CENTER for RETIREMENT RESEARCH at BOSTON COLLEGE

To: Connecticut Retirement Security Board

From: Center for Retirement Research at Boston College (CRR)

Date: Revised 5/4/2015

Re: Initial Contribution Rates and Auto-Escalation

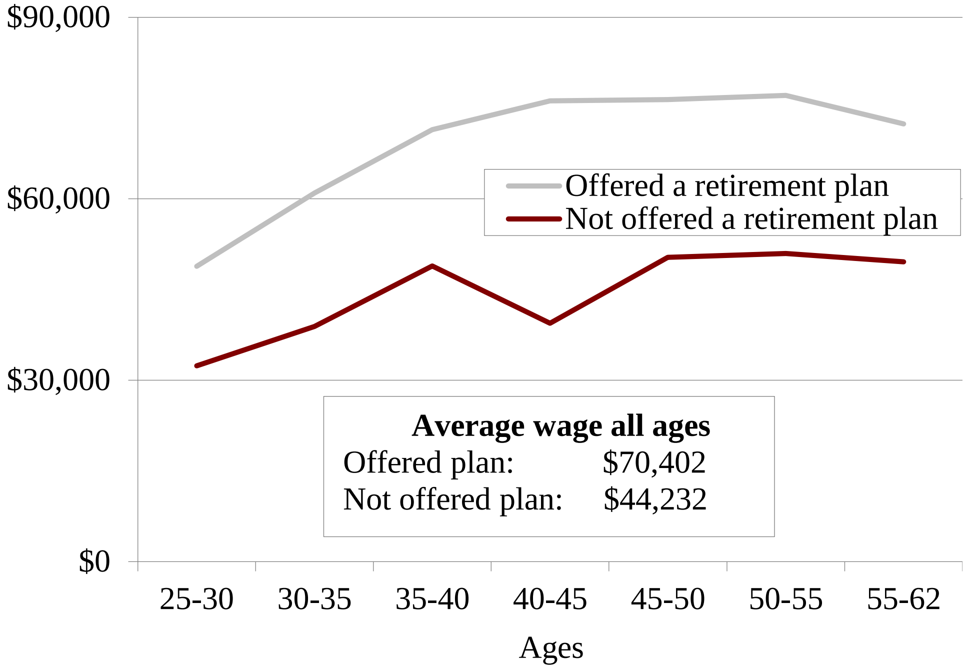
Connecticut must choose the default contribution rate for individuals enrolled in the State's retirement program and decide whether that rate should automatically escalate. The goal of setting these parameters is to ensure maximum savings with minimum opt-out. Connecticut's ultimate decision should be informed by three considerations. First, Connecticut workers will require significant savings to replace their pre-retirement income and thus need to make substantial contributions. Second, workers anchor around defaults, so higher default contribution rates and auto-escalation will produce more saving. Finally, a default rate as high as 6 percent and auto-escalation seem feasible, given that research suggests these features do not cause participants to opt out of the plan. However, because research to date has focused on covered workers, tests are needed to confirm the results for uncovered workers.

Uncovered Connecticut Workers Require Significant Savings

Ensuring adequate retirement income for uncovered workers in Connecticut will be difficult. For the average uncovered worker who claims Social Security at age 62, Social Security will replace just 29 percent of his pre-retirement earnings, well short of commonly cited targets of 70-75 percent.[1] This low replacement rate stems from the fact that uncovered workers in Connecticut, while earning much less than Connecticut pension-covered workers (see Figure 1), earn close to the national average earnings and thus benefit only slightly from Social Security's progressive benefit formula.

[1] For more details on this calculation and results under the assumption that workers claim at the Full Retirement Age of 67, see the Appendix.

Figure 1. *Average Earnings for Private Sector Wage and Salary Workers by Retirement Plan Coverage, 2009-2013 (2013 dollars)*

