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## Defined benefit pension plan distribution decisions by public sector employees<sup>☆</sup>

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### ABSTRACT

Studies examining pension distribution choices have found that the tendency of private-sector workers is to select lump sum distributions instead of life annuities resulting in leakage of retirement savings. In the public sector, defined benefit pensions usually offer lump sum distributions equal to employee contributions, not the present value of the annuity. Thus, for terminating employees that are younger or have shorter tenures, the lump sum distribution amount may exceed the present value of the annuity. We discuss the factors that may influence the choice to withdraw funds or not in this environment. Using administrative data from the North Carolina state and local government retirement systems, we find that over two-thirds of public sector workers under age 50 separating prior to retirement from public plans in North Carolina left their accounts open and did not request a cash distribution from the pension system within one year of separation. Furthermore, the evidence suggests many separating workers, particularly those with short tenure, may be forgoing substantial monetary benefits due to lack of knowledge, understanding, or accessibility of benefits. We find no evidence of a bias toward cash distributions for public employees in North Carolina.

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### 1. Introduction

Each year, millions of American workers leave their jobs prior to retirement either by choice or due to termination by their employers. Many of these job changers participate in defined benefit pension plans. On leaving their employers, these workers are often given a choice of keeping their retirement accounts open, thus maintaining a claim on a future life annuity, or accepting an immediate lump sum distribution (LS) of their pension assets. This decision is distinct from that faced upon retirement, since workers maintaining their account will not receive any cash benefits until reaching retirement age.

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Workers who accept the LS are then given a choice of whether they want to roll the funds over into an IRA or to accept the cash as taxable income and also pay a tax penalty for early withdrawal if under age 59.5. These choices can have significant long run implications for future retirement income and shed light on the magnitude of leakages from retirement saving. In a report describing sources of leakage of workers' retirement savings from 401(k) plans, the [Government Accountability Office \(2009\)](#) concluded that cashing out benefits at job separation represents the principle form of leakage of retirement savings and has the largest impact on retirement wealth accumulation. The problem of leakages is greater among younger workers and males, who have been found to cash out benefits at higher rates ([AonHewitt, 2011](#)).

Economic theory argues that to maximize lifetime utility one should consume such that utility levels are smooth over time. One method of achieving utility smoothing is through the purchase of annuities ([Yaari, 1965](#)). However, a series of national surveys and economic studies found that individuals rarely purchase annuities in the open market (see, e.g., [Mitchell et al., 1999](#)). Further, when given the choice in their pension plans of a life annuity or a LS, workers often chose the LS (see, e.g., [Brown, 2001](#); [Engelhardt, 2002](#); [Hurd and Panis, 2006](#)). Thus, many workers tend to reject the opportunity to receive a certain flow of income throughout retirement in favor of receiving cash now, which therefore results in individuals assuming the task of managing funds on their own during their retirement years. This conflict between theory and individual

choices has been called the “Annuity Puzzle.”<sup>1</sup> If cashed out benefits are spent on immediate consumption rather than saved for retirement, this leakage will result in lower income and income security in retirement.

Under federal pension regulations, defined benefit plans in the private sector must offer an annuity and provide participants with information on their future annuities. The LS’s for these plans are required to be calculated as at least equal to the present value of the retirement annuity using approved interest and mortality tables.<sup>2</sup> Things are very different in the public sector. Public sector defined benefits plans usually require explicit employee contributions each pay period, and LS’s are based on the employee contributions and not the present value of the annuity. Thus, a public sector worker’s choice of whether to take a LS reflects both his/her individual preference for annuitization and potential differences in the net value of the LS and annuity options. Defined benefit plans continue to cover most state and local employees and virtually all of the plans offer workers the option of a LS at job separation or retirement (Clark et al., 2011).

We examine the choices terminated workers younger than age 50 make using data from the North Carolina Teachers’ and State Employees’ Retirement System (TSERS) and the North Carolina Local Governmental Employees’ Retirement System (LGERS) by examining information contained in the administrative records of the two retirement plans.<sup>3</sup> We restrict our attention to individuals under age 50 as they are not yet eligible to retire and receive immediate annuity benefits. As of the end of 2010, these two public pension plans covered 803,636 employees and retired workers. Our unique dataset contains all terminations from state and local government employment in North Carolina between 2007 and 2008 and tracks behavior through the end of 2009, allowing us to observe choices made within one year of separation for all terminated workers. The dataset includes relevant economic and demographic information on all individuals who left state or local employment during this time period.

Public sector defined benefit plan participants face a series of choices concerning their pension accounts when terminating employment prior to retirement, as illustrated in Fig. 1. The first decision a worker must make is whether to maintain his/her pension account or accept an immediate LS.<sup>4</sup> From an economic perspective, a worker should compare the value of the LS to the present discounted value of the life annuity (PDVA) which is set to begin at some point in the future. However, as we will see later, there are a number of factors that make this decision more complicated than a simple wealth comparison.

