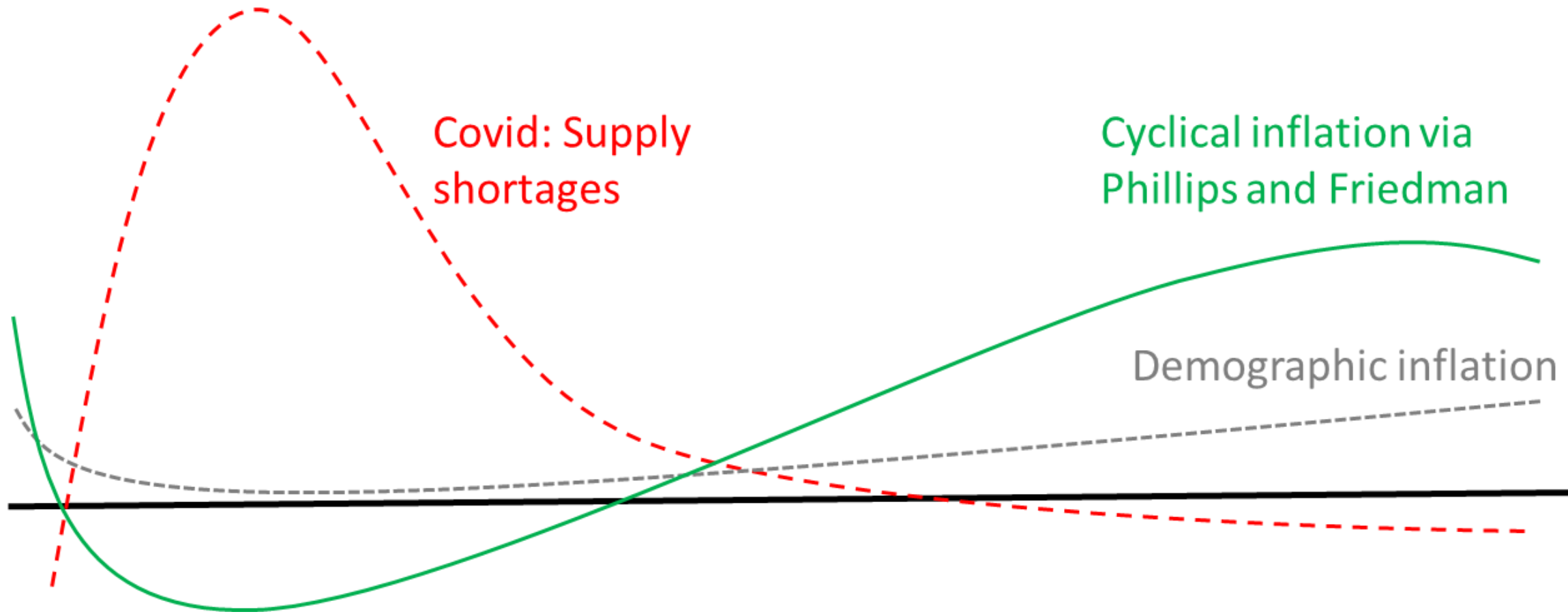


Sep 2021

# The Great Demographic Reversal

### 3 Inflation Cycles

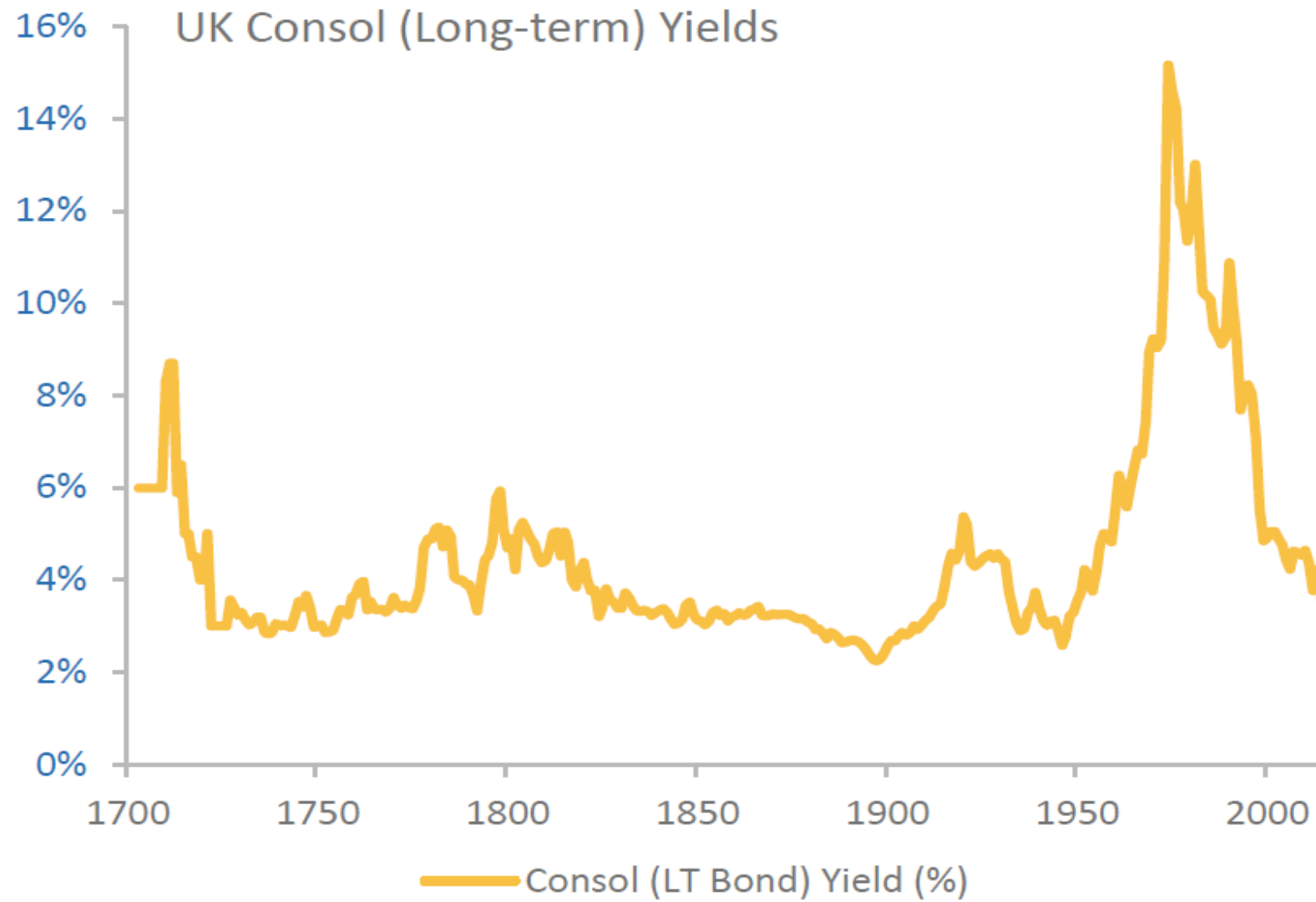
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Structural Inflation:  
Demography (and some reversal of  
globalisation) will raise inflation