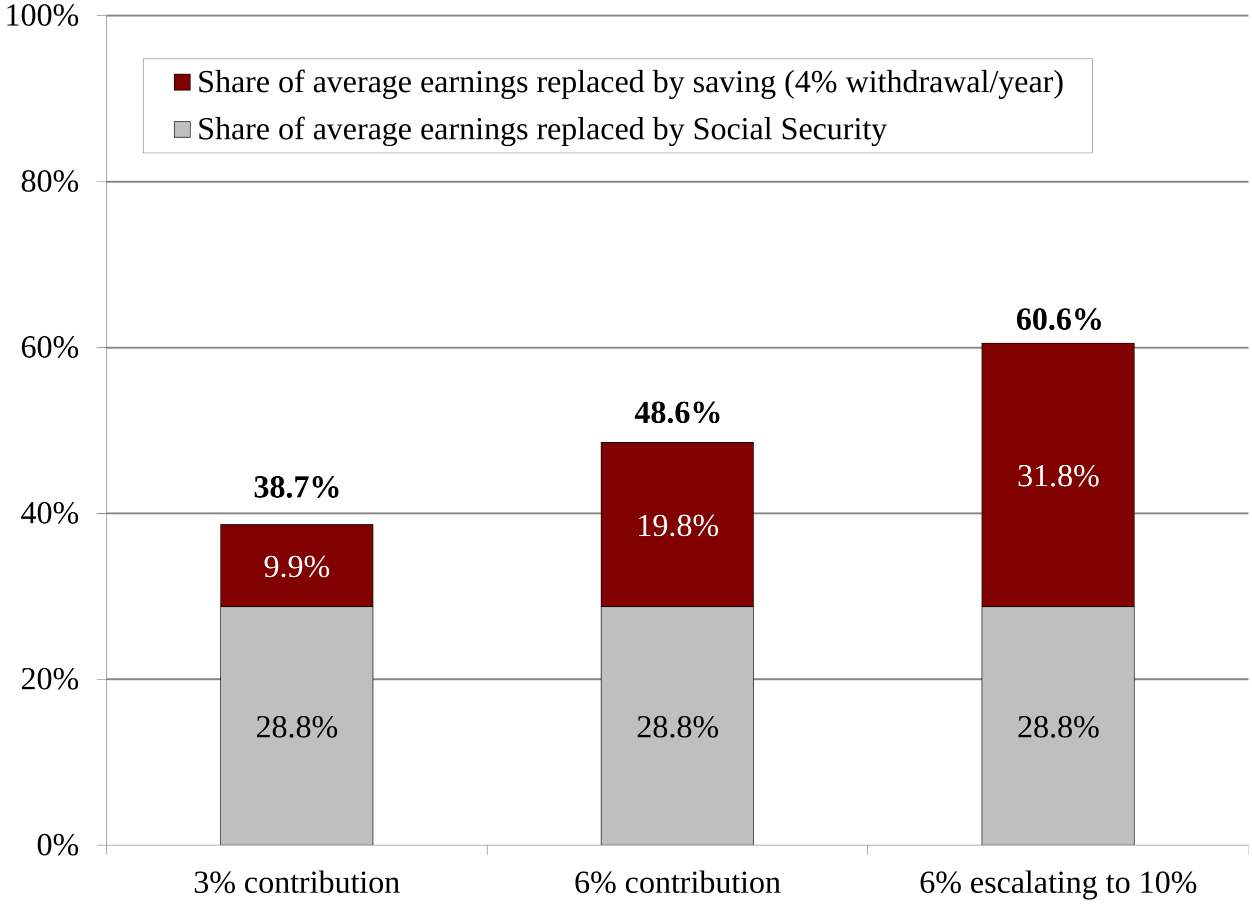


Source: Current Population Survey March Supplement, 2009-2013.

Because of the low Social Security replacement rate, even individuals who start saving early at age 25 will fall short of the 70-75 percent target.[2] The shortfall exists under constant contribution rates of 3 and 6 percent (commonly used defaults) and even under auto-escalation from 6 to 10 percent over the first four years in the plan (see Figure 2). An individual contributing just 3 percent per year will achieve only a 38.7-percent replacement rate (28.8 percent from Social Security and 9.9 percent from retirement savings). Replacement rates rise as the contribution rate increases, but even with auto-escalation to 10 percent the replacement rate only reaches 60.6 percent. If workers delay claiming until their Full Retirement Age of 67, replacement rates are considerably higher, because the Social Security replacement rate increases from 29 percent to 41 percent (see Appendix). Even so, total replacement rates fall short of the benchmark under most scenarios. And most uncovered workers are likely to retire early.

[2] This estimate assumes a 4-percent real rate of return on investments. For details on this calculation, as well as versions of the calculation under different rates of return, see the Appendix.

Figure 2. *Replacement Rates for Individuals Starting Participation at 25, Under Various Contribution Designs*



Source: Authors' calculations from the *Current Population Survey March Supplement*, 2009-2013.

Moreover, not all workers in Connecticut's program will start saving at 25. An obvious example is workers who are already in mid-career when the Connecticut program starts. Workers who start saving later will accrue less in their retirement savings account and thus will replace less of their pre-retirement income. These lower replacement rates are shown in Figure 3 for workers who start saving at age 42 (the average age of Connecticut uncovered pensioned workers), with replacement rates ranging from 32.8 percent to 41.7 percent – far below the target replacement rates.