The default option is for the worker to maintain the pension account; a departing worker must file a request with the retirement system in order to receive a LS. Depending on the rules of the pension plan, a worker might also have the opportunity to return to work with the same employer and have prior service credits count toward a future retirement benefit.<sup>5</sup> Fig. 1 also shows that workers who request a LS must specify whether they want to receive cash or have

the funds rolled over into another approved tax qualified retirement plan such as an IRA. If the worker is sent a check, she could subsequently deposit the funds into an IRA and avoid current taxes and penalties if she follows the IRS guidelines. It is important to remember that individuals preferring to insure against longevity risk by annuitizing have the option to withdraw funds, roll them over into an IRA, and ultimately purchase an annuity. Thus, an informed worker should decide whether to withdraw funds based on the highest present value of the distribution options, appropriately measured, taking into account predicted inflation, interest rates, and various types of risk.

We calculate how the decisions made by separating workers are affected by the value of the distributional options available to them. The relative generosity of the two options is estimated using details of the plan characteristics and information provided by the retirement system. We find that fewer than one-third of all terminating public employees requested a LS within one year of separation, despite the finding that for over 70% of terminations, the LS was larger than the estimated PDVA. These results indicate a low probability of leakage from retirement funds, although many workers are seemingly forgoing the possibility of higher retirement income possible from rolling over funds to an IRA.

We offer several potential explanations for why the distributional choice from a public pension plan is more complex than a simple wealth comparison at a point in time. First, separating participants in TSERS qualify for retiree health insurance from the State Health Plan with no premium as long as they are receiving a monthly annuity from TSERS. This option is available for virtually all vested state employees (participants in TSERS), but local employees (participants in LGERS) are not covered by the State Health Plan.<sup>6</sup> Comparing distributional decisions by state employees in TSERS to those of local employees in LGERS provides some indication of the effect of retiree health insurance on the choice to ultimately receive a retirement annuity. Despite the difference in coverage of retiree health insurance in the two systems, we do not see a large difference in the distributional choices between separating workers that will qualify for retiree health insurance and those that will not.

Second, we consider the likelihood that terminated participants may plan to return to public employment. The expectation of returning to public employment might make maintaining the account the optimal choice for these individuals. However, we document that workers who ultimately returned to work by December 2010 were actually more likely to withdraw funds within one year of separation. Third, we discuss the influence of alternative investment options, macroeconomic conditions, and confidence in the retirement system. Maintaining the account still allows for the option of requesting a LS at some future date. Because the account balance accrues interest at a guaranteed rate of 4%, financially savvy individuals may choose to maintain their account balances and accept larger LS’s at a future date as part of an investment portfolio. However, we do not find that the 12-month return on the S&P 500 is related to the probability of withdrawing funds, once local macroeconomic conditions are added to the model. There are mixed results when considering the 1-year Treasury bond rate, but, if anything, higher bond rates are associated with a reduced probability of withdrawing funds. Moreover, we do not see a large difference between the disposition choice of non-vested workers (who do not earn interest) and vested workers. This indicates that workers are not responding to incentives of outside investment options. We do find that when the state unemployment rate rises, individuals are significantly less likely to withdraw

<sup>1</sup> See Benartzi et al. (2011) for an excellent overview of the annuity puzzle literature.

<sup>2</sup> The Pension Protection Act requires that beginning in 2008 the LS be calculated using a three-segment interest rate yield curve based on the rates of return on investment grade corporate bonds of varying maturities. Purcell (2007) provides additional information on this process and how it affects workers at various ages at termination.

<sup>3</sup> While these plans have separate governing boards, they are administered by the same staff and have similar, but not identical, benefits and contributions requirements. Further details of TSERS and LGERS can be found by visiting the retirement systems’ home page at: <http://www.nctreasurer.com/dsthome/RetirementSystems>.

<sup>4</sup> The term “maintain” is used because workers may have the opportunity to request a LS at any time after separating from public employment and prior to starting a retirement benefit; thus not accepting the immediate LS leaves open the option of requesting such a distribution at some time in the future instead of waiting until one is eligible to start a retirement annuity from the plan. In our analysis, “immediate” means that the terminated worker requested a LS within one year of termination.

<sup>5</sup> Returning to work and being covered by the same retirement plan is probably much more likely in the public sector where a single plan typically covers all state employees and teachers in the state. This allows workers to change jobs and government agencies and to move within the state while remaining in the same retirement system.

<sup>6</sup> With a few minor exceptions, workers and retirees covered by LGERS are not covered by the State Health Plan; however, they may be covered by locally-managed health plans that extend coverage to retirees. We cannot match the local health plans to the LGERS retirement data.

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