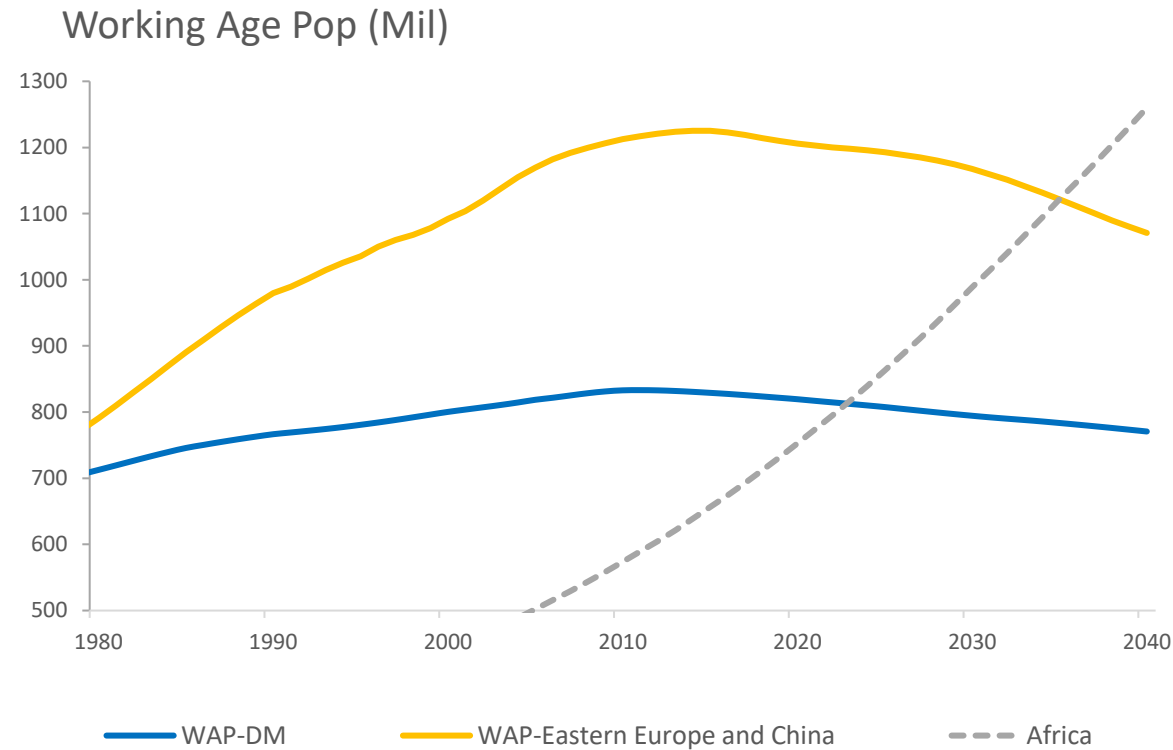
# Echoes of the 1950s

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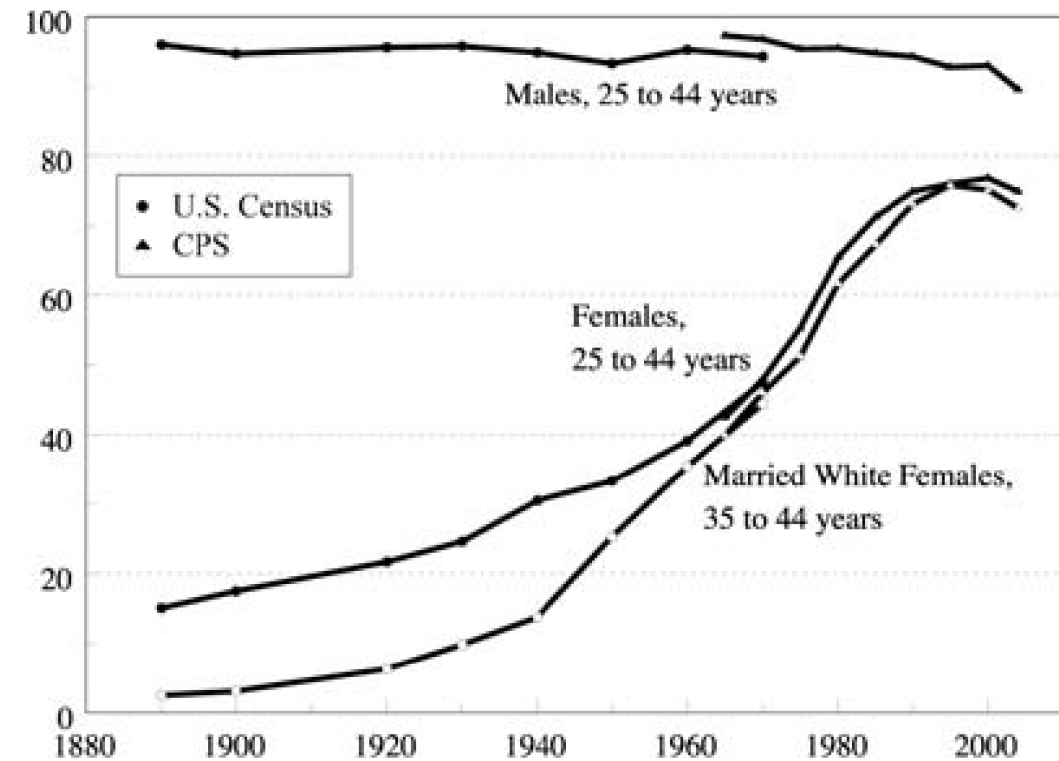


