Annuity Options in Public Pension Plans

Robert L. Clark and Janet Raye Cowell

Prepared for presentation at the
Pension Research Council Symposium, May 5 - 6, 2016
"Financial Decision Making and Retirement Security in an Aging World"

 We acknowledge the helpful suggestions and comments of Emma Hanson, Sam Watts, and Matthew Leatherman. Partial support for Clark in the preparation of this paper was provided by the Sloan Foundation, Grant Number 2013-10-20.

Annuity Options in Public Pension Plans

Robert L. Clark and Janet Raye Cowell

Abstract

The paper will review available data on the annuity choices offered to retirees who participate in defined benefit (DB) plans. DB plans are most commonly offered by state and local governments to their employees, and information on annuity options is readily available. We will examine all state pension plans that cover general state employees and teachers, and we will develop a table showing the similarities and differences across these approximately 80 separate state retirement plans. We will contact the managers of a subset of these plans and request information on the proportion of retirees selecting each of the annuity options. Where possible, we will compare annuity options in the public sector to those offered by private sector employers. The paper will also include a review of the empirical literature on who chooses the various annuity options offered in DB plans. Finally, we will consider the policy implications of plan design and how this affects the types of annuities offered to retirees.

Robert Clark
Stephen Zelnak Jr. Professor
Poole College of Management
North Carolina State University
Research Associate of the National Bureau of Economic Research

Janet Cowell
Treasurer of the State of North Carolina

Following the economic downturn beginning in 2007-08, many public pension plans were faced with significant funding deficits and dramatic increases in employer contribution requirements due to substantial investment losses. In the wake of this recession, a widespread discussion regarding the long-term sustainability of defined benefit pension plans in the public sector emerged in the political and academic arenas, garnering considerable attention and prompting many states and municipalities to change the design of their retirement benefits, curtail the generosity of benefits, or even close their pension plans entirely. Consequently, since funding issues and the long-term viability of defined benefit pension plans have commanded virtually all attention dedicated to retirement policy questions, the other components that contribute to a cost-effective and valuable pension plan have largely been ignored.

Public pension plans, in many ways, are like 1950s and 1960s ranch houses. Many individuals who grew up in these mid-century ranches are foregoing the new-construction homes and choosing to update older, more established ones by removing walls, re-doing kitchens and creating high-quality modern living space. Similarly, pension plans have good, strong fundamentals -- well-funded, relatively conservative accounting assumptions, and economical management. Like those solid, older homes, they need updating—and not demolition.

We believe that this presents an opportunity because the vast majority of public sector workers are covered under existing pension plans that do not appear to be in jeopardy of elimination. These plans use fiscally sound funding policies that promote funding sufficiency, intergenerational equity, and stability of contribution rates.[1] Despite their solid design

[1] There are three broad objectives when establishing a funding policy for a public pension plan: Sufficiency - The funding target should be the value of retirement benefits accrued to date. Intergenerational equity – taxpayers should pay for workers' retirement benefits while those workers are providing their services – fund for benefits over the worker's

foundation and continued viability, these plans must be evaluated and continually updated to ensure that these plans meet the needs of current and future public sector workers and retirees.

The following study investigates a technical but important issue affecting almost all retirees in public employee retirement plans – the choice of annuity payment option. Typically, the retirement benefit in a defined benefit plan is a function of years of service, final average salary, and age at retirement, and most public retirement plans offer retirees a menu of options for how this benefit will be paid. The annuity option that retiring employees choose may have significant long-term financial implications for the retiree and her household.

Concern has been expressed that pension participants in the private sector request lump sum distributions instead of selecting annuities provided by the plan (Mitchell, et al 1999; Brown, 2001). As a result, retirees must manage their resources and bear both investment and longevity risk. This is less of an issue in the public sector as most individuals who retire from public employment select one of the annuity options offered by the pension plan. The annuity options offered by public retirement plans serve many retirees well by providing lifetime benefits, thus eliminating the risk that an individual might outlive her retirement saving. An emerging question is whether the options currently offered public retirees will be optimal as the population continues to age, life expectancy increases, and retirement pattern change. This paper describes current annuity options and then explores several modified annuity options that could potentially address these emerging issues and improve public sector workers' utilization of retirement benefits.

We begin with a review of the annuity options offered by 85 large, state-managed retirement plans for public employees. The lifetime pattern of payments of these annuity options

---

career. Stability of contributions – while stable contributions are easy to budget for, stability should not be achieved at the expense of the first two.

will differ considerably over the retirement years. Next, we report the results of a survey sent to the Treasurers (or comparable official) of each state requesting information on the proportion of retirees selecting each option offered under the public plans in their states. We also examine whether the current annuity options optimally serve the needs of public employees. Finally, we examine two new types of annuity options that could enhance the likelihood that public retirees will be able to achieve a desirable standard of living throughout their retirement.

I. Retirement Benefit Options in Large, State-Managed Retirement Plans

In order to determine the existing options offered by public sector retirement plans, we examine the 85 state-managed retirement plans included in the 2012 Comparative Study of Major Public Employee Retirement Systems prepared by the Wisconsin Legislative Council (2013). [2] We then reviewed the websites of each of these plans and created a list of the various annuity options offered by the plans. The plans included in this review cover general employees and teachers; pensions offered to police, firefighters, and elected officials are excluded from our analysis.[3] Among these 85 plans, 13 cover only state employees, 27 cover only teachers, eight

[2] The Wisconsin report compares important characteristics of retirement plans covering major state and local retirement systems in the United States. Similar reports have been prepared bi-annually since 1982 and are a useful source of pension characteristics and how they have evolved over the past 30 years. Key characteristics of plans include normal and early retirement provisions, contribution rates, vesting requirements, benefit formulas, COLAs, and actuarial methods and assumptions. Many public plans have specific features that vary by when employees were hired. For these plans, the report describes the features that apply to the most recently hired employees.

[3] While these plans for specific types of employees are not included in the Wisconsin survey, we did receive information from some of the states indicating the proportion of retirees in these plans that selected specific types of annuities. See Appendix Table 1.

cover only local employees, 14 cover state and local employees, three cover state employees and teachers, and 20 include state employees, local employees, and teachers.

Figure 1 illustrates the number of plans that offer each of the most frequently available annuity options.[4] Using assumptions concerning age-specific life expectancies of the retirees and beneficiaries and the plan's assumed discount rate or rate of return, each retirement system attempts to calculate the benefits under each of the payment options so that the expected present value of each annuity option is the same. Thus, the monthly benefit will be higher if the retiree selects a single life annuity (often referred to as the maximum allowance) and lower if a joint and survivor benefit is chosen.[5] Public plans usually offer separating employees the option to request a lump-sum distribution. Unlike lump-sum options in the private sector, this distribution option in most public plans is based on employee contributions compounded over time using a specified interest rate.[6] Public sector employees who are eligible for an immediate benefit upon terminating employment rarely request a lump-sum distribution.

