Demographics and Real Interest Rates Across Countries and Over Time*

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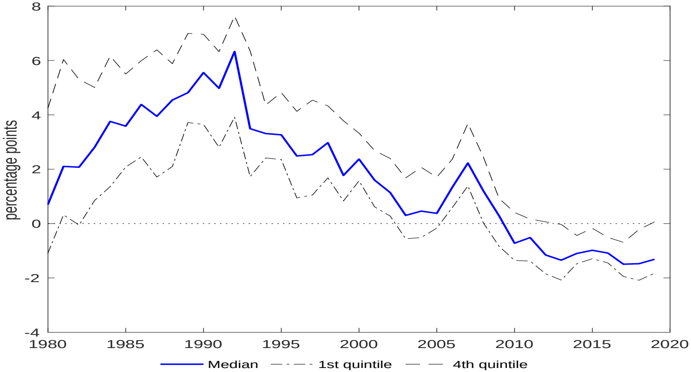
Real Interest Rates in Advanced Economies

- Between 1990 and 2019, real interest rates exhibited
  1. Large persistent decline
  2. Falling dispersion across countries



Note: Ex-ante real short-term interest rates (nominal yields minus expected inflation) for 19 OECD countries

Real Interest Rates in Advanced Economies

- Between 1990 and 2019, real interest rates exhibited
  1. Large persistent decline
  2. Falling dispersion across countries

- Demographic trends among candidate explanations for secular decline of real interest rates
  - Lots of existing work in closed economy, including Carvalho, Ferrero and Nechio (2016)

- **How do demographic trends affect real interest rates in open economy?**
  - Domestic vs. foreign demographics
  - Interaction of demographics and (imperfect) capital mobility

What We Do and What We Find

1. Calibrate and simulate **multicountry life-cycle model with imperfect capital mobility**
   - Demographic trends account for about 1/3 of fall in real rates between 1990 and 2019
   - Financial integration shifts sensitivity of real interest rate towards global demographics
     - ★ Explains almost entire decline in dispersion of real rates across countries

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2. Estimate **panel ECM** on data between 1980 and 2019 accounting for financial integration
    - Global factors significant across specifications
    - Domestic demographics remain significant after controlling for fiscal policy
        - ★ Among other domestic variables, pension spending emerges as most robust driver
    - Fiscal policy accounts for recent rise in real interest rates

Related Literature

- **Quantitative models of demographics and real interest rates**
  - Krueger and Ludwig (2006), Ikeda and Saito (2014), Kara and Von Thadden (2016), Carvalho, Ferrero and Nechio (2016), Eggertsson, Merhotra and Robbins (2017), Sudo and Takizuka (2018), Bielecki, Brzoza-Brzezina and Kolasa (2020), Gagnon, Johansen and Lopez-Salido (2021), Lisack, Sajedi, and Thwaites (2021), Auclert, Malmberg, Martenet and Rognlie (2021), Kopecky and Taylor (2022), Sposi (2022),...
- **Empirical analysis of real interest rates dynamics with focus on demographics**
  - Rachel and Smith (2015), Favero, Gozluklu and Yang (2016), Hamilton, Harris, Hatzius and West (2016), Yi and Zhang (2016), Fiorentini, Galesi, Perez-Quirós and Sentana (2018), Aksoy, Basso, Smith and Grasl (2019), Lunsford and West (2019), Borio, Disyatat, Juselius and Rungcharoenkitkul (2021), Davis, Fuenzalida, Huetsch, Mills and Taylor (2024),...
- **Other determinants of low/declining real interest rates**
  - Caballero, Farhi and Gourinchas (2008), Gomme, Ravikumar and Rupert (2015), Sajedi and Thwaites (2016), Caballero and Farhi (2017), Del Negro, Giannone, Giannoni and Tambalotti (2017, 2018), Holston, Laubach and Williams (2017), Farhi and Gorio (2018), Rachel and Summers (2019), Eggertsson, Robbins and Wold (2021), Ferreira and Shousha (2021), Reis (2022), Schmitt-Grohé and Uribe (2022), Obstfeld (2024), ...

