

Public pension programs and the retirement timing of older immigrants to Canada

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Motivation

- Paucity of literature on immigrant retirement
- Would give a closer to complete picture of fiscal impact
- Are older immigrants responsive to policy provisions?

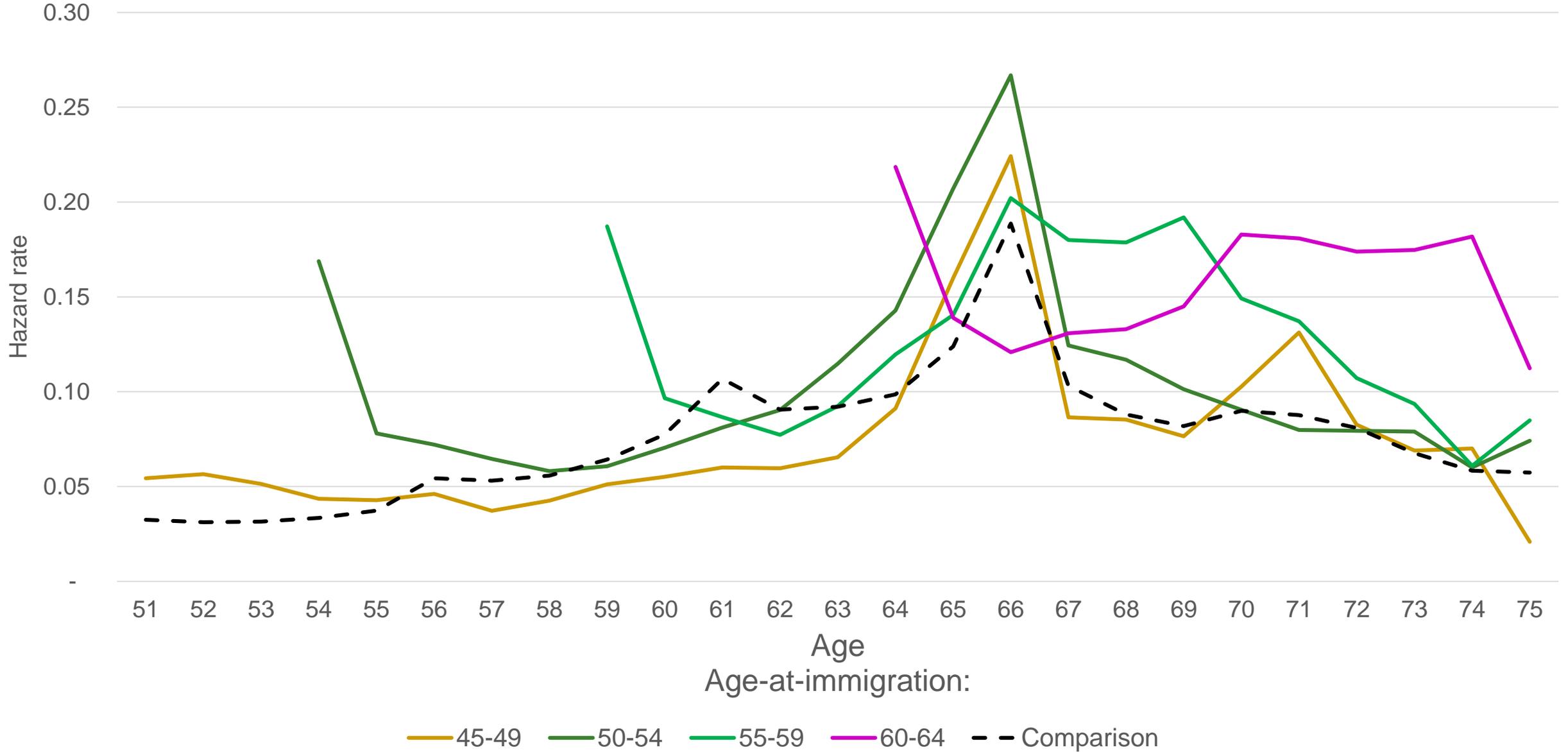
Institutional background

- Old Age Security (OAS) and the Guaranteed Income Supplement (GIS)
 - *For individuals 65+*
 - *Sufficiently low tax family net-income*
 - *Recovery taxes & clawback create labor supply disincentives*
- Residency requirements
 - *No benefit: years-since-migration < 10*
 - *Partial benefit: 10 <= years-since-migration < 40*
 - *Full benefit: 40 >= years-since-migration*
- Social security eligibility agreements
 - *Residency in country of last permanent residency counts*
 - *Can collect public pensions outside of Canada*