[Figure 1]

Every plan offers an annuity in which the retiree is paid a monthly benefit based on a formula specified in the plan. In Figure 1, this option is labeled the maximum allowance and is

[4] The options available to current retirees in each of the plans are reported in Appendix Table 2.

[5] The benefit paid to the retiree who selects a joint and survivor option will depend on the age of the beneficiary and benefit paid to the survivor relative to the benefit payable while the retiree was alive.

[6] In the private sector, most defined benefit plans do not require employee contributions. The lump sum distribution is based on a calculation of the discounted present value of the promised annuity.

basically a single life annuity in which all payments cease with the death of the retiree.[7] Every plan also offers some type of joint and survivor annuity option (J&S). These annuities provide a lower benefit than the maximum allowance during the life of retiree but then continue to pay monthly benefits throughout the remaining life of the beneficiary. Plans usually offer several versions of the joint and survivor benefits. The options specify the benefit of the survivor as a percent of the benefit paid to the retiree prior to her death. Typically, the benefit paid to the survivor represents a specified percentage of the benefit paid to the retiree during her lifetime. Reviewing the joint and survivor options shown on the plan websites, we find that most retirement systems offer a range of J&S payout options (see Appendix Table 2). Among the plans in our sample, 77 plans allow retirees to select a 100 percent benefit for the beneficiary while 78 plans have a 50 percent option. In addition, 33 plans have a 75 percent option and 7 plans have a 25 percent survivor option. Finally, 16 plans have additional J&S options. For example, Virginia's SRS allows retirees to choose any whole percentage of the retiree benefit to be paid to the survivor between 10 and 100 percent. The larger the benefit paid to the survivor, the lower the initial benefit that is paid during the life of the retiree.

Slightly less than half of the plans have an annuity option that provides a single life annuity with a guaranteed number of payments. If the retiree dies before all of the guaranteed payments are made, the remaining payments will be made to the named beneficiary; however, after the specified number of payments, the survivor does not receive any further benefits from the retirement system. Of course, this option provides lower monthly benefits than that the maximum benefit option.

[7] The maximum benefit allowance in some plans includes a provision to provide a payment to the survivor if the total pension payout has not exceeded the worker's contributions to the plan.

Another option offered by 14 plans allows retirees to select a partial lump sum distribution. These retirees receive an immediate payout reflecting some portion of the present value of their benefit. By accepting this distribution, the retiree agrees to a permanently lower monthly benefit from the retirement system in the form of a single life annuity. The lump sum payment is typically specified as a percent of the annuity or a number of months of benefits. For example, Georgia ERS restricts the lump sum to between 1 and 36 months of the normal benefit and Ohio PERS/STRS, Mississippi PERS, Virginia SRS and Texas ERS have similar options. Kansas PERS Tier 2 allows the retiree to select a 10, 20, or 30 percent option which provides a lump sum equal to the percentage of the present value of the maximum allowance and requires a corresponding reduction in the size of the monthly benefit. Some states limit eligibility for this option to individuals retiring at or after their full retirement date.

Twenty plans have an annuity option called Social Security Leveling.[8] This option requires retirees to report to the retirement system their expected Social Security benefit at specified age. Most of the state plans with the Social Security Leveling options specify that age 62 is used to determine the Social Security benefit. However, Idaho PERS and Illinois SRS specify that the leveling aging is the full retirement age for Social Security and North Dakota TRF allows either age 62 or the full retirement age to be used in the calculation. Virginia SRS allows the worker to choose any age between 62 and the Social Security full retirement age in this option while Alaska PERS uses age 65 in its calculation; however, this option is only available to individuals who entered the system prior to July 1, 1996. Workers selecting this option receive a higher initial benefit from their state pension, compared to the maximum benefit

[8] Workers in 17 of the 85 plans are not covered by Social Security. Ten of these plans in which participants are not included in Social Security cover only teachers.

option, however, the annual pension benefit is reduced when the individual reaches the specified leveling age, at which time the retiree is expected to claim a Social Security benefit. The idea is that the retiree will receive the same total retirement benefit (pension plus Social Security) before and after the age given for claiming Social Security benefits.

This option appeals to some individuals because many public employees retire prior to age 62 and being eligible to claim Social Security benefits. To these early retirees, the higher initial pension benefit can seem attractive. One concern with this option is that by linking the reduction in the pension benefit to age 62 retirees are encouraged to claim Social Security benefits as soon as they become available at age 62, which may not be optimal for all retirees. The pension benefit in the leveling option is also based on the single life of the retiree and does not provide for any beneficiary payments after the death of the retiree.

II. Choice of Annuity Options by Recent Retirees

Figure 1 shows that public pension plans offer retirees a menu of payment options. The key question for this study is whether better options may be possible for workers in the twenty-first century in the context of an aging population and increasing life expectancy. To understand the implications of current annuity options and their impact on well-being in retirement, we first need data on the proportion of retirees selecting each of these annuity options. To obtain this information, we sent an e-mail request to the 50 State Treasurers and comparable officials requesting data on the proportion of recent retirees who selected each of the options offered by

the plans in their state. The e-mail provided a link to an on-line page where the plan administrator could report the distribution of retirees across the options.[9]

Ten states covering 13 plans responded to our request for information on the annuity options selected by their retirees. Table 1 presents the responses from the survey of plan managers by showing the proportion of recent retirees that have selected each of the options provided by their retirement plan. In general, the most popular annuity option in most of the plans is the maximum allowance. Over 60 percent of retirees in the Mississippi PERS, South Carolina SCRS, and Washington PERS select this single life annuity while between 50 and 60 percent of retirees opt for this annuity type in California TRS, North Carolina TSERS, and North Carolina LGERS. With the exception of Delaware which reports that 100 percent of its retirees select a J&S annuity, the lowest proportions of retirees selecting the maximum allowance are in Iowa and Nebraska. In these states, almost a third of retirees select the guaranteed payment period and about 20 percent choose the partial lump sum option. Each of these options requires the retiree to select the single life annuity and then adjusts the monthly payment to offset the expected payments associated with the option. Neither of these options provide the retiree's beneficiary a benefit for life.