Outline

- Introduction
- **Open-economy life-cycle model**
- Panel ECM

Model Overview

- Open-economy life-cycle model with imperfect capital mobility
  - Demographic transition as in Gertler (1999)
  - Time-varying demographic variables heterogeneous across countries (Ferrero, 2010)
  - Portfolio-holding costs hamper perfect international capital mobility (Chang, Liu and Spiegel, 2015)
- Continuum of workers (w) and retirees (r) in each country $m \in \{1, ..., \mathcal{M}\}$
  - Face idiosyncratic risk of retirement (for workers) and death (for retirees)
  - Consume one good and can save through capital, government bonds or claims on foreign assets
- Standard supply side (labor-augmenting productivity)
- Government funds spending and transfers with lump-sum taxes and debt

Demographics

- Life-cycle structure in country m
  - Each period $(1-\omega_{mt}+n_{mt})N^{w}_{mt-1}$ new individuals are born workers
  - Workers remain in labor force with probability ω_{mt}, retire otherwise
  - Retirees survive with probability γ_{mt}

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$$N^w_{mt} = (1+n_{mt})N^w_{mt-1}$$

- Old dependency ratio

$$\psi_{mt} \equiv \frac{N^r_{mt}}{N^w_{mt}} = \frac{(1-\omega_{mt})+\gamma_{mt}\psi_{mt-1}}{1+n_{mt}}$$

Retirees' Problem

- Retiree born in period j and retired in period k solves

$$V_{mt}^{rjk} = \max_{C_{mt}^{rjk}, \{A_{m\ell t}^{rjk}\}_{\ell=1}^{\mathcal{M}}} \left[\left(C_{mt}^{rjk} \right)^{\frac{\sigma-1}{\sigma}} + \beta_m \gamma_{mt+1} \left(V_{mt+1}^{rjk} \right)^{\frac{\sigma-1}{\sigma}} \right]^{\frac{\sigma}{\sigma-1}}$$

subject to

$$C_{mt}^{rjk} + \left[1 + \sum_{\ell \neq m}^{\mathcal{M}} \frac{\Lambda_{m\ell t}}{2} \left(\eta_{m\ell t}^{rjk} \right)^2 \right] \sum_{\ell=1}^{\mathcal{M}} A_{m\ell t}^{rjk} = \frac{1}{\gamma_{mt}} \sum_{\ell=1}^{\mathcal{M}} R_{\ell t-1} A_{m\ell t-1}^{rjk} + E_{mt}^{rjk}$$

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  - $\eta_{m\ell t}^{rjk} \equiv A_{m\ell t}^{rjk} / \left(\sum_{p=1}^{\mathcal{M}} A_{mpt}^{rjk} \right) \rightarrow$ Portfolio share of country m vis-à-vis country ℓ

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- Retirees discount future taking into account probability of surviving
  - Turn their wealth to competitive domestic portfolio managers that pool death risk (Yaari, 1965; Blanchard, 1986)

Workers' Problem

- Worker born in period j solves

$$V_{mt}^{wj} = \max_{C_{mt}^{wj}, \{A_{m\ell t}^{wj}\}_{\ell=1}^{\mathcal{M}}} \left\{ \left(C_{mt}^{wj}\right)^{\frac{\sigma-1}{\sigma}} + \beta_m \left[\omega_{mt+1} V_{mt+1}^{wj} + (1-\omega_{mt+1}) V_{mt+1}^{rjt+1}\right]^{\frac{\sigma-1}{\sigma}} \right\}^{\frac{\sigma}{\sigma-1}}$$

subject to

$$C_{mt}^{wj} + \left[1 + \sum_{\ell \neq m}^{\mathcal{M}} \frac{\Lambda_{m\ell t}}{2} \left(\eta_{m\ell t}^{wj}\right)^2\right] \sum_{\ell=1}^{\mathcal{M}} A_{m\ell t}^{wj} = \sum_{\ell=1}^{\mathcal{M}} R_{\ell t-1} A_{m\ell t-1}^{wj} + W_{mt}^{w} - T_{mt}^{w}$$

  - No initial assets
  - Risk-neutral with respect to labor income risk
  - Uninsurable retirement risk

Portfolio Shares and Wealth Distribution

- **Retirees' portfolio share in country $p \neq m$ independent of age and time since retirement**

$$\left[1 + \sum_{\ell \neq m}^{\mathcal{M}} \frac{\Lambda_{m\ell t}}{2} \left(\eta_{m\ell t}^{rjk}\right)^2\right] \left(R_{pt} - R_{mt}\right) = \Lambda_{mpt}\, \eta_{mpt}^{rjk}\, R_{mt} \;\Rightarrow\; \eta_{mpt}^{rjk} = \eta_{mpt}^{r}$$

