarter).

Employee Benefit Research Institute. 1986. "Economic Incentives for Retirement in the Public and Private Sectors." *EBRI Issue Brief* No. 57 (August).

England, Colin B. 1988. "How Much Retirement Income Do Employees Need?" *Benefits Quarterly* 4, No. 1: 1-5.

Gustavson, Sandra G., and James S. Trieschmann. 1988. "Universal Life Insurance as an Alternative to the Joint and Survivor Annuity." *Journal of Risk and Insurance* 60, No. 3 (September): 529-538.

Hatch, Laurie R. 1987. "Research on Men's and Women's Retirement Attitudes: Implications for Retirement Policy." In Edgar F. Borgatta and Rhonda J. Montgomery, eds., *Critical Issues in Aging Policy: Linking Research and Values*, 160. Beverly Hills, CA: Sage Publications.

Johnson, Mark. 1991. Interview, 4 March. Portland, Oregon: Milliman & Robertson, Inc.

Johnson, Richard P., and Harold C. Riker. 1981. "Retirement Maturity: A Valuable Concept for Preretirement Counselors." *Personnel and Guidance Journal* (January): 291-295.

Lovejoy, L. M. 1988. "The Comparative Value of Public and Private Pensions." *Monthly Labor Review* 110 (December): 18-26.

Milliman & Robertson, Inc. 1990. *Oregon Public Employees Retirement System Actuarial Valuation as of December 31, 1989* (28 November).

Monahan, Deborah J., and Vernon L. Greene. 1987. "Predictors of Early Retirement Among University Faculty." *Gerontologist* 27, No. 1 (February): 46-52.

Nielson, Norma L. 1988. "Testing Life Insurance as a Substitute for Survivor's Pension Benefits." *CLU Journal* 42, No. 2 (March): 56-62.

Nielson, Norma L., and Terry A. Beehr. 1991. "Retirement Income for Surviving Spouses." Research report submitted to the AARP Andrus Foundation (June).

Nielson, Norma L., and Arnold F. Shapiro. Forthcoming. "Pricing the Surviving Spouse Risk at Retirement: Some Actuarial Considerations." *Journal of Risk and Insurance*.

Oregon Public Employees Retirement System. 1991. *1990 Comprehensive Annual Financial Report*. Portland, Oregon.

Society of Actuaries. 1983. "Development of the 1983 Group Annuity Mortality Table." *Transactions of the Society of Actuaries* 35: 859-899.

Turner, John A., and Daniel J. Beller, eds. 1989. *Trends in Pensions*. Washington, DC: U.S. Department of Labor.

Viscusi, W. Kip, and Michael J. Moore. 1989. "Rates of Time Preference and Valuations of the Duration of Life." *Journal of Public Economics* 38: 297-317.

Weber, Elke U., C. Anderson, and M. H. Birnbaum. Forthcoming. "Sign-Dependent Configural Relative Utility for Risk as Well as Attractiveness Judgments." *Organizational Behavior and Human Decision Processes*.

Wiatrowski, W. J. 1988. "Comparing Employee Benefits in the Public and Private Sectors." *Monthly Labor Review* 111 (December): 3-8.