[Table 1]

All of these options provide a retirement benefit to retirees for the duration of their lives but, in general, do not provide any benefit to beneficiaries. The J&S options enable retirees to

[9] A copy of the e-mail sent to the State Treasurers is included in Appendix B. The e-mail requested information on the proportion of retirees selecting each of the annuity options. In some cases, certain options may no longer be offered so we observe some differences in the annuity options that are shown in Appendix Table 2 and the responses to the survey presented in Table 1.

engage in long term planning for a beneficiary, typically a surviving spouse.[10] With the exception of Delaware SEPP that reported 100 percent of its retirees selecting a J&S option, only in Wyoming WRS and California TRS does the proportion of retirees selecting a J&S option approach 50 percent. All of the other benefit options are based on single life annuities and provide little in the way of expected lifetime income protection to surviving spouses. Since public retirement plans are not subject to ERISA, in general, there is no requirement that the interest of a spouse be considered when the retiree is selecting a distributional option.

Five of the 12 plans in which workers are also covered by Social Security offer a Social Security leveling option. Among these plans, only in North Carolina is the incidence of this option greater than 10 percent of retirees. The partial lump sum option seems to be a desirable option for retirees. Only Iowa PERS, Mississippi PERS, and Washington TRS offer retirees the option of partial lump sum distributions; however, between 20 and 40 percent of retirees in each of these plans select this option. Five states offer a guaranteed payment period annuity option. This distribution option is popular in Iowa and Nebraska where almost one third of retirees select this option; however, the proportion of retirees in Mississippi, South Carolina, and Wyoming selecting this option is less than 10 percent.

Are these options the best potential payout options for public retirees given the early ages at which many retire and the increases number of years that many will spend in retirement? Many public retirees return to work so their need for immediate income from their pension may be less pressing compared to older persons who are less likely to return to work after retirement. Economists and policy analysts argue that delaying the start of Social Security benefits is an

[10] Brown and Poterba (2000) examine the importance of joint life annuities and the demand for this type of annuity by married couples.

excellent method of enhancing retirement income; however, the Social Security leveling option tied to age 62 encourages those selecting this option to claim benefits as soon as they are eligible. In the following analysis, we develop two annuity options that could enhance the probability that public retirees will achieve their retirement goals.

III. New Annuity Options for Public Retirement Plans

We now examine two potential new annuity options that could enhance well-being in retirement for some households. One new option is to allow retirees to defer receiving their retirement benefits to a specified age with the provision that the retirement system would recalculate the monthly benefit so that the lifetime expected present value is the same as if benefits had begun at the time of retirement. In the following, we refer to this option as a "deferred annuity". This option could appeal to young retirees who are in good health and expect to shift from their career public job to new employment.[11] The second option we evaluate is for public retirement systems to modify the Social Security Leveling options as they are applied in most states to allow individuals to select later target ages for claiming Social Security. We call this a "flexible Social Security leveling." This option could appeal to young retirees who do not plan to re-enter the labor force after retirement but would like to maximize their retirement income. Both options should provide increased income in the later years of retirement compared to currently available options.

Deferred Annuity

[11] Cahill, Giandrea, and Quinn (2012 and 2015) use the Health and Retirement Survey to document this type of return to work after retirement from a career job.

Many career public employees retire from their state or local job at relative young ages in their 50s or early 60s.[12] Many of these young retirees move directly, or after a short period, into bridge jobs or new careers.[13] Clark et al (2015) report 85 percent of public employees age 50 to 59 in North Carolina indicate that they plan on working after retiring from their current state or local government job. Younger retirees are much more likely to anticipate a period of employment following retirement from their public sector job. Depending on whether they work full or part-time, these employees may have sufficient income in the years immediately following their retirement from the public sector.

For some, starting their public pension immediately upon retirement allows them the freedom to search for less stressful jobs which may also pay lower salaries. But for others, post-retirement jobs may be equally rewarding and as a result, they may have less of an immediate need for their pension income. Today's pension rules in public retirement plans essentially provide incentive for retirees to immediately start their retirement benefit when they separate from their career employer, once they attain the age and service needed for an unreduced benefit.

---

[12] The retirement plans included in this study typically have several age and service requirements that allow career employees to retire in their 50s with unreduced benefits. In 2012, 40 plans had normal retirement requirements that allowed workers with 30 or fewer years of service to retire at age 55 with unreduced benefits. Another 11 plans determine eligibility by the sum of an individual's age and service ("Rule of 85" or "Rule of 80") which allows career employees who began their employment in their 20s to receive unreduced benefits in their 50s. Public retirement plans are now moving to increase normal retirement ages. According to Wisconsin Comparative Study of major Plans, between the 2010 and 2012, 29 plans increased the requirements for normal retirement.

[13] Clark and Morrill (2016) provide a comprehensive review of retirement transitions including workers remaining on career jobs until complete retirement, shifts into phased retirement, and movement into bridge jobs or self-employment.

If the start of benefits is delayed by one year, the retiree loses a year of benefits while future annual benefits are unaffected.

The deferred annuity option would offer retirees the option of selecting some future year to start retirement benefits with the annual benefit being recalculated so that the expected present value of lifetime retirement benefits remain the same regardless of when they are started. Using the restriction that the new option is cost neutral to the system, the increase in annual benefits would be an easy calculation using the same assumptions currently used by the system to determine other benefit calculations. This new annuity option should be cost neutral to the system in the same manner as joint and survivor annuities are cost neutral relative to the maximum benefit options in public sector retirement plans.

To calculate the deferred annuity option, the plan would determine an annual amount payable at a later date which has the same present value as benefits that would have started when the worker retired from public employment. A simple example illustrates the impact on annual retirement benefits of postponing the start of annual payouts based on our deferred annuity option. Assume that a public worker who is leaving public employment at age 55 and has the option to start receiving a benefit of $30,000 immediately (the maximum allowance) or to receive a higher annual benefit beginning at some point in the future. She can expect to live until age 85 or 30 years of benefits in retirement. Table 2 shows the benefit if the worker selects the deferred annuity option and delays the start of benefits for five years until age 60 or 10 years until age 65.

If the retiree defers the start of benefits under the deferred annuity option until age 60, she could anticipate a life annuity beginning at that time of approximately $39,233 using a real

interest rate of 3 percent.[14] If benefits are delayed further until age 65, the annual benefit would increase to $53,351. Of course, the retiree does not have access to any benefits during the first five or 10 years while the benefit is being deferred. For public employees who leave their career job in their 50s and shift to new employment, the deferred annuity could be an effective means of enhance retirement income. Table 2 shows that the increase in annual benefits is greater if the system used an interest rate consistent with its assumed rate of return or discount rate used in calculating the present value of liabilities.

