

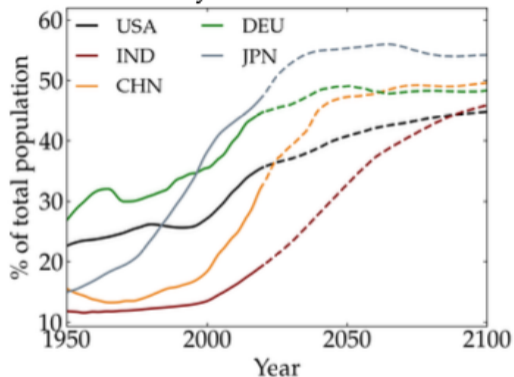
Discussion of  
*“Demographics, Wealth, and Global Imbalances in the  
Twenty-First Century”*  
by  
Adrien Auclert, Hannes Malmberg, Frédéric Martenet, and  
Matthew Rognlie

Christina Patterson  
Chicago Booth

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# Overview

## A. Share of 50+ year-olds



- **Big Question:** General equilibrium effect of aging on wealth and the rate of return
- **Clear and compelling answer:** (very large) compositional effect is the key measure

## This Paper: Compositional Effect of Aging

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- **Key insight 2:** with all counties aging together, in the long run,

$$\underbrace{\Delta \log \left( \frac{W}{Y} \right)}_{\text{Total log change}} \approx \underbrace{\frac{\bar{\epsilon}^s}{\bar{\epsilon}^s + \bar{\epsilon}^d}}_{\text{Behavioral/GE}} \underbrace{\left( \log \left( \frac{\sum_j \pi_{j,t} a_{j,0}}{\sum_j \pi_{j,t} h_{j,0}} \right) - \log \left( \frac{\sum_j \pi_{j,0} a_{j,0}}{\sum_j \pi_{j,0} h_{j,0}} \right) \right)}_{\text{Composition}}$$

## What channels are included in the GE effects in their model?

1. Intertemporal substitution in household consumption
2. Wealth effects from changing  $r$  and  $w$
3. Substitution between capital and labor
4. Quantitative model also includes:
  - ▶ Older generations vary the bequests they leave heirs
  - ▶ Retirement policies change
  - ▶ Government tax and transfer system response

What about potential labor supply effects?

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  - ▶ Mixed empirical evidence for labor market crowding from older workers to younger workers (Gruber and Milligan 2010, Mohnen 2019)

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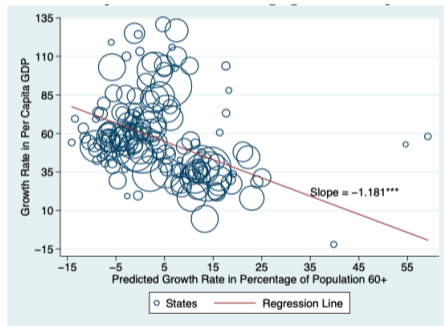
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  - ▶ Start-up rate and business dynamism (Karahan, Pugsley and Sahin (2016), Alon et al (2017))
  - ▶ Endogenous adoption of technology (Acemoglu and Restrepo 2017)

# Empirical evidence that aging decreased labor productivity in the US

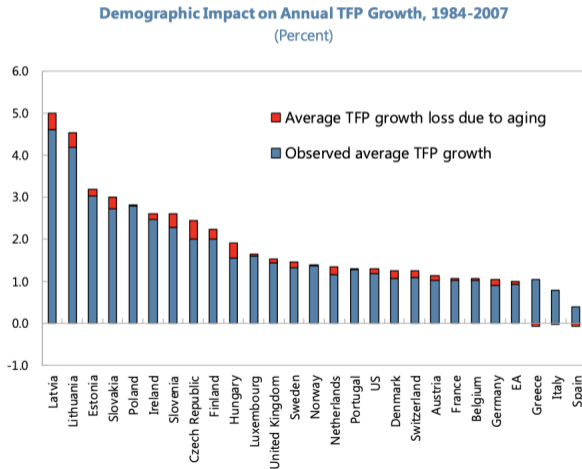
- Maestras, Mullen and Powell (2016): two thirds of reduction in GDP per capital due to slower growth in labor productivity



Notes: Size of bubbles reflects state population size.

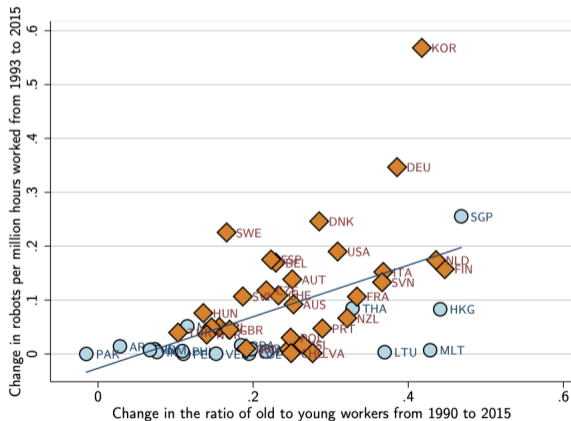
## Empirical evidence that aging decreased TFP internationally

- Aiyar, Ebeke and Shao (2016): workforce aging reduced TFP by 0.1 pts per year on average.



# Cross-country evidence that aging positively correlated with technological growth

- Acemoglu and Restrepo (2017): Countries aging more rapidly adopt more robots



## Which way would these labor-market channels go?

$$r_t = F_K \left( \frac{K_t}{Z_t L_t}, 1 \right) - \delta$$

- Two additional labor market effects are *multiplicative*
- It's possible (likely?) these 2 additional forces strengthen the decline in  $r$ 
  - ▶ Aging lowers  $z$ , labor supply effects minimal
- It's also possible these effects moderate or reverse fall in  $r$ 
  - ▶ Aging encourages automation/innovation
- Could be an interesting next step to see these additional channels incorporated in sufficient statistics

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- Takeaways are transparent, novel and compelling
- Would be curious to see how labor market mechanisms fit into this sufficient statistics approach