# Two Historic Demographic Transformations

## China's Integration Raised Global Labour Supply for 120%



## A Quiet Revolution: Women's Participation



# Stolper-Samuelson: Intergenerational Friction and Inflation

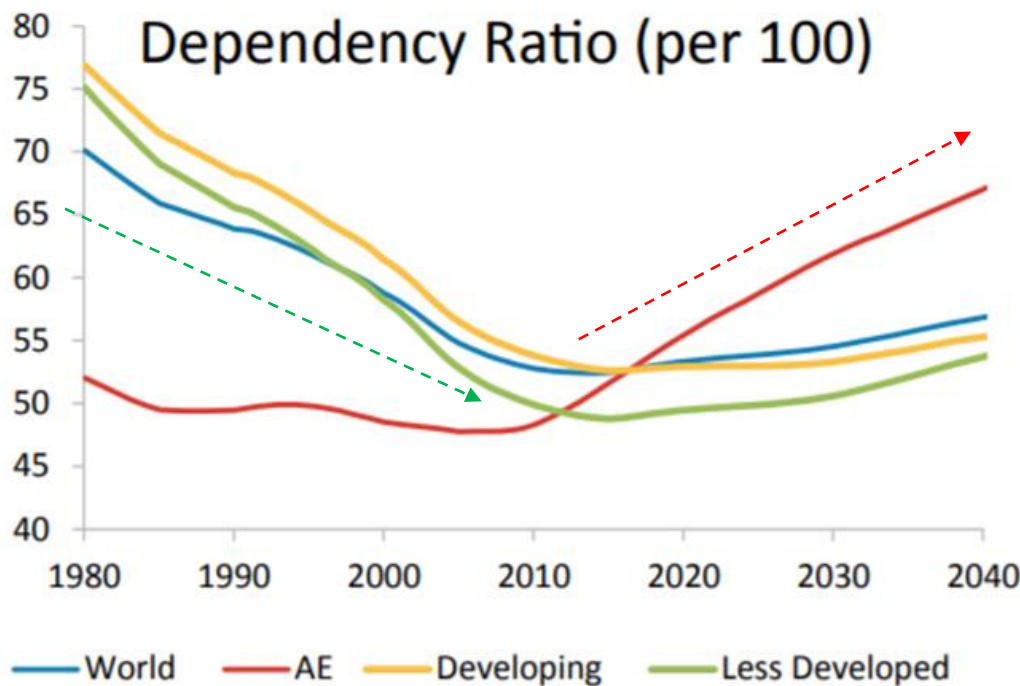
**Dependents** (Young, Old) Consume  
But Don't Produce