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- **Same condition holds for workers** $(\eta_{mpt}^{wj} = \eta_{mpt}^{w}) \;\Rightarrow\; \eta_{mpt}^{r} = \eta_{mpt}^{w}$

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  - Portfolio costs prevent full return equalization across countries

- Same condition holds for workers $(\eta^{wj}_{mpt} = \eta^{w}_{mpt}) \;\Rightarrow\; \eta^{r}_{mpt} = \eta^{w}_{mpt}$

- **Country-m retirees' asset share vis-à-vis country p equal to their overall wealth share**

$$\lambda_{mpt} \equiv \frac{A^r_{mpt}}{A^r_{mpt} + A^w_{mpt}} = \frac{A^r_{mt}}{A^r_{mt} + A^w_{mt}} = \lambda_{mt}$$

  - Evolution of wealth easy to track

details

Aggregate Consumption

- Marginal propensity to consume independent of individual characteristics
  - Retirees

$$\left(\zeta^r_{mt}\right)^{-1} = 1 + \gamma_{mt+1}\beta^{\sigma}_{m}\tilde{R}^{\sigma-1}_{mt}\left(\zeta^r_{mt+1}\right)^{-1}$$

  - Workers

$$\left(\zeta^w_{mt}\right)^{-1} = 1 + \beta^{\sigma}_{m}\left(\Omega_{mt+1}\tilde{R}_{mt}\right)^{\sigma-1}\left(\zeta^w_{mt+1}\right)^{-1}$$

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$$\left(\xi^w_{mt}\right)^{-1} = 1 + \beta^\sigma_m \left(\Omega_{mt+1}\tilde{R}_{mt}\right)^{\sigma-1}\left(\xi^w_{mt+1}\right)^{-1}$$

- Easy to aggregate consumption within each group
  - Retirees

$$C^r_{mt} = \xi^r_{mt}\left(\frac{1}{\gamma_{mt}}\sum_{\ell=1}^{\mathcal{M}} R_{\ell t-1}A^r_{m\ell t-1} + \underbrace{S^k_{mt}}_{\text{PDV of pension benefits to } r}\right)$$

  - Workers

$$C^w_{mt} = \xi^w_{mt}\left(\sum_{\ell=1}^{\mathcal{M}} R_{\ell t-1}A^w_{m\ell t-1} + \underbrace{H^w_{mt}}_{\text{PDV of human wealth}} + \underbrace{Z^w_{mt}}_{\text{PDV of pension benefits to } w}\right)$$

details

Production

- Perfectly competitive **firms** produce homogeneous consumption good
  - Labor-augmenting Cobb-Douglas technology

$$Y_{mt} = (X_{mt} N_{mt}^{w})^{\alpha} K_{mt-1}^{1-\alpha} \qquad \text{where} \qquad X_{mt} = (1 + x_{mt}) X_{mt-1}$$

  - Law of motion of capital

$$K_{mt} = (1 - \delta) K_{mt-1} + I_{mt}$$

Production and Government

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- **Government** budget constraint

$$B_{mt} = R_{mt-1} B_{mt-1} + G_{mt} + E_{mt} - T_{mt} - Y_{mt}$$

  - Assume spending, debt, and pensions are exogenous shares of GDP

$$G_{mt} = g_{mt} Y_{mt} \qquad B_{mt} = b_{mt} Y_{mt} \qquad E_{mt} = e_{mt} Y_{mt}$$

Balance of Payments

- Country-m assets held by residents

$$A_{mmt} = K_{mt} + B_{mt} - \sum_{\ell \neq m} A_{\ell mt}$$

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$$A_{mmt} = K_{mt} + B_{mt} - \sum_{\ell \neq m} A_{\ell mt}$$

- Country-m **net foreign assets** F_{mt} evolve according to

$$\sum_{\ell \neq m} (A_{m\ell t} - A_{\ell mt}) \equiv F_{mt} = F_{mt-1} + \sum_{\ell \neq m} (R_{\ell t-1} - 1) A_{m\ell t-1} - (R_{mt-1} - 1) \sum_{\ell \neq m} A_{\ell mt-1}$$

$$+ (Y_{mt} - C_{mt} - G_{mt} - I_{mt}) - \sum_{\ell \neq m} \frac{\Lambda_{m\ell t}}{2} (\eta_{m\ell t})^2 A_{m\ell t} + \sum_{\ell \neq m} \frac{\Lambda_{\ell mt}}{2} (\eta_{\ell mt})^2 A_{\ell mt}$$