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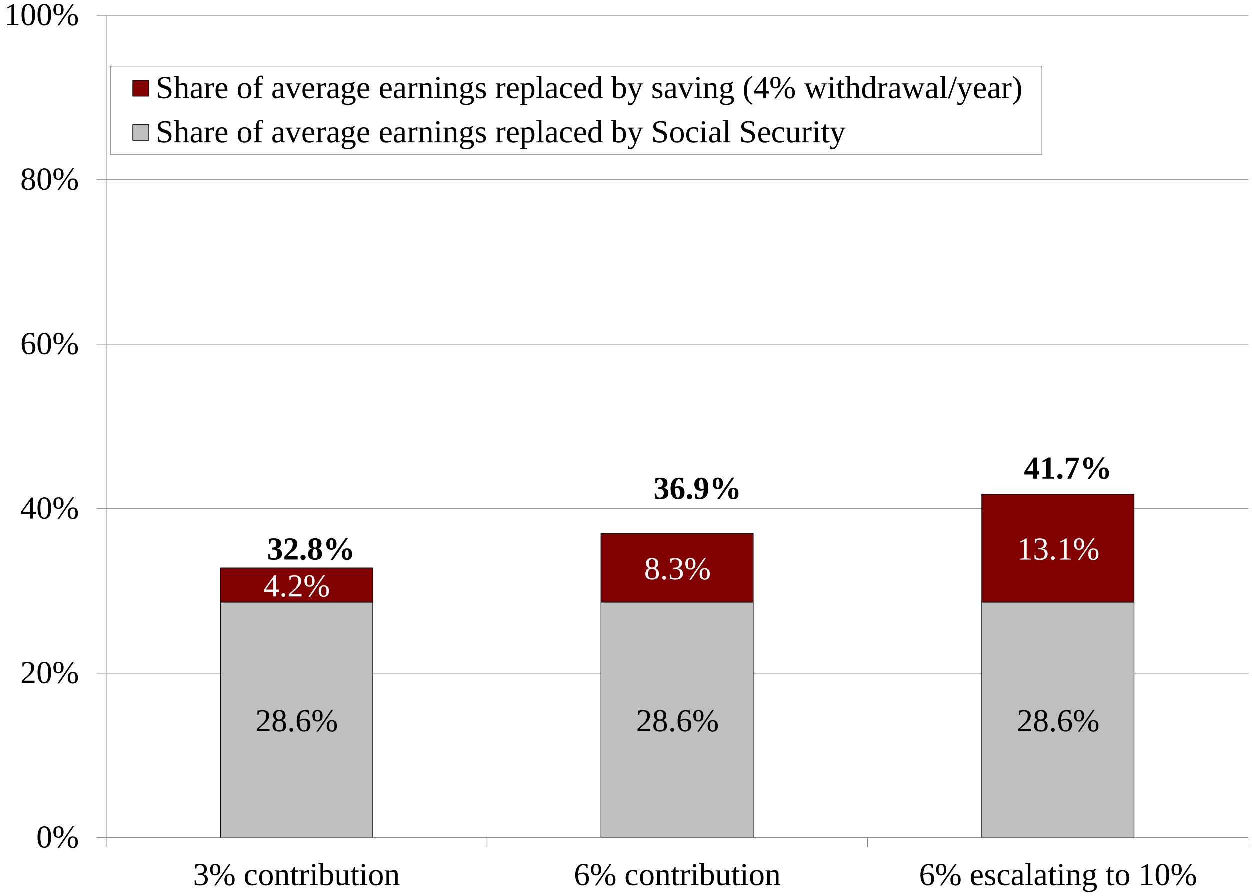
Figure 3. *Replacement Rates for Individuals Starting Participation at 42, Under Various Contribution Designs*



Source: Authors' calculations from the *Current Population Survey March Supplement*, 2009-2013.

These calculations make clear that to get anywhere close to the recommended target replacement rates, participants in Connecticut's program will have to contribute substantial amounts.

Workers Anchor around Defaults

Because workers anchor around defaults, the best way to ensure higher contributions is to set the default contribution rate at a relatively high level. This reasoning would argue for a default rate of 6 percent rather than 3 percent.

Several studies have demonstrated the importance of defaults. In one, 33 percent of individuals automatically enrolled in a 401(k) plan at a 3-percent contribution rate ended up contributing 3 percent or less, compared to just 19 percent for individuals automatically enrolled at 6 percent.[3] In two other studies, workers defaulted in at a 3-percent rate contributed lower amounts to their

[3] Beshears et al. 2009.