↓  
**Dependents**  
Inflationary

**Workers** Consume + Produce + Save  
Wages < Production, Consume < Wages

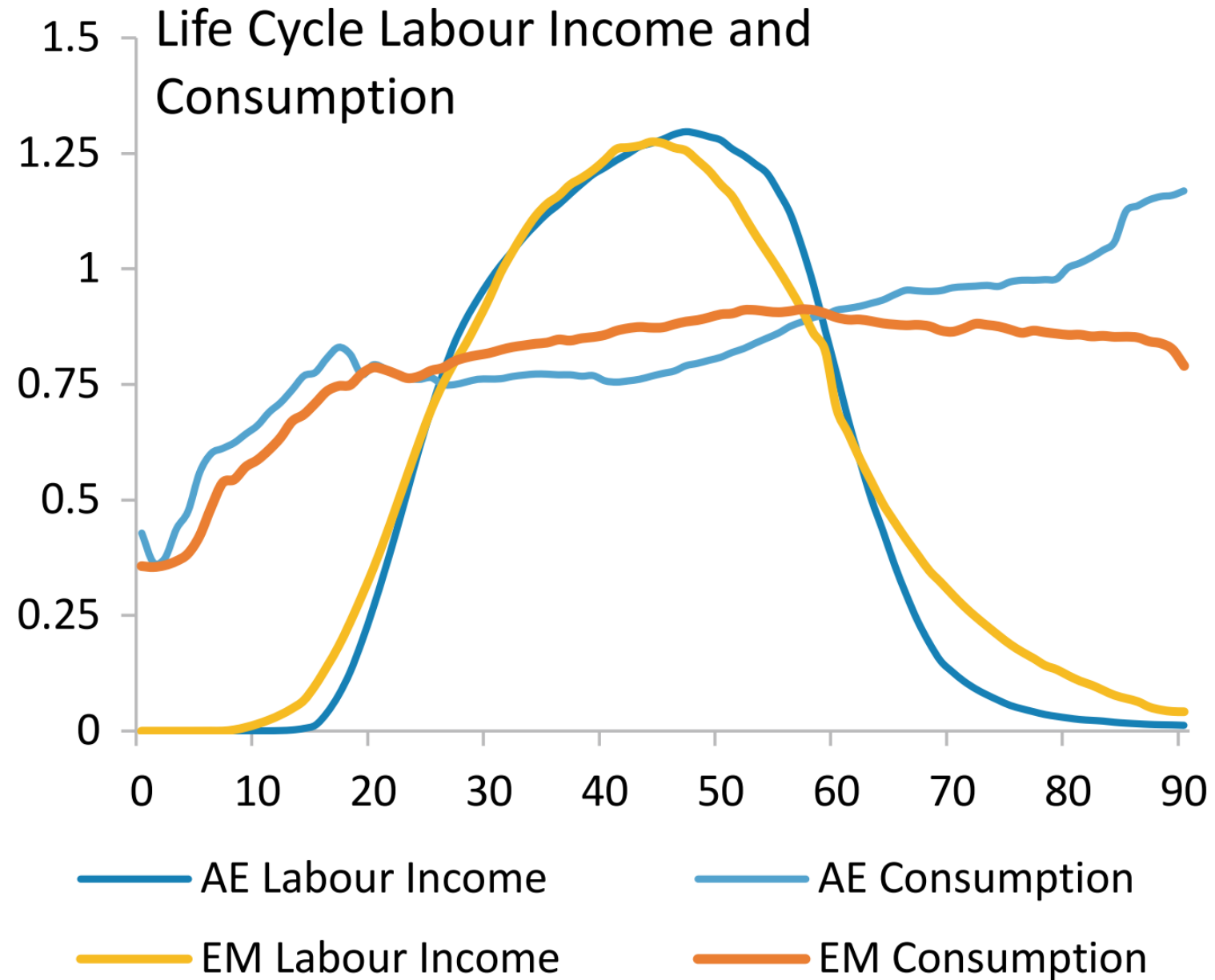
↓  
**Workers**  
Deflationary

More Workers  
Than Dependents  
  
=  
  
Inflation Falls



More Dependents  
Than Workers  
  
=  
  
Inflation Rises

# Political Economy: Consumption of the old *increases*

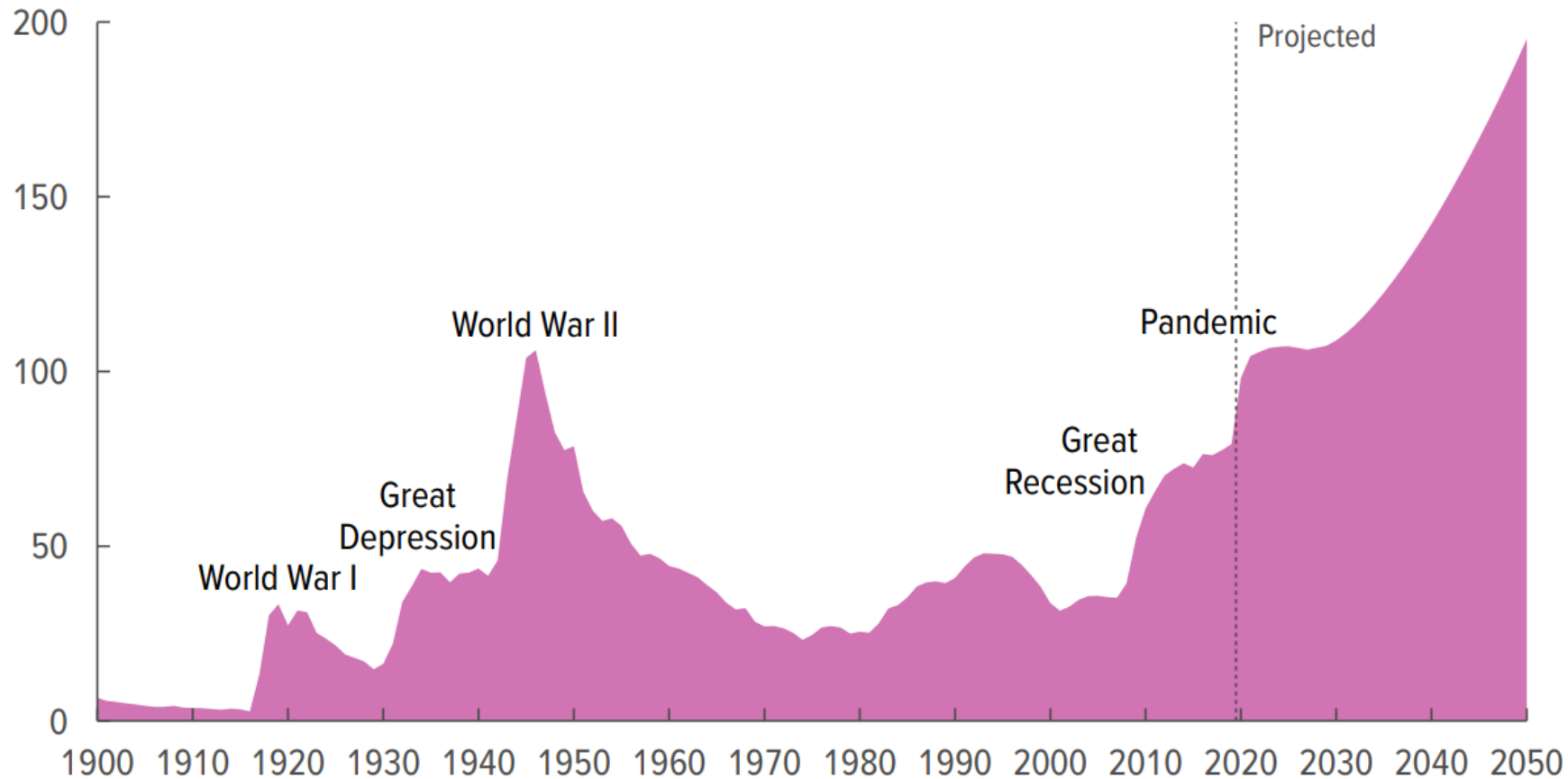


# The Elderly are a Strong Political Force

## Debt and deficits

Federal debt held by the public is projected to equal 195% of GDP in 2050, and the deficit is projected to equal 13% of GDP

Percentage of Gross Domestic Product



**In CBO's projections, federal debt held by the public surpasses its historical high of 106 percent of GDP in 2023 and continues to climb in most years thereafter. In 2050, debt as a percentage of GDP is nearly 2.5 times what it was at the end of last year.**



# The endgame? Inflation and 'Infinite' Debt

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## Dealing with Debt

- Growth – unlikely
- Productivity – yes, but modest – enables persistent wage growth
- Taxation – the 'right' solution, but politically difficult
- Inflation – unattractive, but necessary