LAD

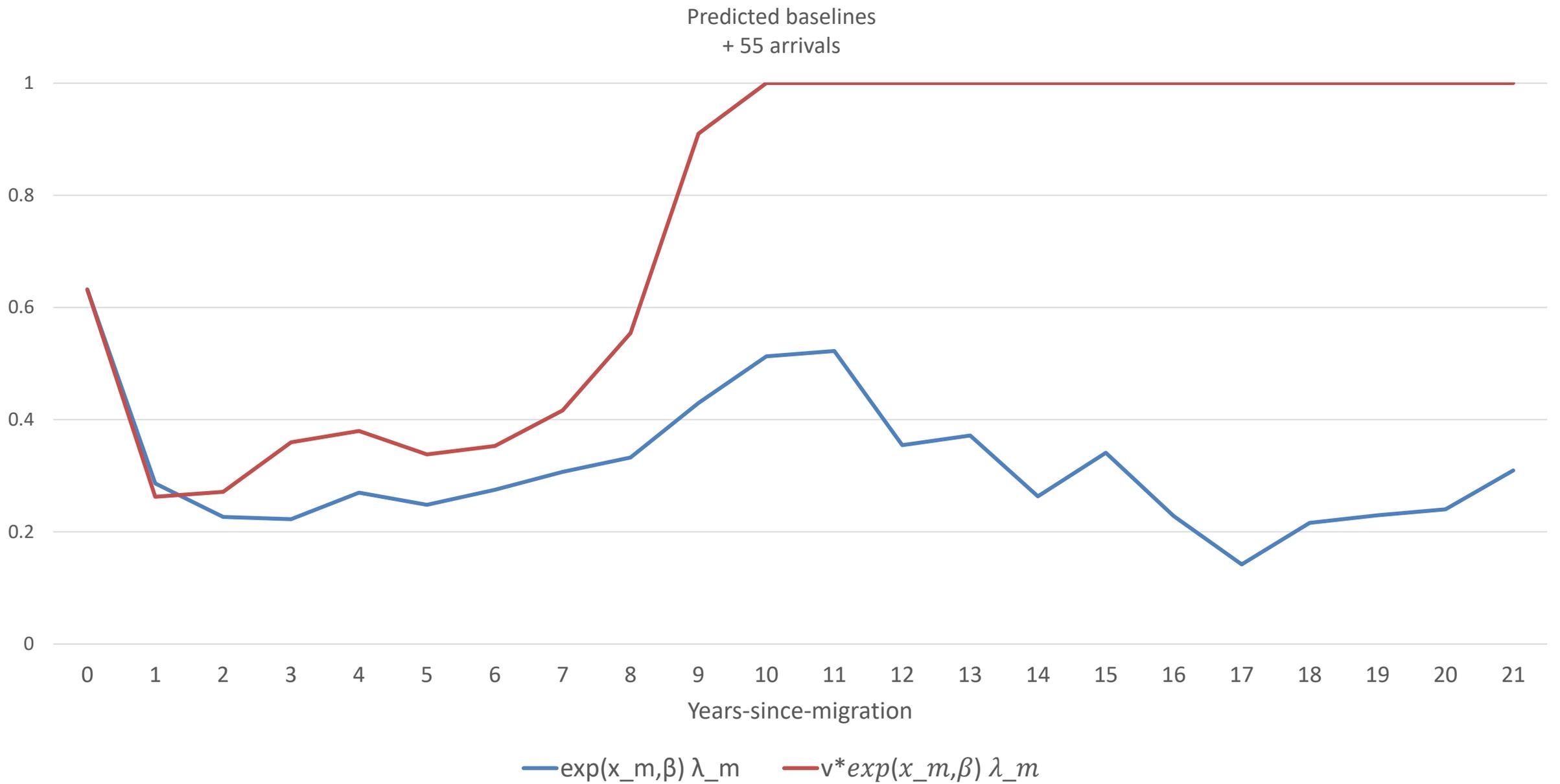
- Allows for a Comparison group
 - *BIG limitation: only information on post-1980 arrivals*
- Retirement timing of late age arrivals
 - *Analysis of those arriving 45 and older*
- Employment income based definition of retirement

