

How May Full Retirement Dates Affect Comment for Their Retirement Benefits

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- This paper reexamines the IL teacher pension upgrade experience using pension system (TRS) data tracking the 1998-99 (22-28 experience) cohort to 2019. Actual retirement annuity and timing.
- Findings
 - More teachers purchased upgrade (87% versus 74%)
 - Importantly, nearly all teachers who did not purchase upgrade were better off not making the purchase
 - IL pension upgrade experience not well suited to answer the question

Figure 1: Decent Values of Densities $W_{\text{Model}}(t)$, $W^*(t)$, and $W^{\dagger}(t)$ for $t \in [0, T]$

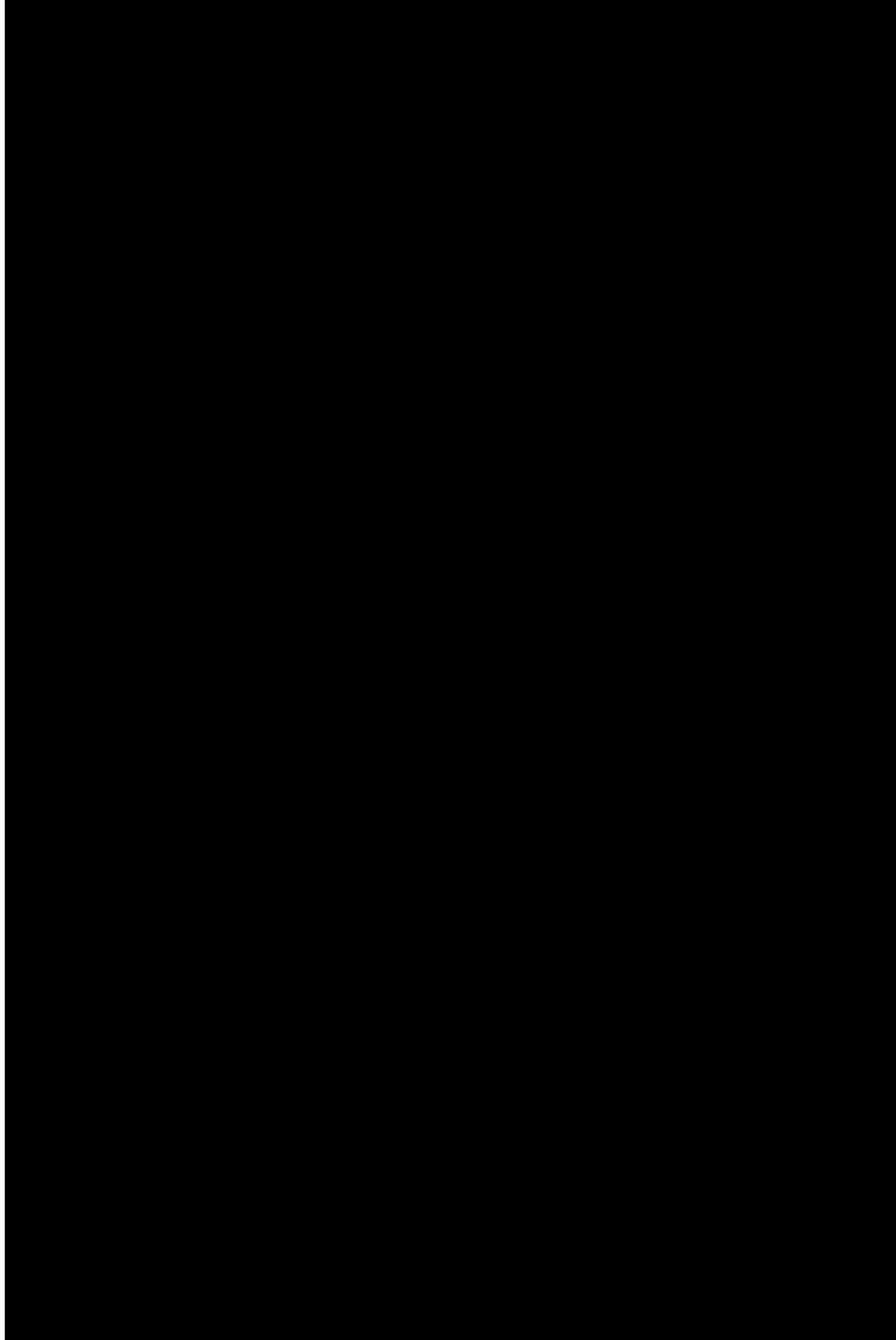
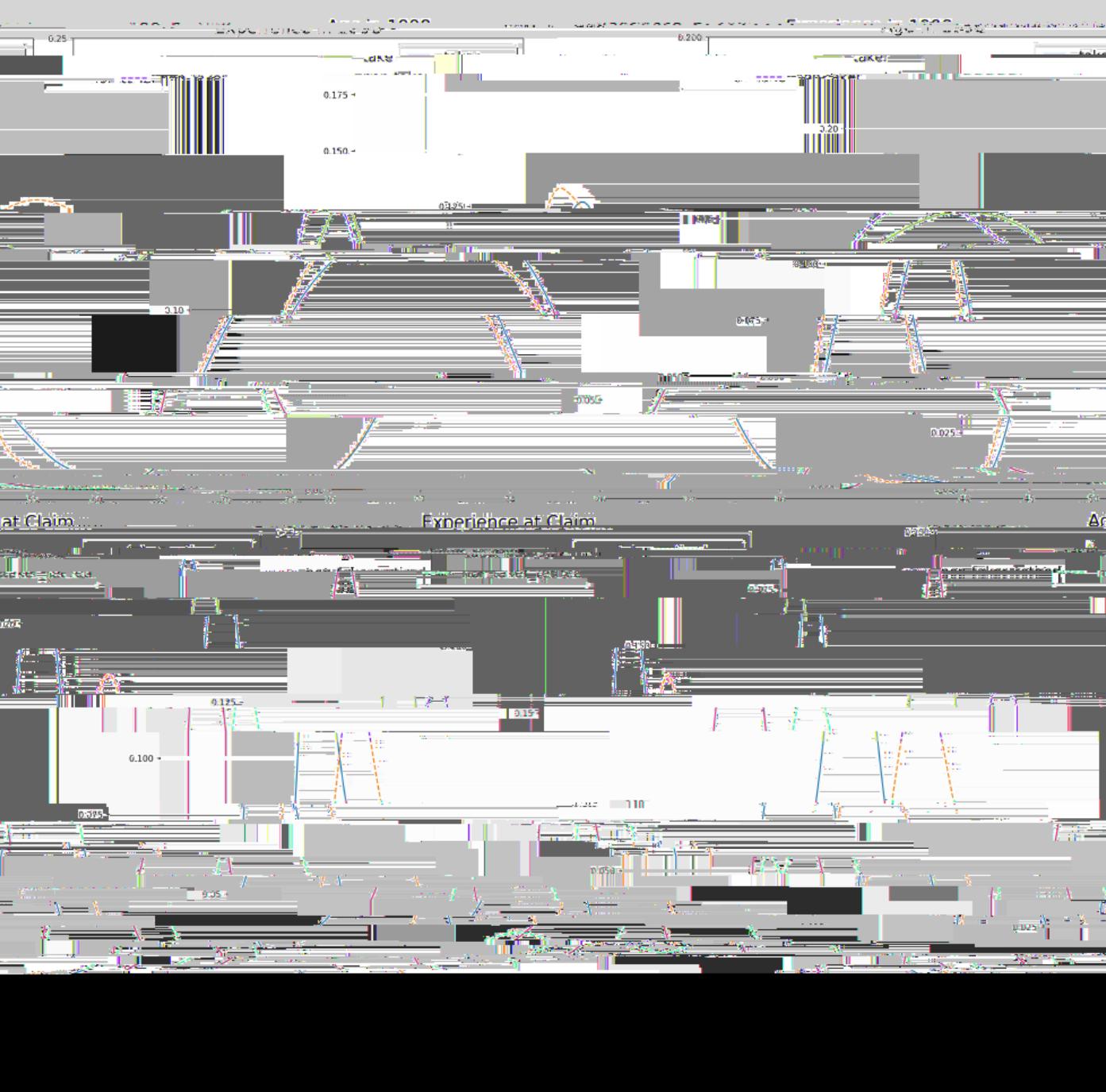
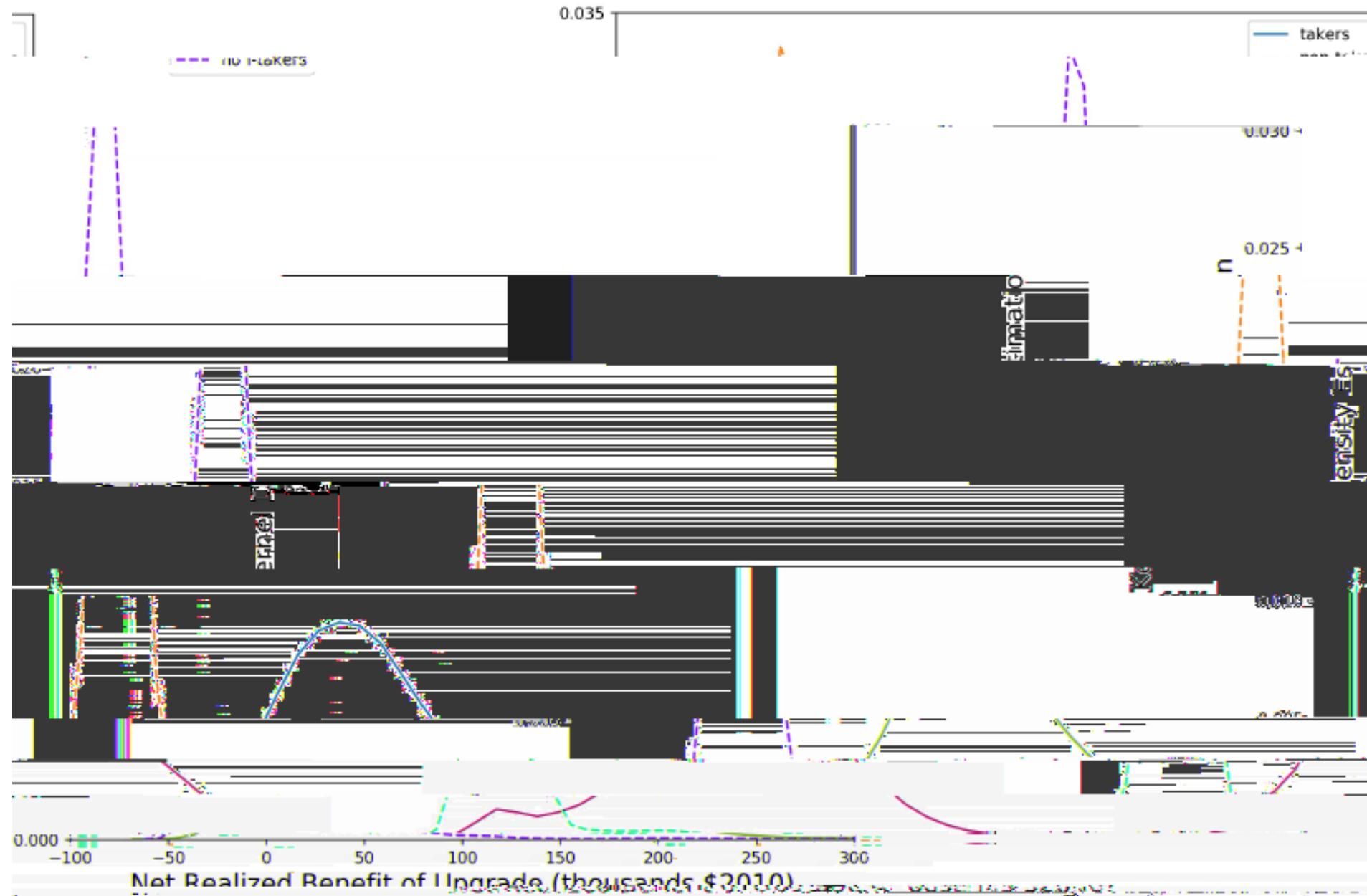