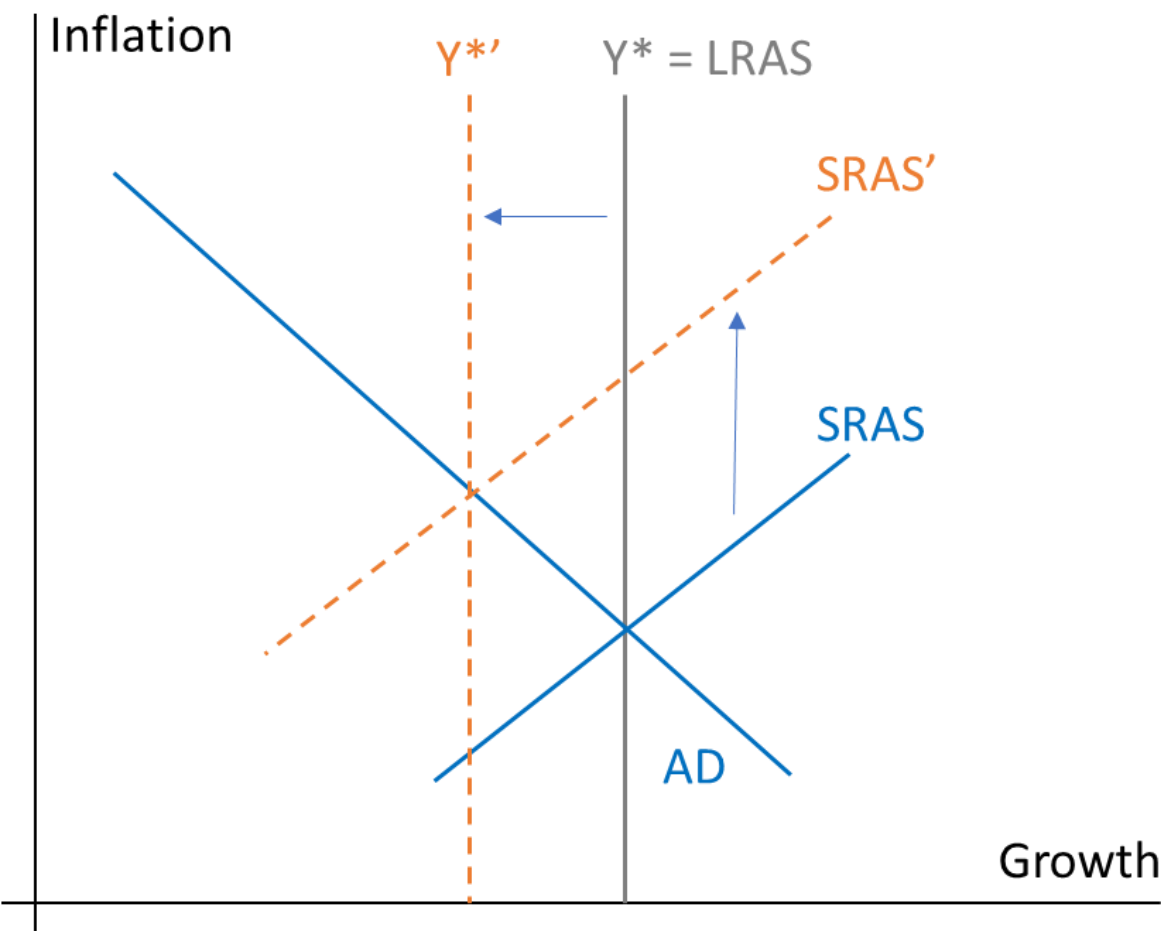
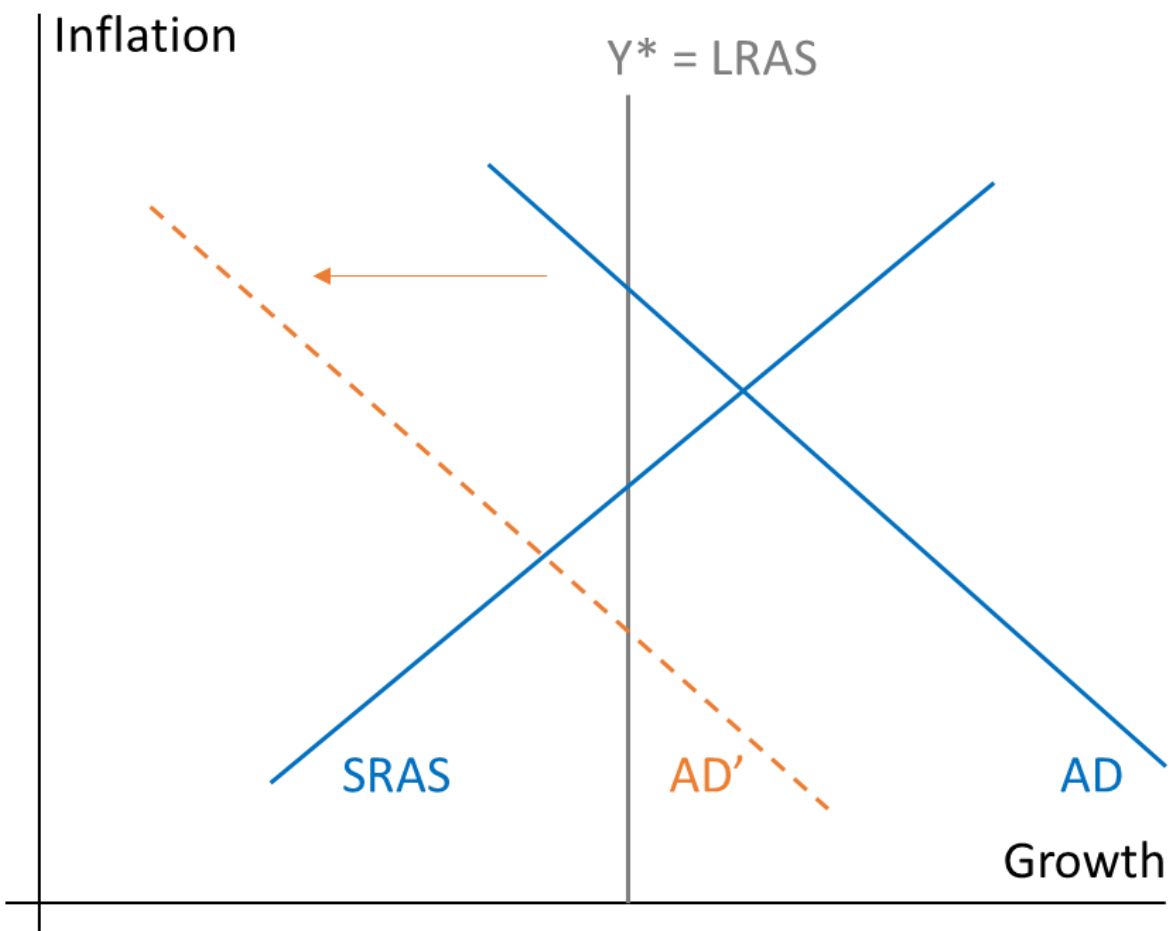
## Won't we need constant inflation surprises to lower real debt burdens?

