TIAA-CREF institute

TRENDS AND ISSUES

JANUARY 2014

IMPACT OF RETIREE HEALTH INSURANCE IN THE PUBLIC SECTOR

Robert L. Clark
Zelnak Professor, Poole College of Management
North Carolina State University
TIAA-CREF Institute Fellow

EXECUTIVE SUMMARY

Most state and local government employees are covered by health plans that extend coverage to retired employees. Relatively few studies have examined how public employees respond to these incentives. To examine how retiree health plans influence worker decisions and government budgets, the National Bureau of Economic Research (NBER) convened a conference in August 2013 and commissioned papers by nationally prominent researchers to examine how these plans affect workers and government employers. This report summarizes the findings of the research presented at the conference. Each of the papers provides insights into important effects of retiree health plans in the public sector and how these plans affect work and retirement, choice of retirement plans, and retirement saving. Together, these papers clearly show that the promise of health insurance in retirement induces workers to retire earlier and save less. In addition, changes in plan design influence the choice of health plans of retirees. Thus, when managers are deciding to modify or eliminate retiree health plans in an effort to reduce labor costs, they should consider how employees might alter their behavior in responses to such changes and how employee actions might affect total labor cost. The research also indicates that retiree health plans are a valuable benefit and the elimination of these plans would make public sector jobs less desirable.

The papers discussed in this report were presented at *NBER Conference on State and Local Health Plans for Active and Retired Public Employees* held August 15-17, 2013 in Moran, WY. The conference was organized by Robert Clark and Joseph Newhouse. A conference agenda and links to papers can be found at: http://conference.nber.org/confer/2013/SLHP13/program.html

INTRODUCTION

Most state and local government employees are covered by both pension and health plans that extend coverage to retired employees.[1] The generosity of these plans help governments attract and retain quality workers. These plans also have significant incentives for individuals to retire from public service at relatively young ages. As a result of these benefits, public employees have lower quit rates than comparable workers in the private sector and typically retire at younger ages, often in their 50s.[2] Thus, retirement benefits are an important component of total compensation for public employees and help government employers achieve their strategic human resource objectives. In addition, these plans may also affect individual's tendency to save additional funds for retirement.

Retirement benefits have many interesting and important characteristics. In general, they are the promise of future income and health coverage in exchange for work already completed. Individuals must consider whether these promises will be honored or whether their employers might change the rules in the future so that actual benefits in retirement will be less valuable than those promised. In the private sector, the Employee Retirement Income Security Act (ERISA) provides certain safe guards for retirement plans, but ERISA does not apply to public plans. Recent events highlighting the large unfunded liabilities and rising annual expenditures associated with public sector retirement plans have resulted in considerable changes in pension and retiree health plans. The bankruptcies of Detroit and other cities further exacerbate the concern over the cost of these plans and how they affect state and local government budgets.[3] Despite certain legal protections for retirement benefits, public employees may now be more concerned over whether retirement promises will be kept.

The importance of understanding the role of these plans is evident when one considers that state and local governments employ almost 18 million workers or 13.2 percent of the national, nonfarm work force. Almost half of state and local employees (8.9 million) are in the education sector of the economy. Benefit costs for state and local employees represent 35.5 percent of total compensation in the sector which exceeds that in the private sector.[4] The significant underfunding of retiree health and pension plans is not included in this measure of the cost of employee benefits for public employees.

While most of the attention in the popular press and by analysts has focused on the financial problems of public sector pension plans,[5] the underfunding and rapidly rising cost of retiree health plans are becoming a more visible cause for concern. To examine how retiree health plans influence worker decisions and government budgets, the National Bureau of Economic Research (NBER) convened a conference in August 2013 and commissioned papers by nationally prominent researchers to examine how these plans affect workers and government employers. This report summarizes the findings of the research presented at the conference. Each of the papers provides insights into important effects of this retirement benefit including the incidence of retiree health plans in the public sector and how these plans affect work and retirement, choice of retirement plans, and retirement saving.