[Table 2]

The deferred annuity option would give retirees more flexibility in their retirement planning and would allow some retirees to shift income from a period of continued employment in bridge jobs to later in their retirement. Clark et al (2015) illustrate the importance of bridge jobs and work after retirement for public retirees in North Carolina. This adjustment to the timing of retirement income might help retirees finance health care costs, which often rise with advancing age and provide increased protection against the erosive effect of inflation over 20 or 30 years in retirement.

[14] This calculation is based on the present value of $30,000 per year for 30 years is $588,013. If the retirement system credits this balance with a 3 percent per year return for 10 years, the account balance would be $793,734 at age 65. Again using a discount rate of 3 percent, the annual payout for an expected 20 years would be $53,351. Thus, the increase in the annual retirement benefit is due to the increase in the account balance from delaying the start of the annuity and the shorter payout period associated with a higher age for starting the annuity. A 3 percent rate discount rate is consistent with the rate that most economists would recommend as an approximation of the real interest rate. Most public pension plans use a much higher rate, typically between 7 and 8 percent. Thus, we also provide the impact of using a higher interest rate consistent with the assumption adopted by most plans.

Flexible Social Security Leveling

Another group of public sector employees retire at relatively young ages and permanently leaves the labor force. These individuals need to access their pension benefits immediately upon retirement from their career job. The Social Security leveling option currently included in 20 public pension plans allows retirees to receive an annual benefit larger than the maximum benefit option prior to the specified age, typically 62, but then the pension benefit declines when the individual is eligible to claim early Social Security benefits. The idea is to provide retirees a constant total annual benefit (pension plus Social Security) from retirement until death. While retirees are not required to claim Social Security at age 62, if they do not, their annual income will fall. Thus, there is a strong incentive for retirees who have chosen the Social Security leveling option to claim benefits at age 62.

Social Security currently specifies age 66 as the age for full retirement benefits and imposes penalties for claiming benefits between 62, the early retirement age, and 66. Similarly, the system currently provides delayed retirement credits for postponing the start of benefits up to age 70.[15] Claiming benefits prior to age 66 results in a reduction in monthly benefits of 5/9 of 1 percent per month for the first 36 months and 5/12 of 1 percent for each additional month.[16] Delaying claiming benefits after age 66 increases benefits by 8 percent per year up to age 70. Assume that if benefits are begun at the full retirement age of 66, the monthly benefit will be

[15] Under current law, the full retirement age is schedule to rise to 67 for individuals born in 1960 or thereafter.

[16] Knoll and Olsen (2014) describe how these reductions for claiming early and increases for delaying claiming after the full retirement age have changed over time to provide increased incentives for delaying the start of benefits. Based on their analysis and review of the literature, they conclude that "delaying the claiming of Social Security retirement benefits is now recognized as an important way to enhance retirement security.

$1,000. If benefits are claimed at 62, the earliest age of eligibility, the monthly benefit is only $750 per month or a 25 percent reduction in monthly benefits for the rest of one's life. Despite these penalties for early claiming, almost half of all individuals claim benefits at age 62.[17] In contrast, if benefit claiming is delayed until age 70, the monthly benefit would be $1,320 or 32 percent greater than would be true if benefits are begun at age 66. Comparing the benefit at age 70 benefit to the benefit at 62, the monthly benefit is 76 percent greater when benefits are claimed at age 70.[18]

Recent studies have shown that, under current law, the expected present value of lifetime Social Security benefits rises as claiming is postponed for each month after the individual reaches age 62. We first review several studies on the relationship between claiming age and the value of Social Security benefits and then present a new option for a flexible Social Security leveling annuity.

Shoven and Slavov (2014 a,b) illustrate that for most households delaying the start of Social Security benefits results in a higher lifetime present value of these benefits. They also point out that the increase in lifetime benefits resulting from a delay in claiming has been increasing due to changes in Social Security rules, i.e. increase in the delayed retirement credit after the full retirement age, lower real interest rates, and increases in life expectancy for individuals in their 60s. Shoven and Slavov (2013, p.1) states the "With today's life expectancies and today's extremely low interest rates, it is in almost everyone's interest to delay the

[17] Munnell and Chen (2015) find, using a cohort analysis, that the proportion of recent cohorts claiming benefits at age 62 has fallen to 36 percent for men and 40 percent for women.

[18] The impact of claiming age on monthly benefits is nicely shown in "When to Start Receiving Retirement Benefits," https://www.ssa.gov/pubs/EN-05-10147.pdf

commencement of Social Security. For many people, delaying to 70 is the value maximizing strategy."[19]

Instead of claiming Social Security benefits at age 62, Goda, et al (2015) examine how retirees could draw on their assets in retirement saving accounts (IRAs and 401(k) accounts) to fund consumption for several years prior to claiming Social Security benefits. Because the lifetime expected present value of Social Security benefits is greater when individuals wait to begin claiming their benefit until an older age, drawing on personal saving, such as the retirement savings accounts mentioned above, after age 62 and waiting to claim Social Security benefits at older ages will yield higher annual income in retirement.

A flexible Social Security leveling annuity would allow retirees to select any age between 62 and 70 for the target date on which the pension annuity would decline and Social Security benefits would begin.[20] This option would use the same assumptions currently used to derive the pension annuity before and after age 62 and thus, should be cost neutral to the system. If the lifetime present value of Social Security benefits rises with delayed claiming while the present value of the pension benefits is held constant, then total annual income should be higher if Social Security leveling is based on a later retirement age.

IV. Conclusion - Annuity Options for an Aging Population

State and local retirement plans typically offer retirees a series of annuity options that allow individuals to sell the option that best fits their own situation and income needs.

---

[19] Shoven and Slavov (2013) provide a detailed review of claiming options and how delaying the start of Social Security benefits increases lifetime benefits.

[20] This option is similar to the one used by Virginia SRS except we would allow the individual to specify any age between 62 and 70 for the calculation of retirement benefit.

Increasing life expectancy suggests some new options are needed. Specifically, can retirement systems develop cost neutral payout options that will allow retirees to have greater resources in the second half of their retirement? The deferred annuity option would allow young retirees who are moving to new jobs the ability to defer the start of their pension, thus, providing for a greater benefit in future years. Our proposal of a flexible Social Security leveling option should provide greater annual benefits for early retirees throughout their retirement. This option takes advantage of the fact that the present value of Social Security benefits increase if claiming is delayed for most individuals.