- Central banks will turn government bonds into variable-coupon consols

# Isn't Demography Deflationary via Slower Growth?

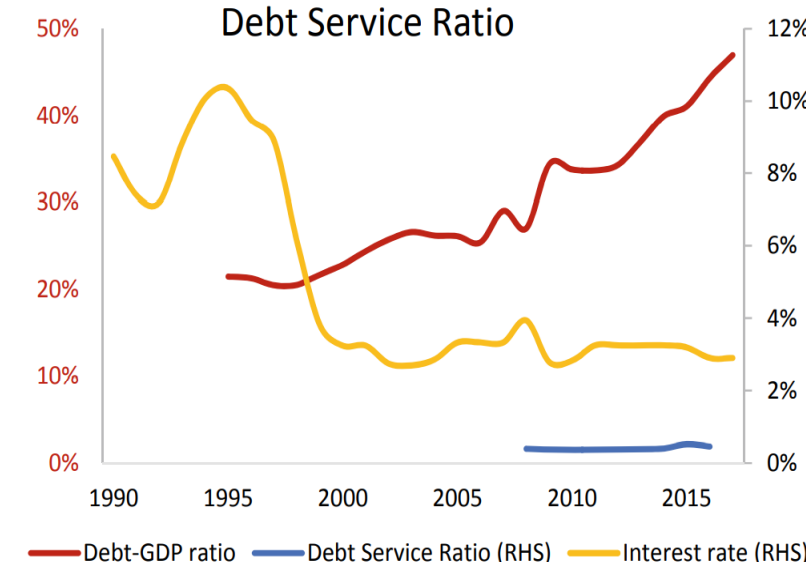
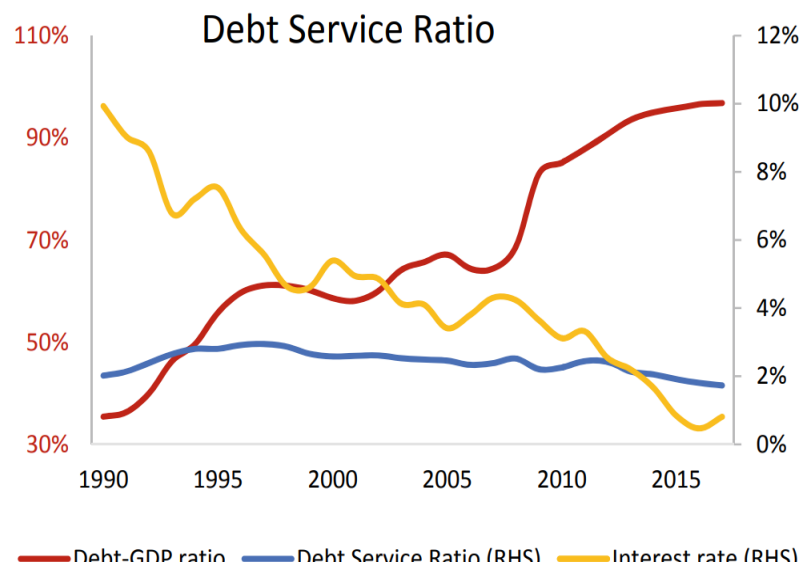
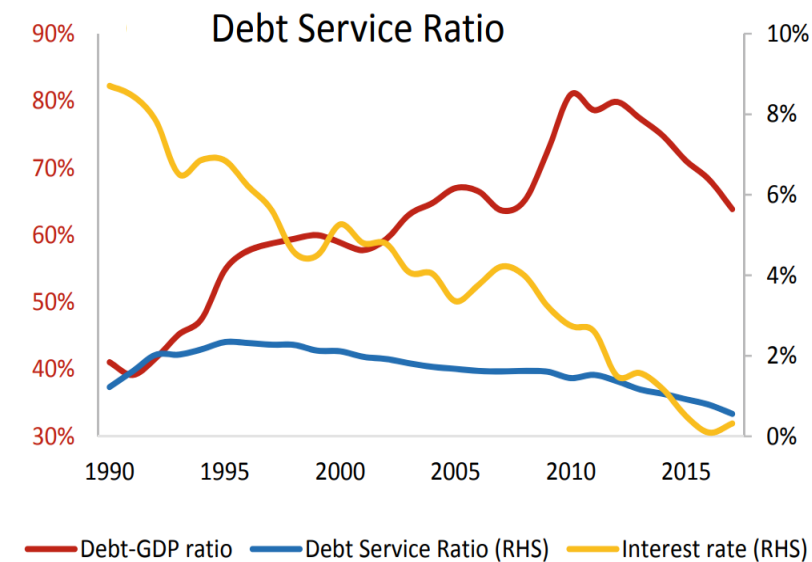
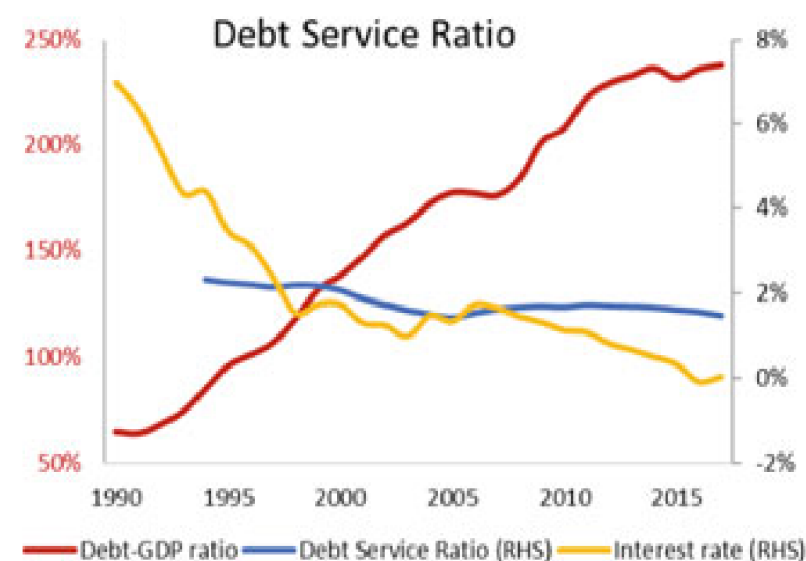
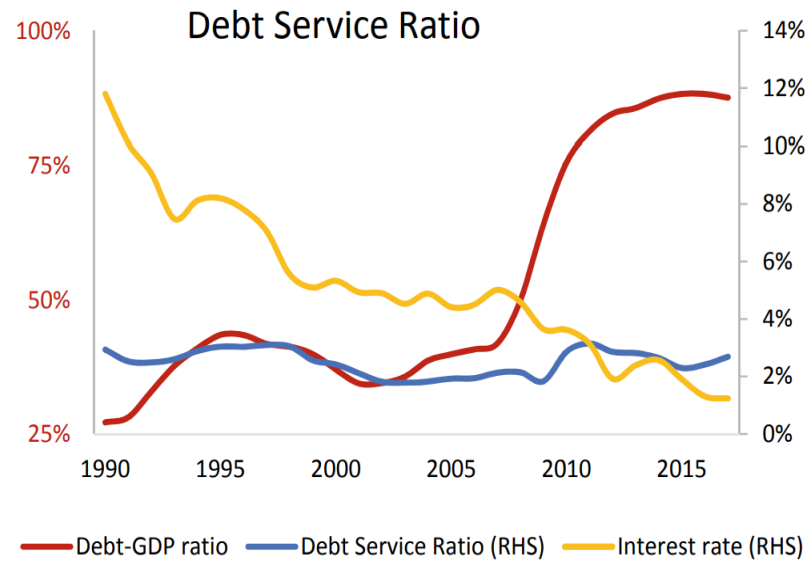
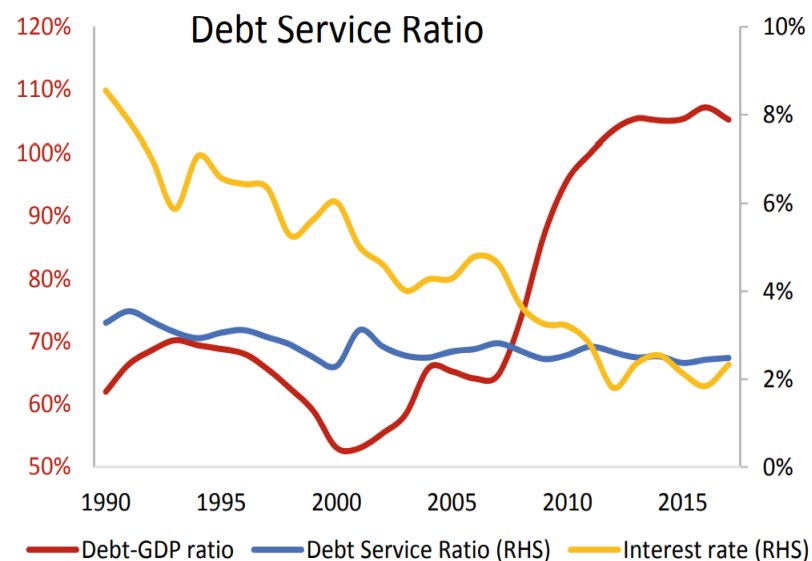
Cyclically, recessions create an output gap, which is deflationary