The research presented at the conference focused of five important issues associated with retiree health plans. First, who pays for the health insurance of public sector retirees? This issue was addressed in papers by Jeffery Clemens (University of California at San Diego) and David Cutler (Harvard University) and Paige Qin and Michael Chernew

1 The BLS (2013) reported that 83 percent of state employees and 66 percent of local employees had access to retiree health insurance plans and 92 percent of state and 89 percent of local government workers had access to a retirement plan. The incidence of retirement and health plans is also very high at institutions of higher education whether they are public or private. http://www.bls.gov/opub/perspectives/program_perspectives_vol3_issue1.pdf

2 Munnell, et al (2007) illustrate differences in job tenure between the public and private sectors and attribute this relationship to the greater incidence of defined benefit plans. http://crr.bc.edu/wp-content/uploads/2007/12/slp_2.pdf

3 For example, see a series of articles posted on the Detroit News website concerning the bankruptcy application of Detroit and the role of employee benefits (http://www.detroitnews.com/article/99999999/METRO01/130718001&template=theme&theme=DETROIT-BANKRUPTCY); also other articles concerning similar situations in Stockton, CA (http://www.reuters.com/article/2013/04/02/us-stockton-bankruptcy-idUSBRE9300GP20130402 and http://www.npr.org/2012/03/11/148384030/an-example-to-avoid-city-of-stockton-on-the-brink) and San Jose (http://www.nytimes.com/2013/09/24/us/struggling-san-jose-tests-a-way-to-cut-benefits.html?hp).

4 See, http://www.bls.gov/web/empsit/ceseeb1b.htm and http://www.bls.gov/news.release/ecec.t04.htm

5 NBER conferences in 2010 and 2012 organized by Robert Clark, Jeffrey Brown and Joshua Rauh examined various aspects of public sector pension plans. See http://conference.nber.org/confer/2012/SLP/summary.html and http://conference.nber.org/confer/2010/SLPf10/summary.html.These papers were also published in *Journal of Pension Economics and Finance*, April 2011.

(Harvard University). Second, does retiree health insurance coverage induce public sector workers to retire at earlier ages? Papers by John Shoven (Stanford University) and Sita Slavov (American Enterprise Institute) and Maria Fitzpatrick (Cornell University) estimate how retiree health insurance alters planned retirement ages. Third, does the promise of subsidized health insurance in retirement reduce individual saving and wealth accumulation? Robert Clark (North Carolina State University) and Olivia Mitchell (University of Pennsylvania) show how employees covered by these plans respond by reducing their own saving outside of employer retirement plans. Fourth, can employers influence the choice of health plans by retirees? Clark, Melinda Morrill (North Carolina State University) and David Vanderweide (North Carolina General Assembly) demonstrate how retirees in North Carolina shifted health plans when the state health plan introduced wellness requirements and premiums. Fifth, what is the impact of retiree health insurance plans on the budgets of state and local governments? Papers presented by Robert Novy-Marx (University of Rochester) and Joshua Rauh (Stanford University) and Byron Lutz and Louise Sheiner (both of the Federal Reserve Board) examine how retiree health plans are funded and their long range impact on state budgets.

WHO PAYS FOR RETIREE HEALTH INSURANCE?

Economic theory predicts that employers determine the value of hiring workers. Based on this assessment, the employer decides on the total compensation they are willing to pay. If workers prefer to receive some of their compensation in the form of benefits like pension and health plans, then employers would reduce their cash compensation to reflect the cost of the insurance. Often in the case of retirement benefits, economies of scale, risk-pooling and various tax policies result in employers being able to offer non-pecuniary benefits at a cost that is less than an individual could purchase in the private market. The theory of compensating wage differentials implies that workers pay for health insurance and other retirement benefits by accepting lower annual earnings. Using data from school districts across the country, Clemens and Cutler estimate the extent to which public employees' wages are lower due to their coverage by retiree health plans.

Clemens and Cutler examine state plans and how they differ. They begin by noting state and local governments spent only $70 billion on health insurance in 2001 (in 2012 dollars) but by 2010, these expenditures had risen to $117 billion which represented an increase in constant dollars of $130 per capita. They review state health plans and find that public employers tend to offer a wider variety of health plans from which employees can choose compared to large private sector employers. They find that the average state offered six health insurance plans to its employees in 2012, while three quarters of firms with 5,000 or more employees offered workers only one or two health plans. They also report that there is considerable variation across the states in the type of health plans offered, the percent of the total premium paid by the state, and the rate of increase in premiums over time. While noting these differences, they find that on average employees paid 24 percent of the premium for a family plan.

A key observation is that insurance premiums for state employees have grown less rapidly than those for comparable employees in the private sector. Interestingly, federal stimulus money per capita received by the states reduced employee contributions required for their health plans. They consider heterogeneity by public sector unionization rates and find that states with higher rates of unionization actually have had larger increases in employee contributions. Part of this finding is explained by the fact that unionized plans at the beginning of their sample period tended to have lower employee premiums compared to nonunion plans.