The wider context for these decisions is important. Amidst the panic and uncertainty after the economic downturn, many public pension plan administrators and lawmakers came to the conclusion that modifying or even closing their existing defined benefit plans and, in many cases, replacing them with alternative retirement plan types would provide cheaper, more sustainable retirement benefits. These pension reforms have ranged from simple reductions in benefit generosity, including benefit multiplier reductions or increased normal retirement ages, to a more drastic restructuring of benefit design. Such changes have typically aimed to shift some or all of the investment and longevity risk associated with the retirement benefit onto the employee and protect the employer against risk, market volatility, and further increases in pension costs. For example, in place of traditional defined benefit plans, many states have adopted "Hybrid" plans that include a defined benefit component and a defined contribution component, thereby shifting a portion of the retirement plan's investment risk to the employee. However, the efficacy of these pension reforms in minimizing employer costs and risks, as well as the broader impact on public sector retirement security and human resource needs, remain to

be seen. As is the case with many public policy reforms, time, experience, and future research will reveal the impact of these efforts on this emerging shift in the retirement paradigm.

Meanwhile, the traditional defined benefit plans unaffected by the most recent wave of reform must be evaluated and continually updated to ensure that these plans meet the needs of current and future public sector workers and retirees. Ultimately, the true value of a public employee benefits system to most citizens is that it is a tool that will help government employers recruit and retain qualified personnel to deliver essential services. Undeniably, this policy goal is a tradeoff with the government's cost of providing the plan. It is essential to administer the plan's benefits in a manner that encourages optimal economic choices among public employees in the face of evolving economic circumstances and preferences; modernization of this benefit structure with a longstanding tradition of fiscal integrity and retirement security to ensure its flexibility and suitability to the modern public workers' and retirees' needs will ensure the continued value, equity, and cost effectiveness of these plans.

Renovation is a viable path forward for these plans. In many cases, it makes much more sense to renovate pension plans rather than tearing them down. Just as many solid, older homes are waiting for an injection of new energy, waiting for a different generation to occupy, public pension can and should be adjusted and modernized.

This study highlights one policy topic within the larger design of these plans that effectively demonstrates the invaluable role that independent policy and economic research play in informing pension reform. Reinventing pension administration requires adequate time and resources be devoted toward fully understanding the costs, benefits, efficiencies, and opportunities with the current system. Any changes to current public sector retirement plans, whether an attempt at modernization or a fundamental restructuring of benefit design, that do not

first consider the extent to which the current system meets its members' needs and provides acceptable value for each dollar spent may well yield undesirable outcomes and produce unanticipated, potentially harmful fallout for public employers, employees, and taxpayers alike.

REFERENCES

Brown, Jeffrey and James Poterba. 2000. "Joint Life Annuities and the Demand for Annuities by Married Couples," *The Journal of Risk and Insurance*, 67(4): 527 – 553.

Brown, Jeffrey. 2001. "Private Pensions, Mortality Risk, and the Decision to Annuitize," *Journal of Public Economics*, 82(1): 29 - 62.

Cahill, Kevin, Michael Giandrea, and Joseph Quinn. 2012. "Older workers and short-term jobs: patterns and determinants," *Monthly Labor Review*, 135(5): 19-32.

Cahill, Kevin, Michael Giandrea, and Joseph Quinn. 2015. "Retirement Patterns and the Macroeconomy, 1992 - 2010: The Prevalence and Determinants of Bridge Jobs, Phased Retirement, and Re-entry among Different Cohorts of Older Americans," *The Gerontologist*, 55(3): 384-403.

Clark, Robert, Robert Hanmond, Melinda Morrill, and Aditi Pathak. 2015. "Working after Retiring from Career Jobs: Worklife Transitions of Public Employees in North Carolina," paper presented to 2015 SIEPR Conference *Working Longer and Retirement*, Stanford University, October 2015.

Clark, Robert and Melinda Morrill. 2016. *Extending Worklife: Employer Interest and Concerns*, North Carolina State University Working Paper.

Goda, Gopi Shah, Shanthi Ramnath, John Shoven, and Sita Slavov. 2015. "The Financial Feasibility of Delaying Social Secruity: Evidence From Administrative Tax Data," NBER Working Paper No. 21544.

Knoll, Melissa and Anya Olsen. 2014. "Incentivizing Delayed Claiming of Social Security Retirement Benefits Before Reaching the Full Retirement Age, "*Social Security Bulletin* 74(4), 1-31.

Mitchell, Olivia, James Poterba, Mark Warshawsky, and Jeffrey Brown. 1999. "New Evidence on the Money's work of Individual Annuities," *The American Economic Review*, 89(5): 1299-1318.

Munnell, Alicia and Anqi Chen. 2015. *Trends in Social Security Claiming*, Center for Retirement Research at Boston College, Number 15-8.

Shoven, John and Sita Slavov. 2013. *Efficient Retirement Design: Combining Private Assets and Social Security to Maximize Retirement Resources.* http://siepr.stanford.edu/system/files/shared/Efficient_Retirement_Design.pdf