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$$+ (Y_{mt} - C_{mt} - G_{mt} - I_{mt}) - \sum_{\ell \neq m} \frac{\Lambda_{m\ell t}}{2} (\eta_{m\ell t})^2 A_{m\ell t} + \sum_{\ell \neq m} \frac{\Lambda_{\ell mt}}{2} (\eta_{\ell mt})^2 A_{\ell mt}$$

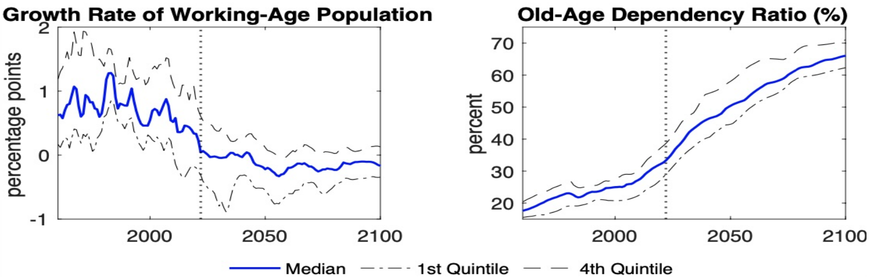
- **Global asset market clearing**

$$\sum_{\ell} F_{\ell t} = 0$$

Initial Steady State

- **Three countries** with different demographic profiles

	"Young" ($\mathcal{Y}$)	**"Old" ($\mathcal{O}$)**	**ROW ($\mathcal{W}$)**
Relative size ($N^w_{m0} / N^w_{\mathcal{W}0}$)	0.006	0.006	0.988
Growth rate of labor force (n_{m0})	1.38	0.56	1.00
Dependency ratio (ψ_{m0})	20.48	25.08	22.34



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- Additionally set country-specific β and Λ_{1990} to match distribution of R_{1990} and F_{1990}

	"Young" ($\mathcal{Y}$)	"Old" ($\mathcal{O}$)	ROW ($\mathcal{W}$)
R_{m1990}	6.39	3.28	4.94
F_{m1990}	-36.77	15.73	0

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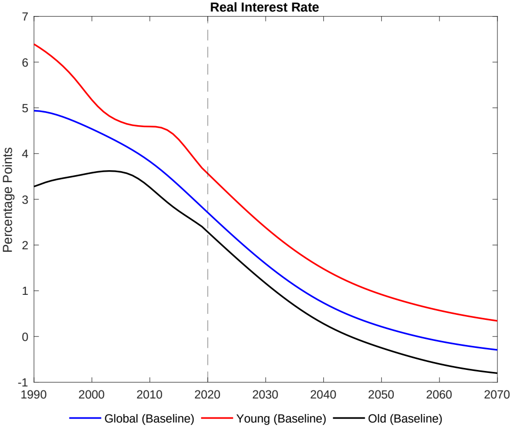
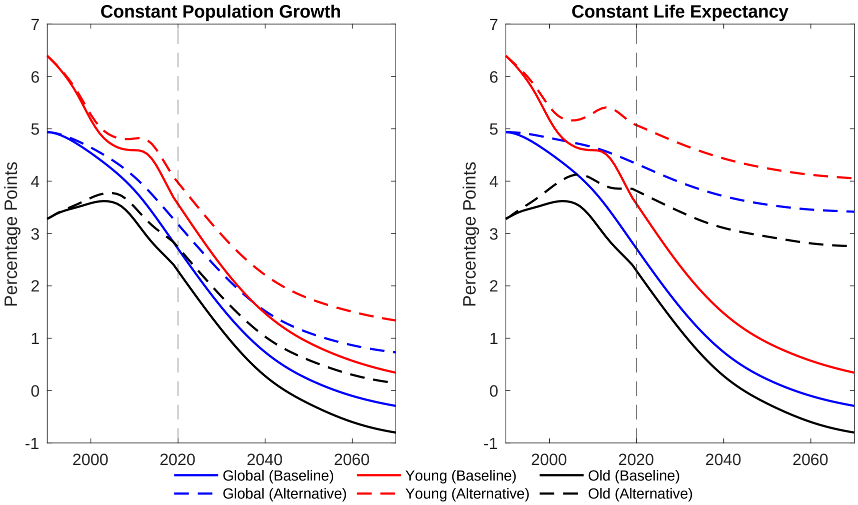
- Additionally set country-specific β and Λ_{1990} to match distribution of R_{1990} and F_{1990}
- All other parameters common across countries (Carvalho, Ferrero and Nechio, 2016) details
  - Period is one year
  - Workers born at age 20, retire on average at 65