Structurally, demography will slow potential growth, with almost no implications for the output gap and hence deflation



# Why Didn't it Happen in Japan? A Revisionist History

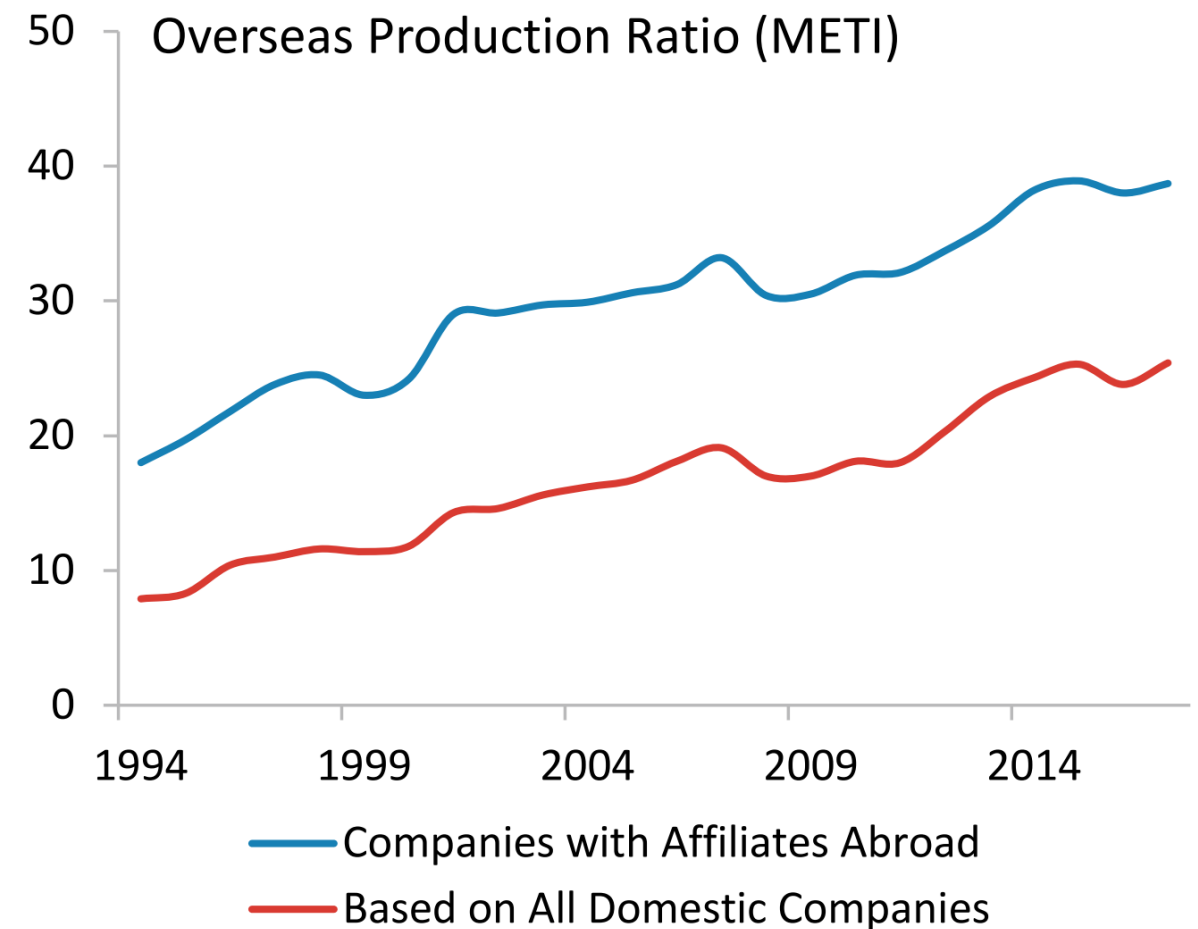
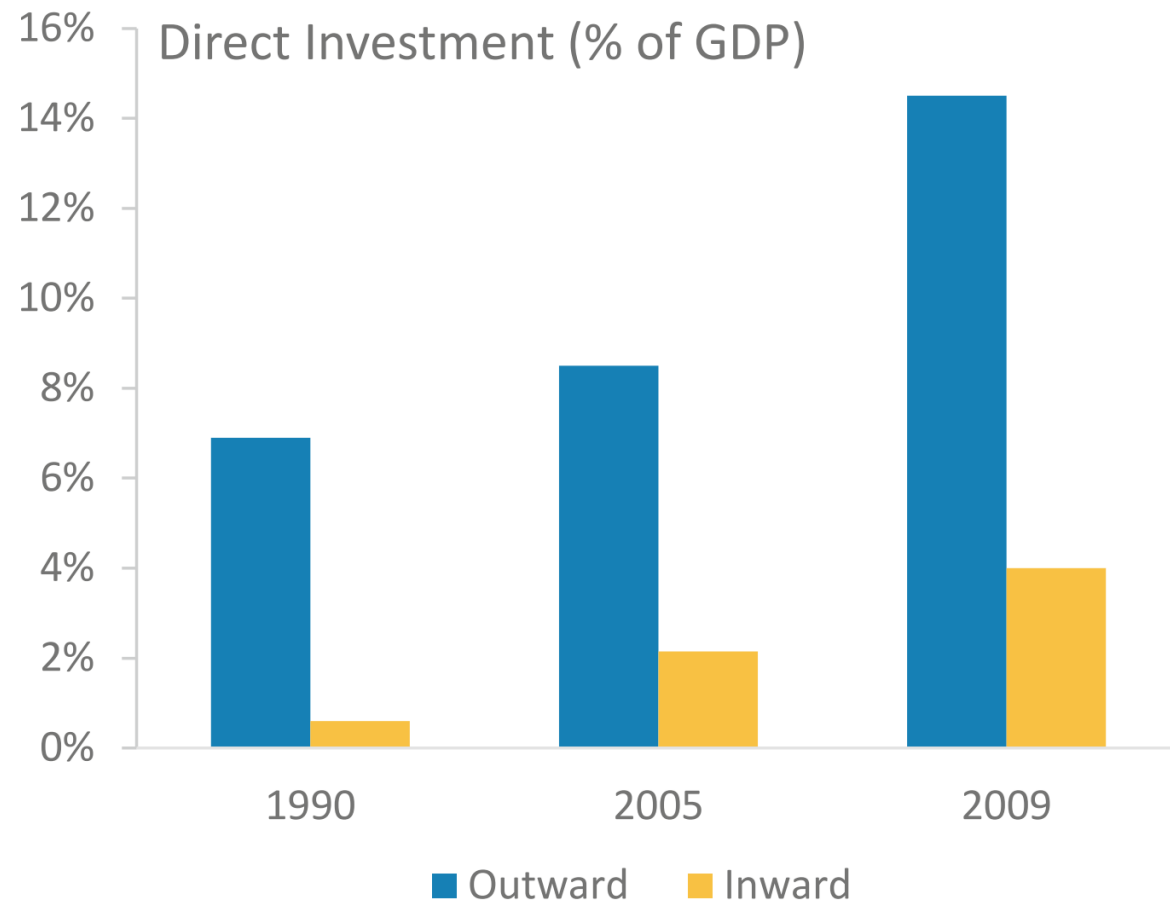
Japan was not unique, nor resistant to global disinflation and the trend of falling interest rates



