# Annuity Options in Public Pension Plans: The Curious Case of Social Security Leveling

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## Acknowledgements

# Introduction: Navigating Retirement Decisions

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- **Can retirees successfully navigate this decision?**

# The Curious Case of Social Security Leveling

- Social Security Leveling is an annuity option allowing for level income before and after age 62:
  - Larger pension benefit prior to age 62.
  - Pension benefit is reduced by amount of *expected* Social Security benefit after age 62 regardless of claiming.

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  **This paper:**
  1. Which individuals might most benefit from leveling?
  2. Do characteristics of levelers match with predictions?
  3. Do retirees have sufficient financial knowledge?
  4. Do retirees express ex post "regret" over the decision?

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  - 51% retire prior to age 62
- Typical DB structure: $B_{MAX} = Early * M * YOS * FAS$

  Multiplier M is 0.0185 for LGERS and 0.0182 for TSERS

- 6 annuity options:
  - 4 J&S and 2 single-life options
  - Cost-neutral to the *retirement system* and gender-neutral
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- **Sample:** Retired before 62 and chose S-L, N = 2,256.

# The Curious Case of Social Security Leveling

- Leveling not uncommon in public plans.
    - 20 out of 85 large state-managed public plans have a level income option (Clark & Cowell 2016)

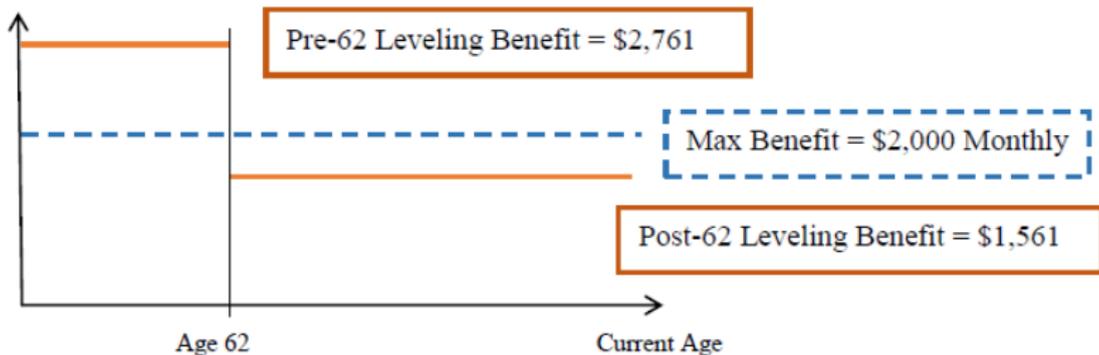# The Curious Case of Social Security Leveling

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- NC SS Leveling formula relative to Maximum Benefit:

$$B^1_{LEV} = B_{MAX} + SS * F$$

$$B^2_{LEV} = B^1_{LEV} - SS$$

- F is cost-neutral to the *retirement system* at 7.25%.

# Hypothetical Leveling Benefit



Pre-62 Leveling Benefit = $2,761

Max Benefit = $2,000 Monthly

Post-62 Leveling Benefit = $1,561

Age 62    Current Age

Assumptions:

- Claim benefit at age 57
- Maximum single-life benefit of $2,000/month
- Social Security benefit of $1,200 at age 62
- Uses actual reduction factor with 7.25% discount rate.

# The Curious Case of Social Security Leveling

- Is higher initial benefit appealing to those lacking financial sophistication?

- How big a mistake could people make in present value terms?

# Hypothetical Leveling Benefit

**Present Value** depends on assumed Personal Discount Rate

|  | 0% | 2.9% | **7.25%** | 14.5% |
|---|---|---|---|---|
| SS Leveling | $569,834 | $401,727 | **$272,972** | $179,203 |
| Maximum Benefit | $639,017 | $429,908 | **$273,024** | $163,598 |

Percent Difference: (Maximum - Leveling)/Maximum

|  | 11% | 7% | **0%** | -10% |
|---|---|---|---|---|

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# Social Security Leveling and Consumption Smoothing

**Who benefits most from leveling:**

- Less patient and high personal discount rate
- Shorter life expectancy
- Less wealth accumulated, higher cost of borrowing
- No other source of income:
    - No spouse income
    - No work after retirement

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**Ambiguous predictions:**

- Age at retirement
- Poor health
- Attitudes towards risk

# Multivariate Regression Results:
## Who Chose Social Security Leveling?

**Results:**

- Personal discount rate (hypothetical choice questions):
  - More impatient chose leveling
- Life expectancy (demographics):
  - Men, minorities, and lower educated chose leveling
- Wealth and access to income and low cost borrowing:
  - Lower savings and wealth, lower educated chose leveling