Transition

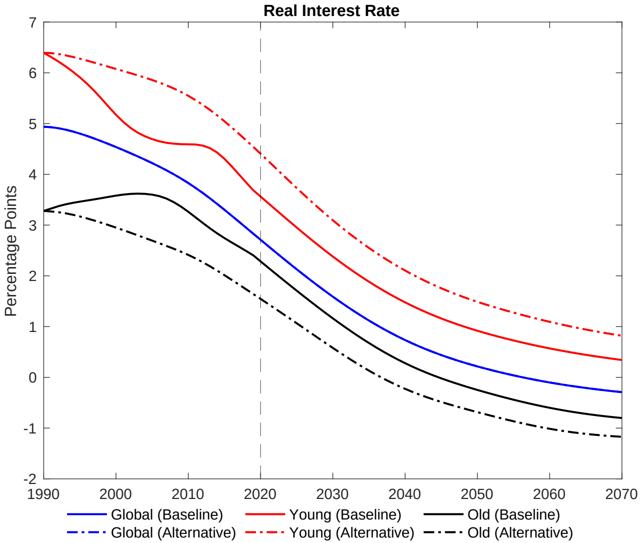
- Feed model with data and projections for **demographics** from 1990 to 2070 (UN WPD 2019)
  - Back out **portfolio costs** that match HP-filtered NFA positions (Lane and Milesi-Ferretti, 2017) details



Demographics Counterfactuals



Financial Integration Counterfactual



Other Factors

- Focus on demographics (more details) but model also features other factors relevant for real rates
- Comparative static exercises
  - Change one factor at a time and compute difference with baseline under same transition

$\Delta R^{\mathcal{O}}$ (in basis points)

Factor	Baseline	Alternative	1990	2020
TFP (x)	0.5%	0.6%	17	6
Debt / GDP (b)	60%	70%	15	5
Government spending / GDP (g)	25%	26%	20	7
Pensions / GDP (e)	7.5%	8.5%	57	18
Retirement age (ω)	65	66	61	15

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- **Panel ECM**

Empirical Approach and Data

- Perform empirical analysis informed by model predictions
  - **Regress real interest rates on demographic variables controlling for financial integration**
  - Also control for other factors following existing literature
    - TFP growth, government debt, pension spending, convenience yields, inequality

Empirical Approach and Data

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  - Regress real interest rates on demographic variables controlling for financial integration
  - Also control for other factors following existing literature
    - TFP growth, government debt, pension spending, convenience yields, inequality
- Data at annual frequency (1979–2019) from various sources (World Bank, IMF, OECD, UN)
- Unbalanced panel of 19 OECD countries
  - Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, United Kingdom, and United States

Empirical Specification

- **Error Correction Model (ECM)** to focus on low-frequency movements

$$\Delta r_{m,t} = \alpha_m + \gamma r_{m,t-1} + \theta \Theta_{m,t-1} r^*_{m,t-1} + \sum_j \psi_j (1 - \Theta_{m,t-1}) D_{m,j,t-1} + \sum_k \Psi_k (1 - \Theta_{m,t-1}) X_{m,k,t-1}$$
$$+ \lambda \Delta(\Theta_{m,t} r^*_{m,t}) + \sum_j \phi_j \Delta[(1 - \Theta_{m,t}) D_{m,j,t}] + \sum_k \chi_k \Delta[(1 - \Theta_{m,t}) X_{m,k,t}] + \epsilon_{m,t},$$

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- $D_{m,j,t} \rightarrow$ Demographic variables
- $X_{m,k,t} \rightarrow$ Other controls

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$$+ \lambda \Delta(\Theta_{m,t} r^*_{m,t}) + \sum_j \phi_j \Delta[(1-\Theta_{m,t}) D_{m,j,t}] + \sum_k \chi_k \Delta[(1-\Theta_{m,t}) X_{m,k,t}] + \epsilon_{m,t},$$