401(k)s than workers who had to opt-in to the plan and choose their initial contribution rate.[4] These results suggest that workers automatically enrolled at low rates tend to stay there, even if they would have chosen a higher rate on their own. Of special interest to Connecticut, several studies show that this inertia is likely to be especially acute among lower income workers.[5] The acceptance of defaults is one reason why auto-escalation is an important feature to consider.

An exception to this anchoring rule is when default contribution rates are set very high. One study of a firm in Great Britain found that workers who were defaulted in at a contribution rate of 12 percent were likely to reduce their contributions below the default. After one year, over half of all workers had reduced their contribution rate below 12 percent, with 31 percent of workers reducing their contribution to 4 percent (the minimum contribution rate for the plan). By contrast, in the studies above that involved default contribution rates of 3 or 6 percent, over 85 percent of workers remained at or above the default.[6]

Higher Defaults and Auto-Escalation Do Not Cause Opt-Out

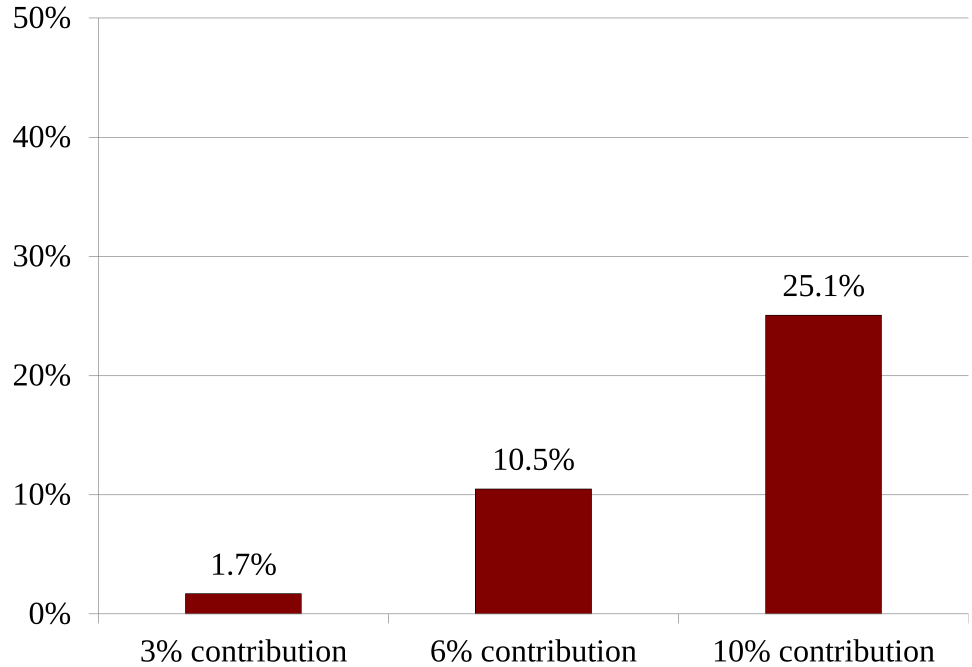
Although the research to date has focused on workers whose employers offer a retirement plan, these results suggest that a default contribution rate of 6 percent will not cause large amounts of opt-out. In a study comparing workers auto-enrolled at a 3-percent versus a 6-percent contribution rate, researchers found no significant difference in the opt-out rate between the two groups.[7] Furthermore, in several studies of workers choosing their initial contribution rate (as opposed to being automatically enrolled) the 6-percent rate was the modal chosen rate – likely because at several of the firms in question 6 percent was also the employer maximum match.[8] These studies suggest that workers in firms offering retirement plans do not view a 6-percent withdrawal from their paycheck as prohibitive.

Less is known about the effect of auto-escalation on opt-out, but the limited results suggest it does not have a large impact. An industry study conducted by Principal Financial Group found only 14 percent of employees automatically enrolled in plans with auto-escalation elected not to allow it (it is unclear whether they participated at a fixed rate).[9]

Despite these positive results, because the literature has generally relied on case studies of workers already in private sector plans, Connecticut should test default rates of 3 and 6 percent and an option of auto-escalation from 6 to 10 percent to see if the targeted population will behave in the manner predicted by the literature above. One concern in setting a relatively high initial default rate is that many individuals will end up exceeding the $5,500 contribution limit. However, only 10.5 percent of uncovered workers will hit that threshold at a contribution rate of 6 percent, which should alleviate that concern (see Figure 4).

[4] Madrian and Shea 2001 and Choi et al. 2005.
[5] For example, Madrian and Shea 2001, Choi et al. 2001, and Beshears et al. 2010.
[6] Beshears et al. 2010.
[7] Beshears et al. 2009.
[8] For example, see Choi et al. 2001.
[9] Principal Financial Group 2015.