Empirical retirement hazard



Discrete-time duration model

- Piecewise-constant baseline hazard with time-varying covariates
 - $\lambda(t; x_m, \theta) = \exp(x_m, \beta) \lambda_m$ ---- $a_{m-1} \leq t < a_m$
 - Prentice-Gloeckler (1978) complementary log-logistic
 - Flexible baseline
- With Gamma-distributed heterogeneity
 - $\lambda(t; v, x_m, \theta) = v * \exp(x_m, \beta) \lambda_m, v > 0$
 - *Prentice-Gloeckler-Meyer (1990)*
 - *Addresses downward bias due to dynamic (duration) selection*
 - $1 - \exp(- \exp(x_m, \beta) \lambda_m)$



Post-55 arrivals	Complementary log-logistic	With Gamma het.
<u>Admissions class</u>		
Skilled	0.81***	0.72***
Refugee	1.33***	2.33***
Economic, P	0.98*	0.73***
Economic, SD	1.10*	1.03
Other	1.12***	1.14***
<u>Signed agreement</u>		
Yes	0.80***	0.56***

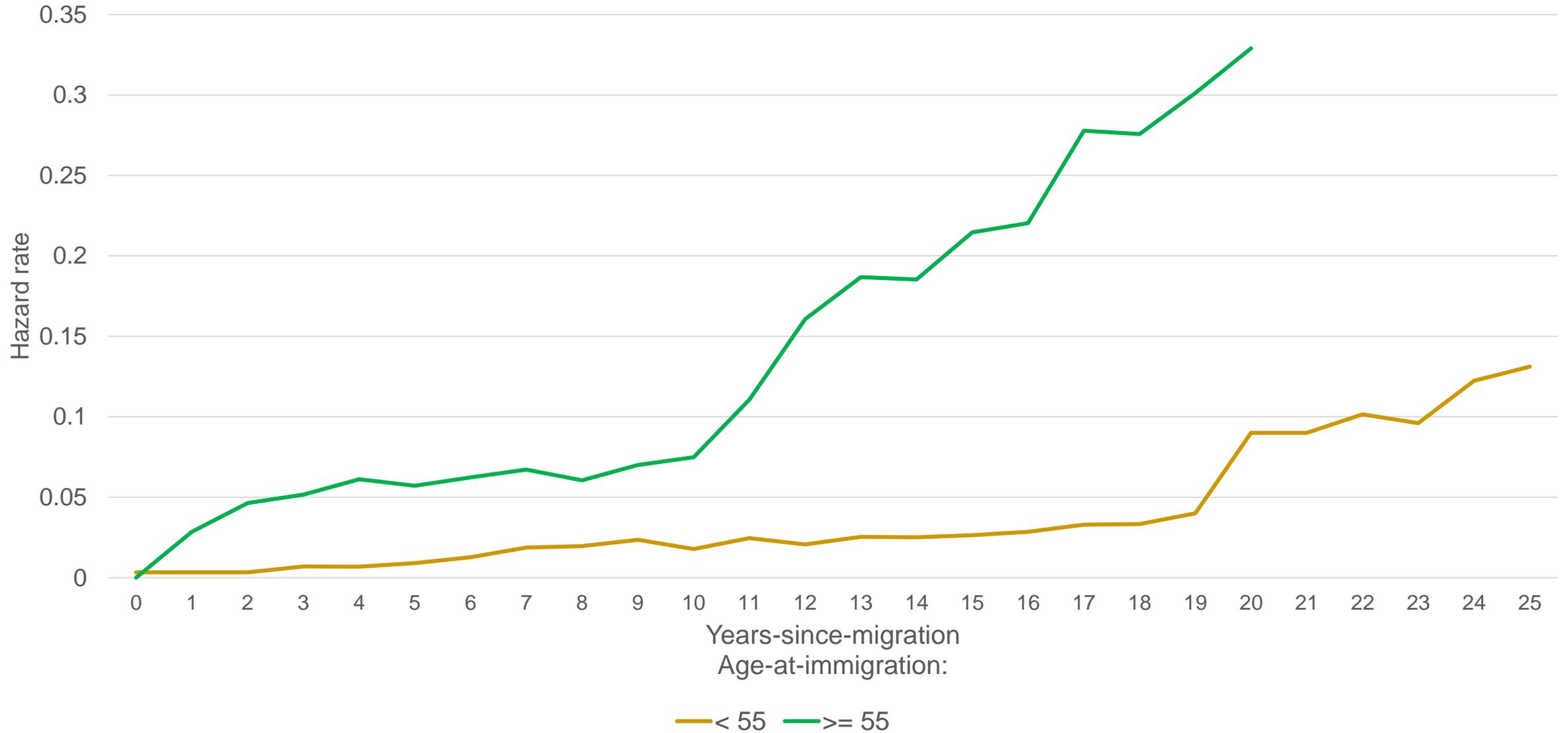
Pre-55 arrivals	Complementary log-logistic	With Gamma het.
<u>Admissions class</u>		
Skilled	0.79***	0.77***
Refugee	1.09	1.18***
Economic, P	1.20***	1.08
Economic, SD	1.43***	1.29***
Other	0.94	0.87***
<u>Signed agreement</u>		
Yes	0.70***	0.67***