To examine the trade-off between health insurance cost and wages between 1998 and 2007, Clemens and Cutler developed a data file of school district finances based on data from the National Center for Education Statistics. In an analysis of insurance premiums and wages for educational employees, they find only a small fraction of increases in benefit costs are offset through reductions in wages, about 15 percent. Interestingly, they find that instead of shifting the higher cost of health plans to employees, school districts have been able to shift the cost to other government units. This finding has implications for considering the total compensation of teachers in different areas of the country.

Paige Qin and Michael Chernew (Harvard University) also estimated whether employers shifted health insurance costs to workers in the form of lower wages. In contrast to Clemens and Cutler, they conclude that there is considerable cost

shifting from public employers to public employees when the cost of health insurance is rising. Qin and Chernew find that "more fully funded state retiree health insurance systems lead to lower wages of current state employees." Alternatively, this suggests that when the plans are substantially underfunded, workers systematically discount the value of this benefit due to their concern that future benefits will not be paid.

HOW DOES COVERAGE BY RETIREE HEALTH INSURANCE AFFECT THE AGE OF RETIREMENT?

Workers who retire prior to age 65 must determine how they will provide for their health care. In the absence of employer-provided retiree health insurance, these individuals must consider whether to purchase health insurance on the open market which could cost $10,000 to $15,000 annually for a family policy. In contrast, those with employer-provided retiree health plans typically will pay much less for their health insurance, some even receiving coverage without any premium. The existence of subsidized health insurance provided by one's employer between the time of retirement from career jobs and reaching age 65, when individuals become eligible for Medicare, provides older workers with an additional economic incentive to retire. Shoven and Slavov and Fitzpatrick estimate how employer-provided retiree health plans alter the realized age of retirement.

Shoven and Slavov examine the retirement behavior of respondents in Health and Retirement Study. The analysis is limited to full-time employees with at least 5 years of service in order to focus on career employees who might be eligible for retiree health insurance. Their main finding is that retiree health coverage raises the probability of job exit for state and local employees by 9.3 percentage points (or about 69 percent) for workers at age 61 and by 13.0 percentage points at age 64. The retirement effects are larger in those states where the government employer pays some of the insurance premium. These results are similar to their earlier study of private sector workers (Nyce et al., 2013).

An interesting conjecture based on their research is that once the Affordable Care Act (ACA) is fully implemented, all individuals will be able to purchase group health insurance from the state-run exchanges. Many low income individuals will receive substantial subsidies to purchase the insurance through the exchanges. In a real sense, the ACA will provide an option similar to employer-provided retiree health insurance to those individuals whose employers did not offer this benefit. A question is whether employers (both public and private) will drop their retiree health plans and send their retirees to the exchanges in order to take advantage of the government subsidized premium. Shoven and Slavov speculate that this effect will likely reduce the age of retirement for workers who previously did not have retiree health plans.

Fitzpatrick examines the effect of the introduction of retiree health insurance for employees of public schools in Illinois in 1980. Using data from administrative records for the years 1970 to 1991, she estimates age specific retirement rates before and after the introduction of the retiree health insurance plan. Subsidized health insurance was made available to retirees receiving a pension from the Illinois Teacher Retirement System with at least 8 years of service. These pension recipients were eligible for retiree health insurance with 50 percent of the premium being paid by the state. After the retiree health plan was made available, early retirement rates increased significantly. Fitzpatrick concludes that "the retiree health insurance program served to move forward the timing of job separations for older workers." Many fewer employees waited until age 65 to retire and many more retired at the earliest age at which they gained eligibility for retiree health insurance.

Both of these papers support the conclusion that public employees covered by retiree health plans tend to retire earlier than similar public and private sector workers whose employers do not provide retiree health insurance. Shoven and Slavov find retirement spikes at ages 61 and 64 for all public employees covered by retiree health plans. Fitzpatrick estimates that the distribution of retirement ages among Illinois teachers was shifted to earlier retirement ages. Combining these results with other studies, it seems likely public sector retiree health plans are one of the factors leading to earlier retirement ages in the public sector. In the absence of changes to accessibility of health insurance in retirement due to the exchanges set up by the ACA, these findings suggest that if retiree health insurance plans were eliminated, many public sector workers would delay retirement.