- For each country m, **world real rate summarizes global factors**

$$r^*_{m,t} = \sum_{\ell \neq m} \left(\frac{\Theta_{\ell,t} POP_{\ell,t}}{\sum_{\ell \neq m} \Theta_{\ell,t} POP_{\ell,t}} \right) r_{\ell,t}$$

Empirical Specification

- Error Correction Model (ECM) to focus on low-frequency movements

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- Interact domestic variables with complement of measure of **financial integration**

$$\Theta_{m,t} = \frac{LMF_{m,t}}{100 + LMF_{m,t}}$$

ECM Results

Coefficient on	(1)	(2)	(3)	(4)	(5)	(6)
Global Rate	0.66***	0.64***	0.70***	0.73***	1.01***	1.45***
	(0.17)	(0.17)	(0.13)	(0.14)	(0.20)	(0.20)
Life Expectancy	0.15***	0.14***	-0.24***	-0.13	-0.36***	-0.48*
	(0.04)	(0.04)	(0.06)	(0.19)	(0.09)	(0.28)
Growth Rate of Labor Force	0.24	0.32	6.00***	6.02***	8.99***	11.42***
	(1.02)	(1.01)	(0.97)	(1.08)	(1.47)	(1.46)
TFP Growth		0.52	-0.00	-0.16	-0.06	-0.06
		(0.34)	(0.29)	(0.36)	(0.38)	(0.40)
Government Debt			0.03	0.01	0.07**	0.09**
			(0.02)	(0.03)	(0.03)	(0.04)
Pension Spending			2.27***	1.96***	2.10***	2.47***
			(0.40)	(0.58)	(0.52)	(0.77)
Gini Coefficient				-0.08		-0.07
				(0.22)		(0.32)
Convenience Yield					0.70	1.67
					(1.33)	(1.65)
Lagged Real Rate	-0.31***	-0.31***	-0.46***	-0.50***	-0.54***	-0.69***
	(0.03)	(0.03)	(0.03)	(0.04)	(0.06)	(0.06)
Kao test	R***	R***	R***	R***	R***	R***
R^2	0.24	0.24	0.39	0.36	0.53	0.55
Adjusted R^2	0.21	0.22	0.35	0.31	0.47	0.47
Observations	743	743	507	447	206	169
Clusters	19	19	19	18	7	7

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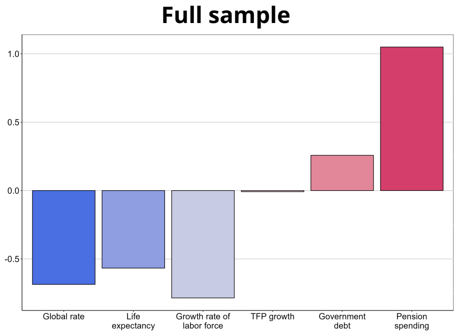
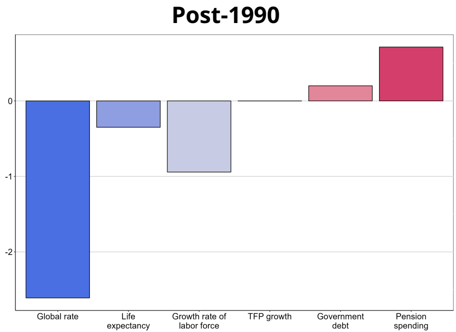
Interpreting the Coefficients

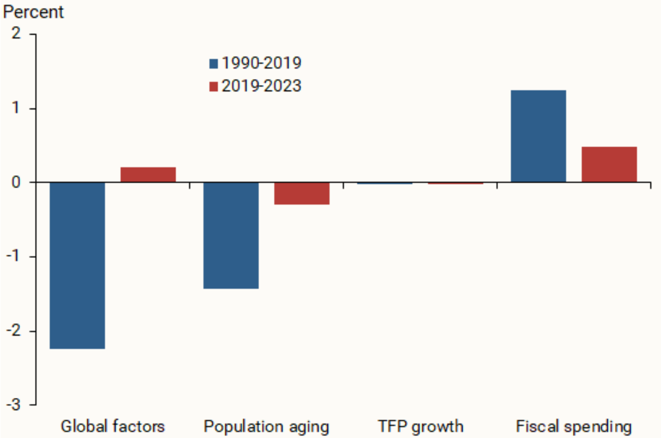
- Contribution of each factor from specification (3) (demographics and fiscal variables)
  1. For each country, multiply each factor's Δ by average degree of openness over sample period
  2. Multiply number obtained in step 1. $\times$ estimated coefficient
  3. Take average across countries





What Explains the Recent Rise in Real Rates?