Early censoring

- Cessation of income tax-return filing
 - *Emigration?*
 - *Important for assessing fiscal impact*

- Empirical hazards coincident with signed SSA

Empirical censoring hazard



Competing risks regression

- Two possible states/exit alternatives
- $T_i \perp T_j, i \neq j$
 - *As assumed in complementary log-logistic*

Post-55 arrivals	Retire	Censor
<u>Admissions class</u>		
Skilled	0.80***	1.19***
Refugee	1.37***	1.22
Economic, P	1.01	1.70***
Economic, SD	1.12*	1.53***
Other	0.17*	2.01***
<u>Signed agreement</u>		
Yes	0.80***	1.62***

Pre-55 arrivals	Retire	Censor
<u>Admissions class</u>		
Skilled	0.79***	1.05
Refugee	1.09	0.87
Economic, P	1.20***	2.26***
Economic, SD	1.44***	2.63***
Other	0.94	1.35***
<u>Signed agreement</u>		
Yes	0.70***	1.19**

Baseline by signed SSA

- Hazard with SSA x Baseline interaction

Post-55 arrivals	Retire	Censor
SSAx0	1.19***	-
SSAx1	1.23***	1.45***
SSAx2	1.04	1.21***
SSAx3	0.98	1.12*
SSAx4	0.86	1.44***
SSAx5	0.76**	1.50***
SSAx6	0.96	1.41***
SSAx7	0.87	1.51***
SSAx8	0.74	1.12*
SSAx9	0.58***	1.28
SSAx10	0.78***	1.11
SSAx11	0.95	0.98
SSAx12	0.88	1.17
SSAx13	0.68**	1.19
SSAx14	1.16	0.67

Pre-55 arrivals	Retire	Censor
SSAx10	.72***	1.30
SSAx11	.89	1.01
SSAx12	.84*	1.05
SSAx13	.75***	1.32
SSAx14	.83*	0.81
SSAx15	.94	1.2
SSAx16	.91	0.97
SSAx17	.95	1.14
SSAx18	.74*	0.88
SSAx19	1.03	1.06
SSAx20	.84	0.96
SSAx21	.68	0.96
SSAx1	0.87	1.20***

Conclusions

- Residency requirements influence retirement timing
- Duration dependence in retirement hazard
- Signed social security eligibility agreements influence censoring
- Class differences in retirement & censoring incidence
 - *Family class & refugees likely to retire*
 - *Economically assessed less likely to retire; more likely to censor*