DOES THE PROMISE OF HEALTH INSURANCE IN RETIREMENT AFFECT SAVING AND WEALTH ACCUMULATION?

In addition to altering retirement ages, the promise of subsidized health insurance in retirement might alter workers incentive to save. If one's former employer promises to pay for health insurance in retirement, individuals will need less cash income to support their desired lifestyle in retirement. Clark and Mitchell provide the first study of the effect of retiree health plans on personal saving. They place their analysis in the context of earlier research that estimated the impact of pensions, Social Security and Medicare on the saving behavior of workers. In general, these studies find that coverage by these retirement plans reduce saving, but not by a dollar for dollar amount. Theoretically, retiree health plans should have a similar impact.

To investigate the saving effect of retiree health insurance, Clark and Mitchell constructed a sample of individuals who were working in the year of observation from a restricted-access version of the Health and Retirement Study (HRS) that includes state identifiers. Respondents in the HRS were at least 50 years of age. In order to be included in the sample, individuals had to have had at least 5 years of service with their current employer. Clark and Mitchell were able to identify whether these individuals worked for state and local governments, the Federal government or private sector employers and whether the workers were covered by retiree health insurance on their current job. Their analysis focused on estimating whether coverage by retiree health plans reduced total wealth reported by respondents at the time of the survey.

Clark and Mitchell's statistical analysis indicated that Federal employees covered by retiree health plans saved approximately $100,000 less than comparable private sector workers who were not covered by employer-provided retiree health insurance, while state and local employees with retiree health coverage had accumulated about $72,000 less wealth compared to their private sector counter parts without retiree health coverage. Limiting the sample to married households, the analysis produced similar results – public employees whose employers promise them subsidized health insurance in retirement tend to save less and accumulate less wealth for retirement.

CAN EMPLOYERS INFLUENCE THE CHOICE OF HEALTH PLANS BY RETIREES?

Most states offer their employees and retirees the option of selecting from among alternative health plans, but little is known about how individuals select among plans and what the cost implications are of these choices for both the employees and the employers. Employers can influence the choice of health plans by restricting access to certain plans, providing incentives or penalties for certain behaviors or lifestyles, and by altering the relative costs of the plans.

Clark, Morrill and Vanderweide examined the choice of health plans by retirees in North Carolina over a five year period in which employer modifications to the plan resulted in a substantial shift in the proportion of retirees selecting between two Preferred Provider Organization (PPO) plans. They reviewed the choices over 2009 to 2012 between the Basic Plan with a 30 percent co-payment and the Standard Plan which required only a 20 percent co-payment. Non-Medicare eligible retirees were subjected to a change in the default plan and to enrollment in a Comprehensive Wellness Initiative (CWI) as a condition for participation in the Standard Plan, while Medicare-eligible retirees and their dependents were exempt from these plan changes. The plan changes induced a large shift (around 40 percent) among non-Medicare eligible employees to the Basic Plan. At the end of the study period, the CWI was repealed and a premium was added to the Standard Plan.

The authors demonstrate that although Basic Plan enrollment rose for both Medicare-eligible and non-Medicare eligible retirees, there was substantial shifting for the non-Medicare eligible retirees. At the beginning of the period, less than 2 percent of non-Medicare eligible retirees selected the Basic Plan. After the 2010 introduction of a smoking cessation requirement for participation in the Standard Plan (smokers were required to be in the Basic Plan), participation in the Basic Plan jumped to 30 percent of all non-Medicare eligible retirees. In 2011, the state added another requirement for participation in the Standard Plan that required retirees to meet certain weight requirements in addition to certifying that they were non-smokers. After the introduction of this second wellness initiative, participation in the Basic Plan rose to 40 percent of non-Medicare eligible retirees. Later in 2011, the state revoked both of the wellness requirements for

participation in the Standard Plan, but for the first time added a premium for the Standard Plan while participation in the Basic Plan did not require a premium. Participation in the Basic Plan remained about 40 percent of all non-Medicare eligible retirees. The State also changed the default plan to the Basic Plan as these policies were introduced so that some of the shift in plan enrollment may be due to inertia associated with a default.

Statistical analysis shows that the introduction of the two wellness initiatives resulted in a significant minority of retirees selecting the less generous health plan. These results indicate that the policy initiatives achieved their primary objective of moving less healthy, higher cost retirees into the less generous health plan, thus shifting costs from the state to those retirees. Changes in the wellness requirements and the subsequent addition of a premium for the Standard Plan produced considerable movement of retirees from one plan to another. However, the implications for both contemporaneous costs and future liabilities were relatively modest. Unfunded liabilities were mostly reduced by the introduction of the premium and by changes in the assumptions used to calculate the liabilities. Overall, the evidence indicates that retirees are sensitive to policy changes involving wellness requirements and premium amounts.

