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THE TRADEOFF BETWEEN HEALTH AND WEALTH IN RETIREMENT DECISIONS

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Public programs that provide income and health insurance to retirees, including Social Security and Medicare, are experiencing projected shortfalls, while many public employee retirement programs are severely underfunded. In response, reforms of these programs that aim to reduce taxpayer liabilities by reducing benefits have been proposed. Yet it is not clear how alternative options for reform will affect recipient well-being. In the U.S., retirement, and early retirement in particular, exposes individuals to both a reduction of income and the loss of health insurance coverage. In this context, retirement income benefits and the availability of post-retirement health insurance will jointly shape retirement decisions. However, the relative valuation of pension and retiree health benefits is not well-understood. Knowledge about individuals' willingness to trade off retirement income and health insurance is essential to creating efficient policy and to predicting how changes in social insurance programs and employer-sponsored retirement benefits will affect elderly labor supply and well-being.

In this paper, I estimate the direct effect of retiree health insurance benefit accrual on the retirement timing of California public school teachers and calculate the implied substitution rate between a dollar of pension benefits and a dollar of retiree health benefits. There is a large literature that finds individuals are more likely to retire early if they have access to retiree or public health insurance. (Monk and Munnell (2009) and Gruber and Madrian (2004) provide a review of the literature). However, in many instances it is assumed that retirees with diverse health insurance and pension benefits are otherwise identical after controlling for observable characteristics, making it difficult to separate the direct causal effect of health benefits on retirement from endogenous sorting and from the effect of unobservable factors that are potentially correlated with health benefits. This paper expands the relatively small literature that uses plausibly exogenous variation in health insurance coverage to examine the effect of access to post-retirement health insurance on the decision of when to retire (e.g. Gruber and Madrian (1995) and Boyle and Lahey (2010)). This paper complements the current work by estimating the effect of the accrual of retiree health insurance benefits on retirement timing and the implied rate at which individuals will trade post-retirement health benefits for post-retirement income.

The California public school system, which like many others is struggling to cover retiree pension and health benefits, is an advantageous setting in which to examine the tradeoff of health benefits with leisure and with pension benefits. First, it offers a large and relatively homogeneous population of workers with the same occupation that face rigid district-level wage and benefit schedules. Relative to large survey

data sets, this leaves less room for unobserved individual differences in taste to be driving variation in observed retirement incentives. Second, the retirement pension is regulated at the state level, while health benefits are negotiated at the district level, decoupling the incentives of the two programs. Finally, retiree health insurance eligibility is typically determined by a strict service requirement. This feature introduces a sharp, plausibly exogenous distortion to the return to work, which varies across school districts and can be exploited in the empirical strategy.

The analysis in this paper uses two administrative data sets collected by the California Department of Education in combination with school-district specific information on retiree health benefit eligibility. Annual censuses of teacher staffing for each school district are extracted from the *California Basic Education Data System* and information on the retiree health benefits for each school district are obtained from the annual *Salary and Benefits Schedule for the Certificated Bargaining Unit*. The retiree health benefit data has been supplemented with information from school districts' human resources departments and collective bargaining agreements.

Two empirical strategies are used to estimate the response of retirement timing to retiree health insurance accrual. Both strategies exploit the plausibly exogenous variation in eligibility for retiree health benefits that is created by program nonlinearities within and across school districts and produce similar results. Overall, I find that the accrual of retiree health insurance benefits does affect retirement timing, providing evidence that individuals value this benefit. However, the effect is small relative to the effect of pension accrual on retirement, implying that teachers value an additional dollar of retirement income more highly than an additional dollar spent on retiree health insurance.

The first estimation strategy directly examines the distribution of retirements around the service thresholds at which teachers becomes eligible for district-subsidized retiree health benefits in the five largest school districts. At the eligibility threshold, a teacher gains the present value of the stream of future retiree health benefits. This sharp increase in benefits creates a large incentive to delay retirement for those that are just under the eligibility threshold. As evidence of a response to this incentive, the data show a clear dip in the number of retirements that occur just prior to eligibility and a spike in the number of retirements that occur just after eligibility. Estimates of the magnitude of this dip, which is proportional to the teachers' willingness to trade health benefits for a longer retirement, and of the dollar value of attaining retiree health insurance eligibility imply that the elasticity of retirement with respect to the accrual of health benefits is modest and substantially smaller than similar estimates of the elasticity with respect to pension wealth accrual reported in the literature (Brown, 2013).

The second empirical strategy uses a regression framework to simultaneously estimate the effect of retiree health insurance benefit accrual and pension wealth accrual on the probability of retirement. Controls for age, years of service, and compensation while employed are used to narrow the identifying variation to that created by the sharp program rules. The source of identification in this strategy is less salient than in the discontinuity estimation, but this strategy has the advantage of providing estimates of the effect retiree health benefits and pension benefits on retirement within the same framework. The results corroborate the discontinuity estimates - the probability of retirement is decreasing in the accrual of retiree health insurance benefits, but the estimated coefficient is substantially smaller than that on pension wealth accrual.

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