Figure 2: Age and Experience Distribution of Takers and Non-Takers in 1998 and 2002: Retiree and Claim Data from the Panel Survey



and North takers. Figure 2: Distribution of Net Realized Benefit from Upgrade for takers



PLACE EXECUTIVE NOTTAKERS

(4)	(5)	(6)	(1)	(2)	(3)
121,552	106,297	101,800	taker	16,654	87.1%
121,552	106,297	101,800	taker	34,733	19.0%
121,552	106,297	101,800	taker	10,594	86.3%
104,382	Male	6,620	100.0%	16,902	93,230
105,313	taker	5,860	88.5%	17,057	106,897
105,313	Male	5,860	100.0%	17,057	106,897

Initial Herd of Upgraders of Bakken and Non-upgraders' Substitution and Stratification of Net-Value

	positive	negative	Total					
positive	0.90	-0.09	0.80	+1.00	1.00	500	+10,000	10,000
22.07%	12.10%	107.00%						
non-taker	120	2,252	2,372					
0.55%	0.54%	0.44%						
taker	110	1,748	1,858					
0.45%	0.46%	0.49%						
no wrong	0.00	0.00	0.00					
no wrong	0.00	0.00	0.00					

decision

- Econometric paradox
- Even with updated (ex post) data on retirement timing and actual

~~for individual i, the probability of upgrading from pension level P_i to P_{i+1} is given by the following formula:~~

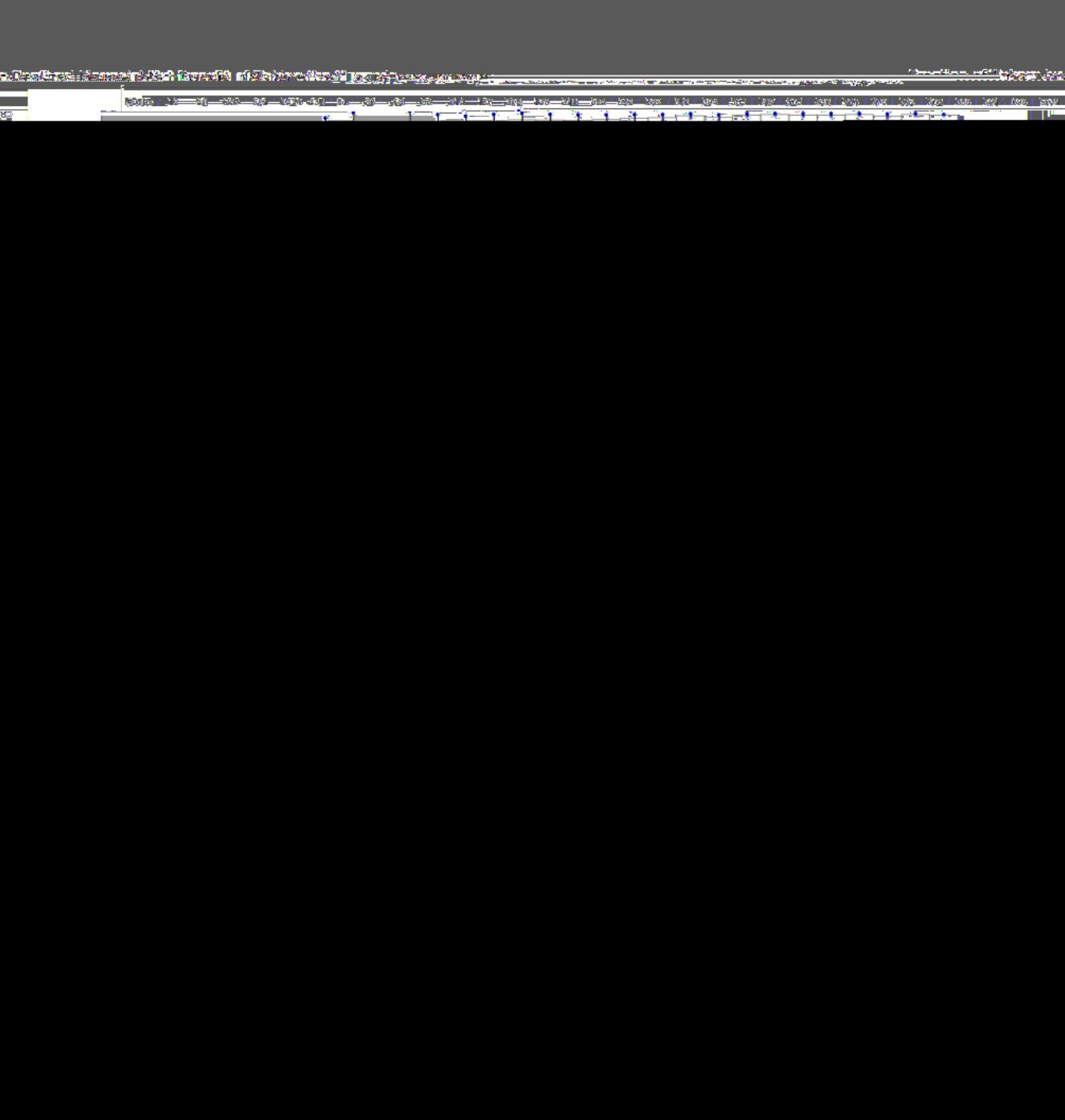
de: linear probability model of individual demand for the pension upgrade