FUNDING OF RETIREE HEALTH PLANS: ANNUAL COSTS AND LONG TERM LIABILITIES

Public sector retiree health plans have become front page news primarily due to the large accrued liabilities associated with these plans and the almost total lack of prefunding. As a result, state and local governments are facing large and growing unfunded liabilities and escalating annual expenditures to pay these benefits that represent an increasing component of their annual budgets. Lutz and Sheiner provide the first assessment of the impact of retiree health obligations on the long term budgets of state and local governments, as well as an analysis of the importance of plan assumptions on the level of unfunded liabilities. They estimate the annual cash flows for state governments based on information from actuarial reports of state plans and augment these payments by approximations for those of the local governments in each state. They estimate that the total accrued liabilities for state and local government retiree health plans is $1.2 trillion. Considering all public plans, they find that assets in reserve funds for retiree health plans are only equal to about 3 percent of the liabilities. Thus, one should consider these plans as basically pay-as-you-go retirement plans. Similar to other studies, Lutz and Sheiner find substantial differences in unfunded liabilities relative to annual revenues across states from nearly zero percent in Idaho to 110 percent in Illinois.[6]

To determine the long run impact of retiree health plans on state budgets, Lutz and Sheiner develop a simulation model to project the future GDP of each state and tax revenues that will be generated based on these income forecasts. Their model indicates that using their baseline assumptions, a relatively modest increase in revenues of 0.6 percent points would be sufficient to finance retiree health expenditures in perpetuity.[7] However, states with the most generous plans would need revenue increases of between 1 and 2.5 percent of total revenues.

Novy-Marx and Rauh provide a different view of the liabilities associated with public sector retiree health plans. They refer to these liabilities as “soft liabilities” and consider them “junior” to pension promises and other state liabilities. It is important to note that these plans are largely unfunded and that the legal protections afforded to the promise of future health insurance coverage are much less than those given to pension plans in the public sector.

Their analysis links the degree of funding to the probability of default on the health promises and they consider the optimal funding strategy by governments for their retiree health plans, i.e. prefunding or pay-as-you-go. Their model indicates that if promised benefits were paid in full, current accounting undervalues the liabilities; however, if governments can renege on or reduce promised benefits, then the market value of the liabilities will be substantially lower. Of course, workers may recognize the potential for default and adjust their labor market behavior accordingly.

6 The main reason for these differences is variation in the generosity of health benefits provided across states. In some states, retirees are eligible to enroll in the state health plan without paying any premium, while in other states the retiree must pay 100% of the premium.

7 This result is driven by their projection that there will be no significant increase in the ratio of state and local retirees covered by the health insurance plans to state and local government workers. Thus, the increase in annual expenditures as a share of state GDP is due mostly from the excess cost growth in health care compared to the general increase in prices and revenues.

INTERPRETATION AND AVENUES FOR FUTURE RESEARCH

The 2013 NBER conference is the first national research conference to focus exclusively on retiree health plans in the public sector and how these plans affect worker behavior and government budgets. The research presented at the conference and accompanying discussion highlighted a series of findings that have important policy implications.

1. It is difficult to determine the incidence of the cost of retiree health insurance. While the evidence suggests that employers do shift some of the cost of retiree health plans to workers, workers do not bear the full cost of these plans in the form of lower wages. Local governments and school boards seem to have had some success in shifting the cost back to state and federal governments. This observation has implications for comparing the compensation of teachers and other government employees across the country.

2. Workers who are promised by their employers that they will be able to continue to have employer-provided health insurance after leaving the government tend to retire earlier. The measured earlier retirement effect is large and can be considered an important human resource management tool. The finding also implies that public employers considering the elimination or reduction in the generosity of their retiree health plans should be aware of the potential labor market responses and the postponing of retirement that might follow.

3. Evidence indicates that workers covered by retiree health plans tend to save less and have lower retirement wealth near the end of their careers. This finding is consistent with a reduction in the need for cash income when subsidized health insurance is provided.

4. Public employers tend to offer retirees a menu of health plans. Employers can influence the choice of plans by imposing wellness requirements and changing the relative price of alternative health plans.