- Apply same methodology to calculate contribution of each factor for US



Source: Carvalho, Ferrero, Nechio and Mazin (2025)

No Financial Integration

$$\Delta r_{m,t} = \alpha_m + \gamma r_{m,t-1} + \theta r^*_{m,t-1} + \sum_j \psi_j D_{m,j,t-1} + \sum_k \Psi_k X_{m,k,t-1} + \lambda \Delta r^*_{m,t} + \sum_j \phi_j \Delta D_{m,j,t} + \sum_k \chi_k \Delta X_{m,k,t} + \epsilon_{m,t}.$$

Coefficient on	(1)	(2)	(3)	(4)	(5)	(6)
Global Rate	0.30**	0.28**	-0.24	-0.37***	-0.27	-0.23
	(0.13)	(0.13)	(0.15)	(0.13)	(0.21)	(0.17)
Life Expectancy	-0.77***	-0.72***	-1.49***	-1.43***	-0.94***	-1.05***
	(0.14)	(0.14)	(0.16)	(0.16)	(0.31)	(0.31)
Growth Rate of Labor Force	-0.56	-0.39	0.59	0.09	1.61**	1.13*
	(0.36)	(0.36)	(0.41)	(0.35)	(0.74)	(0.62)
TFP Growth		0.32**	0.25*	0.06	0.34	0.14
		(0.14)	(0.15)	(0.14)	(0.21)	(0.18)
Government Debt			0.01*	-0.02**	0.01	-0.02*
			(0.01)	(0.01)	(0.01)	(0.01)
Pension Spending			0.42**	-0.05	0.67**	0.01
			(0.22)	(0.20)	(0.29)	(0.26)
Gini Coefficient				0.07		-0.02
				(0.09)		(0.14)
Convenience Yield					-1.98**	-0.64
					(0.86)	(0.78)
R^2	0.23	0.24	0.30	0.31	0.49	0.53
Adjusted R^2	0.21	0.21	0.25	0.26	0.44	0.46
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  1. Large and persistent decline since 1990
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- **Model**
  - Domestic and global demographic trends can explain about $1/3$ of decline
  - Financial integration accounts for full reduced dispersion

- **Empirics**
  - Roughly equal role of global factors and domestic demographics over full sample
  - Global factors have become more important post-1990
  - Pension spending main factor pushing in opposite direction

Appendix

Portfolio Shares and Evolution of Wealth Distribution

- Same portfolio shares ($\eta^r_{mpt} = \eta^w_{mpt} = \eta_{mpt}$) imply

$$\lambda_{mpt} \equiv \frac{A^r_{mpt}}{A^r_{mpt} + A^w_{mpt}} = \frac{\cancel{\eta_{mpt}} A^r_{mt}}{\cancel{\eta_{mpt}} A^r_{mt} + \cancel{\eta_{mpt}} A^w_{mt}} = \frac{A^r_{mt}}{A^r_{mt} + A^w_{mt}} = \lambda_{mt}$$

- Combining r and w budget constraints, financial wealth evolves according to

$$\left[1 + \sum_{\ell=1}^{\mathcal{M}} \frac{\Lambda_{m\ell}}{2} \left(\eta_{m\ell t} - \bar{\eta}_{m\ell}\right)^2\right] [\lambda_{mt} - (1 - \omega_{mt+1})] A_{mt}$$
$$= \omega_{mt+1} \left[(1 - \xi^r_{mt})\lambda_{mt-1} A_{mt-1} \sum_{\ell=1}^{\mathcal{M}} R_{\ell t-1} \eta_{m\ell t-1} + E_{mt} - \xi^r_{mt} S_{mt}\right]$$

back

Drivers of Consumption

- Retirees' consumption depends on financial wealth and PDV of pension benefits

$$S^{rjk}_{mt} = E^{rjk}_{mt} + \frac{\gamma_{mt+1} S^{rjk}_{mt+1}}{\tilde{R}_{mt}}$$

where $\tilde{R}_{mt}$ is total adjusted return

$$\tilde{R}_{mt} \equiv \frac{\sum_{\ell=1}^{\mathcal{M}} \eta_{m\ell t} R_{\ell t}}{1 + \sum_{\ell=1}^{\mathcal{M}} \frac{\Lambda_{m\ell t}}{2} (\eta_{m\ell t})^2}$$