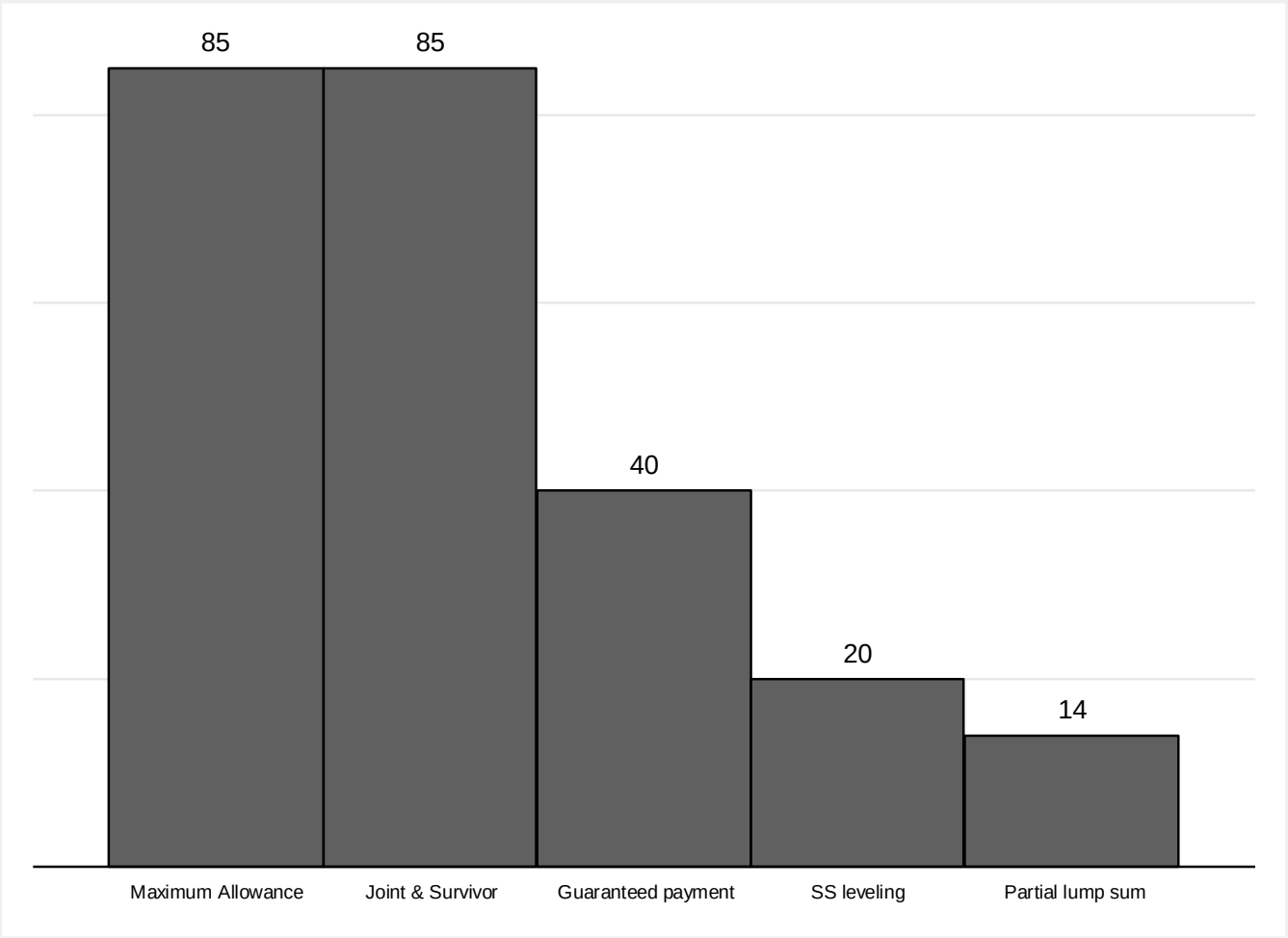
Shoven, John and Sita Slavov. 2014a. "Does It Pay to Delay Social Security? *Journal of Pension Economics and Finance* 13(2): 121-144.

Shoven, John and Sita Slavov. 2014b. "Recent Changes in the Gains from Delaying Social Security," *Journal of Financial Planning* 27(3): 32-41.

Wisconsin Legislative Council. 2013. "2012 Comparative Study of Major Public Employee Retirement Systems," Madison, WI. http://docs.legis.wisconsin.gov/misc/lc/comparative_retirement_study/2012_retirement.pdf

Figure 1: Annuity Options in State managed Retirement Plans

Source



Notes: Maximum Allowance refers to the option that pays the highest monthly benefit to a retiring member of a plan. This benefit is a lifetime benefit paid to the retiree on a monthly basis. At the death of the retiree, all monthly benefits cease. This type of benefit is often called a single life annuity. In some plans, the remaining balance due to employee contributions may be paid out in a lump sum to a designated beneficiary at the death of the retiree.

Joint & Survivor refers to the option that pays a reduced benefit over the life of a retiree in return for allowing a designated beneficiary to receive a percentage of the benefit after the retiree's death. Plans often have various options with the survivor benefit being equal to 100%, 75%, 50%, or 25% of the benefit payable during the life of the retiree. Modified Joint & Survivor is an available provision for some of these plans where monthly payments increase to the amount payable under the maximum allowance upon the death of the beneficiary.

Guaranteed payment refers to the option that guarantees a certain number of payments to the retiree. If the retiree's death occurs before receiving all of the monthly payments, the remaining payments are made to the beneficiary until all payments have been made.

Social Security leveling refers to the option that pays larger monthly payments until the retiree is eligible for Social Security at age 62. When the retiree becomes eligible to claim an early Social Security benefit the monthly payments from the pension are reduced to a lower amount so the total retirement income (pension + Social Security) remains the same. Finally, Partial lump sum refers to the option that pays a one-time lump sum payment of a portion of the retiree's retirement benefit, plus a reduced monthly benefit payable for the retiree's lifetime.

Table 1. Percent of Retirees Selecting Annuity Options

State	Plan	Maximum Allowance	Joint & Survivor	Social Security Leveling	Guaranteed Payment	Partial Lump Sum
California	PERS	44.5	37.3	1.3	N/A	N/A
California	TRS	52.1	46.9	N/A	N/A	N/A
Delaware	SEPP		100	N/A	N/A	N/A
Iowa	PERS	9.4	38.2	0.4	32.8	19.2
Maryland	SRPS	40.0	34.0	N/A	N/A	N/A
Mississippi	PERS	65.8	22.0	N/A	7.6	21.1
Nebraska	SPP	14.1	38.8	N/A	30.2	N/A
North Carolina	TSERS	56.2	25.9	17.9	N/A	N/A
North Carolina	LGERS	55.7	34.6	9.7	N/A	N/A
South Carolina	SCRS	64.3	30.4	4.6	0.4	N/A
Washington	PERS	65.2	34.8	N/A	N/A	N/A
Washington	TRS	38.8	21.4	N/A	N/A	39.8
Wyoming	WRS	43.1	52.9	N/A	4.1	N/A

Data provided by state plans in response to Cowell's e-mail sent to State Treasurers. In some cases, plan managers reported retirees selecting annuity options that are not shown on websites as being available to current retirees. This difference could be due to annuity options that were offered to individual hired at earlier dates. Plans often have various tiers that cover individuals hired at various times. The request to the Treasurers was to provide information on the proportion of retirees selecting each of the options.

California TRS participants are not included in Social Security.