5. The Affordable Care Act (ACA) may ultimately provide subsidized retiree health insurance to all workers. Based on the findings presented at the conference, we might expect that following the full implementation of the ACA, workers will retire earlier and save less than they did in the past.

6. The continued pay-as-you-go funding of retiree health plans will require an increasing portion of state budgets. Of course, the impact will vary considerably across the states based on the generosity of the health plans and the extent of pre-funding.

7. The promise of retiree health insurance has less legal protection than do pension promises and as such, these promises may not be fully honored by state and local governments. Given this uncertainty, it is not clear whether funding is a better option compared to pay-as-you-go financing.

These research findings provide several important lessons for employers currently offering retiree health insurance. Taken together, these papers clearly show that the promise of health insurance in retirement induces workers to retire earlier and save less. In addition, changes in plan design influences the choice of health plans of retirees. Thus, when managers are deciding to modify or eliminate retiree health plans in an effort to reduce labor costs, they should consider how employees might alter their behavior in responses to such changes and how employee actions might affect total labor cost. The research also indicates that retiree health plans are a valuable benefit and the elimination of these plans would make public sector jobs less desirable.

State and local governments have accumulated large unfunded liabilities associated with retiree health plans and the continued escalation of medical costs is increasing the annual cost of providing this benefit. In response to these financial pressures, employers have been reducing the generosity of retirement plans and in some cases, eliminating this benefit. The cost pressures are real and significant but the research findings presented at the NBER conference suggest that employers must consider the labor market responses to substantial changes in retiree health plans if they are to understand the costs and benefits of modifying these retirement benefits.

REFERENCES

Clark, Robert and Olivia Mitchell. "How Does Retiree Health Insurance Influence Public Sector Employee Saving?" NBER Conference *State and Local Health Plans for Active and Retired Public Employees.* http://conference.nber.org/confer/2013/SLHP13/Clark_Mitchell.pdf

Clark, Robert, Melinda Morrill, and David Vanderweide. "The Effects of Retiree Health Insurance Plan Characteristics on Retirees' Choice and Employers' Costs." NBER Conference *State and Local Health Plans for Active and Retired Public Employees.* http://conference.nber.org/confer/2013/SLHP13/Clark_Morrill_Vanderweide.pdf

Clemens, Jeffrey and David Cutler. "Who Pays for Public Employee Health Costs?" NBER Conference *State and Local Health Plans for Active and Retired Public Employees.* http://conference.nber.org/confer/2013/SLHP13/Clemens_Cutler.pdf

Fitzpatrick, Maria. "Retiree Health Insurance for Public School Employees: Does It Affect Retirement and Mobility?" NBER Conference *State and Local Health Plans for Active and Retired Public Employees.* http://conference.nber.org/confer/2013/SLHP13/Fitzpatrick.pdf

Lutz, Byron and Louise Sheiner. "Examining the Whole Picture: Retire Health Obligations and the Long-Term Budget Outlook for the State and Local Government Sector." NBER Conference *State and Local Health Plans for Active and Retired Public Employees.* http://conference.nber.org/confer/2013/SLHP13/Lutz_Sheiner.pdf

Munnell, Alicia, Kelly Haverstick, and Mauricio Soto. 2007. "Why Have Defined Benefit Plans Survived in the Public Sector," Boston College Center for Retirement Research. http://crr.bc.edu/wp-content/uploads/2007/12/slp_2.pdf

Nyce, Steven, Sylvester Schieber, John Shoven, Sita Slvaov, and David Wise. "Does Retiree Health Insurance Encourage Early Retirement?" *Journal of Public Economics,* 104: 40-51.

Novy-Marx, Robert and Joshua Rauh. "Funding Soft Liabilities." NBER Conference *State and Local Health Plans for Active and Retired Public Employees.* http://conference.nber.org/confer/2013/SLHP13/Novy-Marx_Rauh.pdf

Qin, Paige and Michael Chernew. "Compensating Wage Differentials and the Impact of Health Insurance in the Public Sector on Wages and Salary." NBER Conference *State and Local Health Plans for Active and Retired Public Employees.* http://conference.nber.org/confer/2013/SLHP13/Qin_Chernew.pdf

Shoven, John and Sita Slavov. "The Role of Retiree Health Insurance in the Early Retirement of Public Sector Employees." NBER Conference *State and Local Health Plans for Active and Retired Public Employees.* http://conference.nber.org/confer/2013/SLHP13/Slavov_Shoven.pdf