- Workers' consumption depends on PDV of net labor income

$$H^{wj}_{mt} = W^{w}_{mt} - T^{w}_{mt} + \frac{\omega_{mt+1} H^{wj}_{mt+1}}{\Omega_{mt+1} \tilde{R}_{mt}}$$

and PDV of pension benefits

$$Z^{wj}_{mt} = \frac{1}{\Omega_{mt+1} \tilde{R}_{mt}} \left[(1 - \omega_{mt+1}) \left(\frac{\xi^{r}_{mt+1}}{\xi^{w}_{mt+1}} \right)^{\frac{1}{1-\sigma}} S^{rjt+1}_{mt+1} + \omega_{mt+1} Z^{wj}_{mt+1} \right]$$

back

Parameters

Country-specific parameters

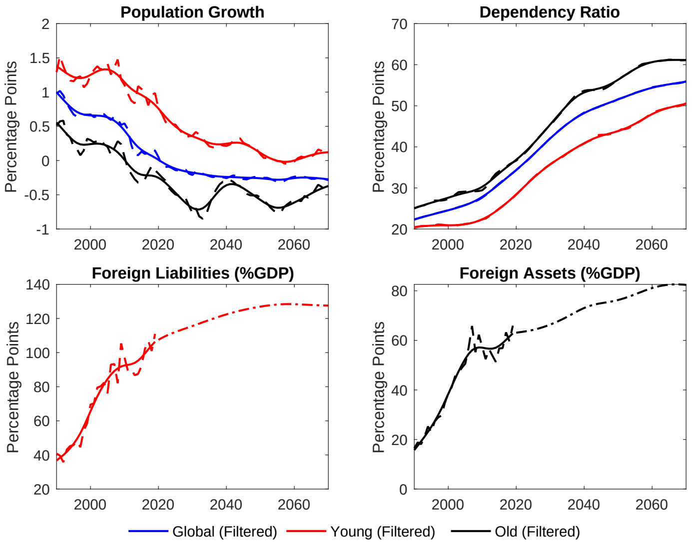
Parameter	$\mathcal{Y}$	$\mathcal{O}$	$\mathcal{W}$
Discount factor (β_m)	0.987	1.013	1.003
Portfolio-holding costs ($\Lambda_{\mathcal{Y}n0}$)	0	300	18.2
Portfolio-holding costs ($\Lambda_{\mathcal{O}n0}$)	300	0	43.4
Portfolio-holding costs ($\Lambda_{\mathcal{W}n0}$)	18.2	43.4	0

Parameters common across countries

Parameter value			Description
ω	=	0.978	Average employment duration
σ	=	0.500	Elasticity of intertemporal substitution
α	=	0.667	Labor share
δ	=	0.100	Depreciation rate
x	=	0.005	Growth rate of productivity
$\bar{\eta}$	=	0	Target net foreign asset position
b	=	0.600	Debt/GDP
g	=	0.250	Government spending/GDP
e	=	0.075	Pensions/GDP

back

Exogenous Processes and Targets



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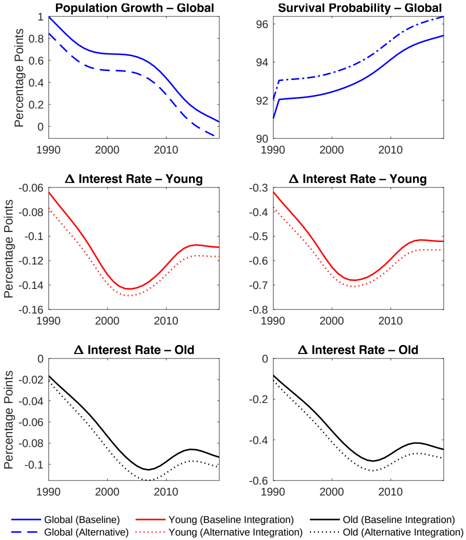
Comparative Statics for Demographic Trends



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