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**Financial Literacy:**

- **No relationship with financial knowledge questions**

# Multivariate Regression Results: Who Chose Social Security Leveling?

|  | SS Leveling | |
|---|---|---|
| Male | 0.055 | (0.025)** |
| Married | -0.008 | (0.019) |
| Non-Hispanic Black | 0.158 | (0.026)*** |
| BA Degree | -0.056 | (0.024)** |
| Age at Claiming | -0.036 | (0.003)*** |
| Initial Benefit Amt ($1K) | -0.039 | (0.011)*** |
| Impatient: Benefit Frame Only | 0.055 | (0.029)* |
| Impatient: Lottery Frame Only | 0.066 | (0.027)** |
| Impatient: Both Frames | 0.092 | (0.028)*** |

N = 2,256, Mean dep. var. 0.317. Add'l covars: other race/ethnicity, YOS, risk aversion, item non-response indicators, agency type, and year of claiming.
* p<0.1; ** p<0.05; *** p<0.01

# Navigating Retirement Decisions

- Consumption smoothing assumes perfect knowledge.
- Myopic Benefit Maximization:
    - Is higher initial amount attractive?
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- Consumption smoothing assumes perfect knowledge.
- Myopic Benefit Maximization:
  - Is higher initial amount attractive?
  - Do people realize benefit will drop at age 62?
- Ex post reports of retirement decision-making:
  - Saved enough
  - Maintain standard of living
  - Had enough information
- Some survey respondents had crossed age 62 threshold
- Regression includes all covariates:
  - Demographics, YOS, year of claiming, etc.

# Navigating Retirement Decisions

|  | Saved Enough |
|---|---|
| SS Leveling * Current Age < 62 | -0.054 (0.028)* |
| SS Leveling * Current Age >= 62 | -0.090 (0.036)** |
| Current Age >= 62 | 0.061 (0.037)* |
| Number of Obs. | 2,146 |
| Mean Dep. Var. | 0.335 |

Levelers are significantly less likely to report believing they had **saved enough** for retirement while working.

# Navigating Retirement Decisions

|  | Saved Enough | Maintain Standard of Living |
|---|---|---|
| SS Leveling * Current Age < 62 | -0.054 (0.028)* | 0.076 (0.031)** |
| SS Leveling * Current Age >= 62 | -0.090 (0.036)** | -0.015 (0.039) |
| Current Age >= 62 | 0.061 (0.037)* | 0.069 (0.040)* |
| Number of Obs. | 2,146 | 2,138 |
| Mean Dep. Var. | 0.335 | 0.530 |

Levelers are significantly more likely to report being able to **maintain their standard of living**, but only prior to age 62.

## Navigating Retirement Decisions

|  | Saved Enough | Maintain Standard of Living | Had Enough Info |
|---|---|---|---|
| SS Leveling * Current Age < 62 | -0.054 (0.028)* | 0.076 (0.031)** | -0.002 (0.022) |
| SS Leveling * Current Age >= 62 | -0.090 (0.036)** | -0.015 (0.039) | -0.060 (0.029)** |
| Current Age >= 62 | 0.061 (0.037)* | 0.069 (0.040)* | 0.030 (0.029) |
| Number of Obs. | 2,146 | 2,138 | 2,151 |
| Mean Dep. Var. | 0.335 | 0.530 | 0.841 |

Levelers significantly less: **had enough information to make good decisions regarding retirement** only *after* age 62.

# Summary:
# The Curious Case of Social Security Leveling

- Observed annuity type consistent with predictions:
  - Impatience in hypothetical choice questions.
  - Demographics associated with lower life expectancy (male, non-white, lower educated)
  - Lower wealth and assets, lower human capital

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- No relationship with financial knowledge.
- Ex post measures:
    - Levelers report not saving enough for retirement.
    - Levelers have higher standard of living prior to age 62.
    - Levelers report not having had enough information.

# Conclusions

- Leveling enables young retirees to smooth consumption.

- High interest rate yields a lower PV under "reasonable" assumptions of personal discount rates.

- Evidence suggests some role for better information.

- **Overall, we find that public sector retirees in NC are successfully navigating this retirement decision.**

# Related Questions for Future Work

1. Does Social Security Leveling influence other aspects of the retirement process?
   - Disincentivize saving for retirement?
   - Allow workers to retire earlier?
   - Reduce work after retirement?
   - Earlier Social Security claiming?
2. Does this affect retirement income security?
3. Should the plan adopt a lower discount rate?
4. If so, what are the implications of offering a leveling option for age 66 or 70?

# North Carolina Retirement Transitions Study (NCRTS)

- Part of a larger 6-year project on public sector retirement
- 2014 Active Worker Cohort Surveys 2014, 2016, & 2018:
    - Planning for retirement
    - Retirement timing
    - Health and caregiving
- 2009-2014 Benefit Claimant Cohort Surveys 2015 & 2017:
    - Annuity choice at retirement
    - Post-retirement employment
    - Retirement-income security and well-being