$$Pr(P_{i+1} \geq P_i) = \hat{\beta}_0 + \hat{\beta}_1 P_i + \hat{\beta}_2 S_i + \hat{\beta}_3 R_i + \hat{\beta}_4 \gamma + \hat{\beta}_5 e_i$$

$$\text{Ratio } \frac{P_2}{P_1} = 1$$

Add. (2015)	Estimates						
	Unadjusted		Instrumental Variables		Difference-in-Differences		
	OLS	IV	OLS	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
price	0.010*** (0.003)	0.010*** (0.018)	0.004 (0.000)	0.004 (0.000)	0.004 (0.001)	0.002 (0.008)	0.002 (0.002)
benefit	0.096 (0.000)	0.076 (0.000)	-0.187*** (0.002)	-0.257*** (0.003)	0.173*** (0.003)	Predicted Annuity ratio of coeff 0.142*** (0.000)	-0.174*** (0.001)
# obs.	10204	10204	10126	15601	15900	15601	15900
region	0.014*** (0.000)	0.011*** (0.001)	0.010** (0.007)	0.010*** (0.001)	0.009*** (0.007)		
.	0.003*** (0.000)	0.003*** (0.000)	0.004*** (0.001)	0.004*** (0.000)	0.005*** (0.001)	benefit	
.						Realized Annuity	
benefit	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)		
char.	X	X	X	X	X	X	District char.
acteristics							

- Problem with instruments (benefit and price are both functions of salary) (Goldhaber and Holden, 2020)
- Problem with LPM (and non-linear)
 - 7
 - 10
 - 10
 - 10
 - 10



- Vast majority of Illinois teachers made upgrade decisions consistent with PW maximization at conventional discount rates (2%)
- Illinois upgrade experience not well suited to estimate WTP of teachers for pension upgrades
- Illustrates (yet again) that pension plan incentives affect timing of retirement
 - Very important to understand behavioral effects of pension rules in estimating the costs or benefits of pension rule changes