Table 2. Impact of Deferred Annuity

Annuity Option	Annual Payout	PV @ 55	PV@ 60	PV@65
Maximum Allowance				
3% interest	$30,000	$588,013		
7.25% interest	$30,000	$363,110		
Deferred Annuity: First benefit is deferred until age 60				
3% interest				
Ages 55-64	$0	$588,013	683,174	
Ages 65-84	$39,233			
7.25% interest				
Ages 55-64	$0	$363,110	$522,878	
Ages 65-84	$45,884			
Deferred Annuity: First benefit is deferred until age 65				
3% interest				
Ages 55-64	$0	$588,013		$793,735
Ages 65-84	$53,351			
7.25% interest				
Ages 55-64	$0	$363,110		$749,724
Ages 65-84	$72,150			

Values in table assume that the individual retires at age 55 and dies at age 85. Selecting the maximum benefit allowance, the annual pension benefit is $30,000 if the retiree begins receiving payments at age 55. The present value of $30,000 per year for 30 years at 3% discount rate is $588,013 and $363,110 using a discount rate of 7.25%. Next, we assume that if benefits are deferred, the retirement system pays an implicit annual return on the present value equal to the assumed interest rate. The annual payouts at age 60 and 65 are derived by using the annuity formula and the implied present value of the account balance at these ages. Calculations are based on annual pension benefit paid at the end of each year. Values are derived using a real interest rate of 3% per year and an interest rate in the range of that assumed by many state retirement plans of 7.25% per year.

Appendix

Appendix Table 1. Percent of Retirees Selecting Annuity Options

State	Plan	Maximum Allowance	Joint & Survivor	Social Security Leveling	Guaranteed Payment	Partial Lump Sum
Mississippi	MHSPRS	26.81	70.28		2.08	22.92
Mississippi	SLRP	42.78	36.36		14.44	16.04
South Carolina	GARS	36.74	63.26			
South Carolina	JSRS	90.34	9.66			
South Carolina	PORS	59.65	34.66	5.69		
South Carolina	SCNG	100				
Washington	LEOFF	12.80	87.20			
Washington	PSERS	71	29			
Washington	SERS	72.70	27.30			
Washington	WSPRS		100			
Wyoming	Air Guards	20	80			
Wyoming	Law	25.03	72.16		2.81	
Wyoming	Firefighters	30.38	60.75		8.86	
Wyoming	Warden	44.9	51.43		3.67	

Data provided by state plans in response to Cowell's e-mail sent to State Treasurers.

Appendix Table 2. Options by plans

State	Plan	Maximum Allowance	Joint & Survivor	Social Security Leveling	Guaranteed payment period	Lump sum +Benefit
Alabama	ERS	2 options	100%-50%	No	No	No
Alabama	TRS	2 options	100%-50%	No	No	No
Alaska	**PERS**	Yes	75%-50%	Yes	No	No
Alaska	**TRS**	Yes	75%-50%	No	No	No
Arizona	SRS	Remaining balance paid to beneficiary	100%-66%-50%	No	5Y-10Y-15Y	No
Arkansas	PERS	Remaining balance paid to beneficiary	75%-50%	No	60P-120P	No
Arkansas	TRS	Remaining balance paid to beneficiary	75%-50%	No	60P-120P	No
California	PERS	2 options*	100%-50%	No	No	No
California	**TRS**	Yes	100%-75%-50%	No	No	No
Colorado	PERA	Remaining balance paid to beneficiary	100%-50%	No	Yes+	No
Connecticut	SERS	Yes	100%-75%-50%	No	10Y-20Y	No
Connecticut	**TRS**	Remaining balance paid to beneficiary	100%-66%-50%-33%	No	5Y-10Y-15Y-20Y-25Y	No
Delaware	SEPP	Remaining balance paid to beneficiary	100%-75%-66%-50%	No	No	No
Florida	FRS	Remaining balance paid to beneficiary	100%-75%	No	10Y	No
Georgia	ERS	Remaining balance paid to beneficiary	100%-50%	No	Yes	Yes
Georgia	TRS	Remaining balance paid to beneficiary	100%-50%	No	No	No
Hawaii	ERS	Remaining balance paid to beneficiary	100%-50%	No	No	No
Idaho	PERS	Yes	100%-50%	Yes	No	No
Illinois	SRS	Remaining balance paid to beneficiary	100%-50%	Yes	No	No
Illinois	**TRS**	Remaining balance paid to beneficiary	100%-75%	No	10Y-15Y-20Y	No
Illinois	MRF	Remaining balance paid to beneficiary	100%-75%-50%	Yes	No	Yes
Indiana	PERF	Remaining balance paid to beneficiary	100%-66%-50%	Yes	5Y	No
Indiana	TRF	Remaining balance paid to beneficiary	100%-66%-50%	Yes	Yes	No
Iowa	PERS	2 options*	100%-75%-50%-25%	No	120P	No
Kansas	PERS	Yes	100%-75%-50%	No	5Y-10Y-15Y	Yes
Kentucky	KERS	Remaining balance paid to beneficiary	100%-66%-50%	Yes	5Y-10Y-15Y	Yes

Notes: Alaska also offers a 66% last survivor plan. The last survivor (retiree or beneficiary) gets 66% of the benefit. Employees in state plans in bold are not covered by social security.

State	Plan	Maximum Allowance	Joint & Survivor	Social Security Leveling	Guaranteed payment period	Lump sum +Benefit
Kentucky	CERS	Yes	100%-66%-50%	Yes	5Y-10Y-15Y	Yes
Kentucky	**TRS**	Remaining balance paid to beneficiary	100%-50%	No	10Y	No
Louisiana	**SERS**	Remaining balance paid to beneficiary	100%-50%	No	No	No
Louisiana	**TRSL**	2 options*	100%-66%-50%	No	No	No
Maine	**PERS**	2 options*	100%-50%	No	No	No
Maryland	SRPS	Remaining balance paid to beneficiary	100%-50%	No	No	No
Massachusetts	**SERS**	2 options*	66%	No	No	No
Massachusetts	**TRS**	2 options*	66%	No	No	No
Michigan	SERS	Remaining balance paid to beneficiary	100%-75%	Yes	No	No
Michigan	MERS	Remaining balance paid to beneficiary	100%-75%-50%	No	5Y-10Y-15Y-20Y	No
Michigan	PSERS	Remaining balance paid to beneficiary	100%-75%-50%	Yes	No	No
Minnesota	MSRS	Remaining balance paid to beneficiary	100%-75%-50%	No	15Y	No
Minnesota	PERA	Remaining balance paid to beneficiary	100%-75%-50%-25%	No	No	No
Minnesota	TRA	2 options*	100%-75%-50%	No	15Y	No
Mississippi	PERS	Remaining balance paid to beneficiary	100%-75%-50%	No	10Y-15Y-20Y	No
Missouri	SERS	Remaining balance paid to beneficiary	100%-50%	No	60P-120P	No
Missouri	LAGERS	Yes	100%-75%-50%	No	No	No
Missouri	**PSRS**	Remaining balance paid to beneficiary	100%-75%-50%	No	60P-120P	No
Montana	PERS	Remaining balance paid to beneficiary	100%-50%	No	10Y-20Y	No
Montana	TRS	Remaining balance paid to beneficiary	100%-66%-50%	No	10Y-20Y	No
Nebraska	SEPP	2 options*	100%-75%-50%	No	5Y-10Y-15Y	No
Nebraska	CEPP	2 options*	100%-75%-50%	No	5Y-10Y-15Y	No
Nebraska	SPP	2 options*	100%-75%-50%	No	5Y-10Y-15Y	No
Nevada	**PERS**	Yes	100%-50%	No	No	No
New Hampshire	NHRS	Remaining balance paid to beneficiary	100%-50%	No	No	No

Employees in state plans in bold are not covered by social security.