Figure 4. *Share of Uncovered Workers Over $5,500 Contribution Limit At Various Contribution Rates*



Source: Authors' calculations from the *Current Population Survey March Supplement*, 2009-2013.

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Appendix

Calculating replacement rates requires a measure of pre-retirement income (the denominator) and post-retirement income (the numerator). This Appendix describes how these quantities were calculated in constructing Figures 2 and 3.

Calculating Pre-Retirement Income

Pre-retirement income is the average wage for uncovered workers in Connecticut as calculated from the *Current Population Survey,* which averaged $44,232 between 2009 and 2013. The average wage of uncovered workers in Connecticut is close to the average wage index used by Social Security, which was approximately $44,600 in 2013 dollars on average between 2009 and 2013.

Calculating Post-Retirement Income

Post-retirement retirement income comes from two sources: 1) Social Security and 2) income from retirement savings.[10] For an individual who claims Social Security at age 62 and who has average earnings of $44,232, the Social Security benefit is $12,726 and would replace 29 percent of pre-retirement income. If workers delay claiming until their Full Retirement Age of 67, replacement rates are considerably higher, because the Social Security replacement rate increases from 29 percent to 41 percent (see Table A1).

Table A1. *Total Replacement Rates under an Assumption of Age 67 Claiming (with 4-Percent Withdrawal at Retirement and 4-Percent Real Rate of Return on Investments)*

Start age	3 % cont.	6 % cont.	6 to 10 % cont.
25	51.0%	60.9%	72.9%
42	45.1	49.2	54.0

Source: Authors' calculations from the *Current Population Survey March Supplement*, 2009-2013.

Income from the Connecticut program depends on four factors: 1) the contribution rate; 2) the age at which saving starts; 3) the individual's strategy for drawing down their savings; and 4) the real rate of return on investments. Variations of the first two assumptions were shown in Figures 2 and 3. In both figures, workers were assumed to follow a commonly cited rule-of-thumb, withdrawing 4 percent of their account balance per year as income. However, the Connecticut legislation suggests another option for drawdown – the purchase of an inflation-indexed annuity, with options for spousal benefits. To test the sensitivity of the replacement rate calculations to this mode of withdrawal, Table A2 assumes an individual uses 100 percent of his account balance to purchase an inflation-indexed annuity with survivor benefits. In this calculation, each $100,000 invested in the annuity at age 62 purchases a yearly benefit of $3,614 (an annuity rate

[10] This analysis ignores the role of home ownership, which can make it easier to replace pre-retirement earnings should the mortgage be paid off prior to retirement. Because two-thirds of uncovered workers own their residences, replacement rates here should be viewed as conservative.

of 3.614 percent).[11] This assumption reduces replacement rates slightly relative to those in Figures 2 and 3, because the 3.614-percent annuity rate is less than the assumed 4-percent withdrawal rate.

Table A2. *Total Replacement Rates under Purchase of Inflation-Indexed Joint and Survivor Annuity (with Age 62 Social Security Claiming and 4-Percent Real Rate of Return on Investments)*

Start age	3 % cont.	6 % cont.	6 to 10 % cont.
25	37.7%	46.6%	57.5%
42	32.4	36.2	40.5

Source: Authors' calculations from the *Current Population Survey March Supplement*, 2009-2013 and IncomeSolutions.com.

Finally, Figures 2 and 3 also assumed a real rate of return of 4 percent. Because this assumption is somewhat conservative, Table A3 shows the total replacement rate (Social Security + retirement savings) under assumptions of a 4.5- and a 5.5-percent real rate of return. The results show that, even at relatively high rates of return, a replacement rate of 70-75 percent is difficult to achieve except under auto-escalation.

Table A3. *Total Replacement Rates under Alternative Real Rate of Return Assumptions and Contribution Amounts (with Age 62 Social Security Claiming and 4-Percent Withdrawal at Retirement)*

	4.5 percent			5.5 percent		
Start age	3 % cont.	6 % cont.	6 to 10 % cont.	3 % cont.	6 % cont.	6 to 10 % cont.
25	39.8%	50.7%	63.9%	42.4%	56.0%	72.2%
42	33.0	37.4	42.5	33.5	38.4	44.0

Source: Authors' calculations from the *Current Population Survey March Supplement*, 2009-2013.

[11] The reported annuity rate was obtained from IncomeSolutions.com on April 21, 2015. The quote represents the Principal Financial Group's Inflation Adjusted (CPI-U) Joint and Survivor Life Only product.