State	Plan	Maximum Allowance	Joint & Survivor	Social Security Leveling	Guaranteed payment period	Lump sum +Benefit
New Jersey	PERS	2 options*	100%-75%-50%-25%	No	No	No
New Jersey	TPAF	2 options*	100%-75%-50%-25%	No	No	No
New Mexico	PERA	Remaining balance paid to beneficiary	100%-50%	No	No	No
New Mexico	ERA	Remaining balance paid to beneficiary	100%-50%	No	No	No
New York	ERS	Yes	100%-75%-50%-25%	No	5Y-10Y	No
New York	TRS	2 options*	50%	No	5Y-10Y	No
North Carolina	TSERS	Yes	100%-50%	Yes	No	No
North Carolina	LGERS	Yes	100%-50%	Yes	No	No
North Dakota	PERS	Remaining balance paid to beneficiary	100%-50%	No	10Y-20Y	Yes
North Dakota	TRF	Remaining balance paid to beneficiary	100%-50%	Yes	10Y-20Y	Yes
Ohio	**PERS**	Remaining balance paid to beneficiary	100%-75%-66%-50%-25%	No	No	Yes
Ohio	**STRS**	Remaining balance paid to beneficiary	100%-50%	No	Yes+	Yes
Oklahoma	PERS	Yes	100%-50%	No	10Y	No
Oklahoma	TRS	Remaining balance paid to beneficiary	100%-50%	No	120P	Yes
Oregon	PERS	2 options*	100%-50%	No	15Y	Yes
Pennsylvania	SERS	Remaining balance paid to beneficiary	100%-50%	No	No	No
Pennsylvania	PSERS	Remaining balance paid to beneficiary	100%-50%	No	No	Yes
Rhode Island	ERS	Yes	100%-50%	Yes	No	No
South Carolina	SCRS	Remaining balance paid to beneficiary	100%-50%	No	No	No
South Dakota	SRS	Remaining balance paid to beneficiary	66%	Yes	No	No
Tennessee	CRS	Remaining balance paid to beneficiary	100%-50%	Yes	No	No
Texas	ERS	Remaining balance paid to beneficiary	100%-75%-50%	No	60P-120P	Yes
Texas	**TRS**	Remaining balance paid to beneficiary	100%-75%-50%	No	No	No
Texas	MRS	Remaining balance paid to beneficiary	100%-75%-50%	No	60P-120P	No
Utah	SRS	2 options*	100%-50%	No	No	No
Vermont	SRS	2 options*	100%-50%	Yes	No	No

Employees in state plans in bold are not covered by social security.

State	Plan	Maximum Allowance	Joint & Survivor	Social Security Leveling	Guaranteed payment period	Lump sum +Benefit
Vermont	TRS	2 options*	100%-50%	Yes	No	No
Virginia	SRS	Remaining balance paid to beneficiary	100%-75%-66%-50%-25%	Yes	No	Yes
Washington	PERS	Remaining balance paid to beneficiary	100%-66%-50%	No	No	No
Washington	TRS	2 options*	100%-66%-50%	No	No	No
West Virginia	PERS	Yes	100%-50%	No	No	No
West Virginia	TRS	Yes	100%-50%	No	120P	No
Wisconsin	WRS	Yes	100%-75%	Yes	60P-180P	No
Wyoming	WRS	2 options*	100%-50%	No	10Y-20Y	No

Employees covered by plans shown in bold are not included in the Social Security system.

Appendix B. e-mail from Janet Cowell sent to 50 State Treasurers: November 2015

Dear Colleagues,

Retirement security is a top priority for Treasurers across the country, and it is in that spirit that I am writing to you today. You are invited to participate in a study of retirement payment options that will provide important insights for all of our states as we help constituents increase their retirement security.

Many factors contribute to retirement security for the beneficiaries of our states' pension plans, and choosing a payment option is one of them. Together with Dr. Robert Clark of North Carolina State University, I am undertaking a study of payment options to evaluate the specific impact of this choice on retirement security. Dr. Clark and I will present our findings at the Pension Research Council's Symposium at the Wharton School of the University of Pennsylvania May 5-6, 2016.

Understanding the payment options that pension plans offer and the rates at which retirees choose these options is an important part of our research. Dr. Clark and I ask for your help gathering this information for the pension plans in your state.

Dr. Clark's team at North Carolina State University has built a web questionnaire where you may submit this information quickly and easily. It is online athttp://ncsu.qualtrics.com/jfe/form/SV_4NnF5iDdR86XVlz. If your state manages multiple retirement plans, we ask that you complete this questionnaire once for each plan.

This questionnaire will generally take less than fifteen minutes for your State Retirement Director or other appropriate official to complete. It includes a checklist of payment options in which you may indicate the options available in your retirement plan and the overall selection rates for each option. I have included an example response below for North Carolina's Teachers' and State Employees' Retirement System (TSERS) and Local Governmental Employees' Retirement System (LGERS). Unless you request otherwise, we expect to identify your plans' payment options and selection rates in a published report.

Would you please forward this request to your state's Retirement Director or to another appropriate member of your team? Our goal is to receive input by Friday, December 4th, 2015.

Dr. Clark and I are very grateful for your help in this research. We believe that a deeper understanding of payment option choices can add to beneficiaries' retirement security. In addition to presenting the results of our research at the Pension Research Council Symposium, we will send you a copy of the final report upon completion.

Matthew Leatherman of the North Carolina Department of State Treasurer is managing this project. I encourage you to contact him if you have any questions (matthew.leatherman@nctreasurer.com; 919-500-6353). Thank you in advance for your assistance.

Sincerely,

Janet

Example Questionnaire Response for North Carolina's TSERS and LGERS

	TSERS	LGERS
Maximum Allowance	56.2%	55.7%
100% Joint and Survivor	7.9%	11.8%
50% Joint and Survivor	3.6%	5.1%
Social Security Leveling	17.9%	9.7%
Modified 100% Joint and Survivor	8.2%	10.9%
Modified 50% Joint and Survivor	6.2%	6.8%