# Japan: Treated in an Autarky Model – Creates Narrow Framing

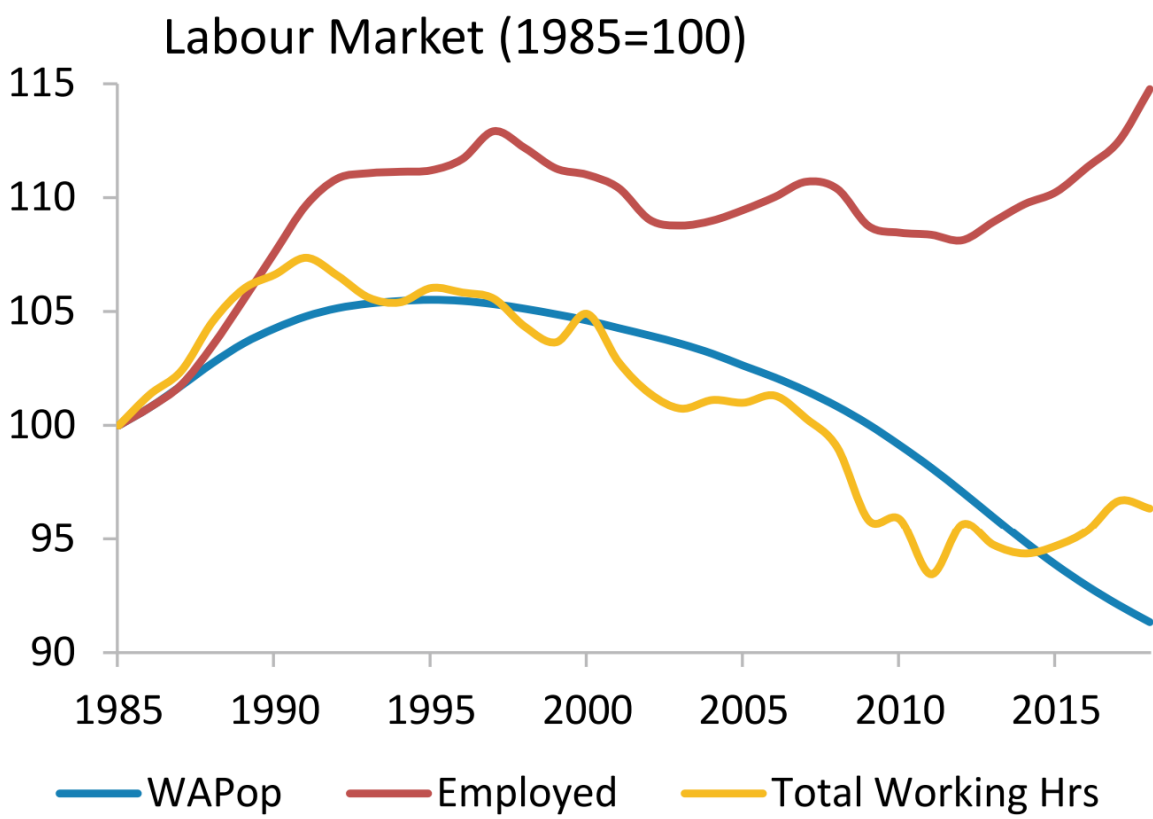
Without the global element, Japan demography forced to explain growth, inflation, rates

**Corporates understood the global labour supply shock and used Outbound-FDI as a ‘Escape Valve’**

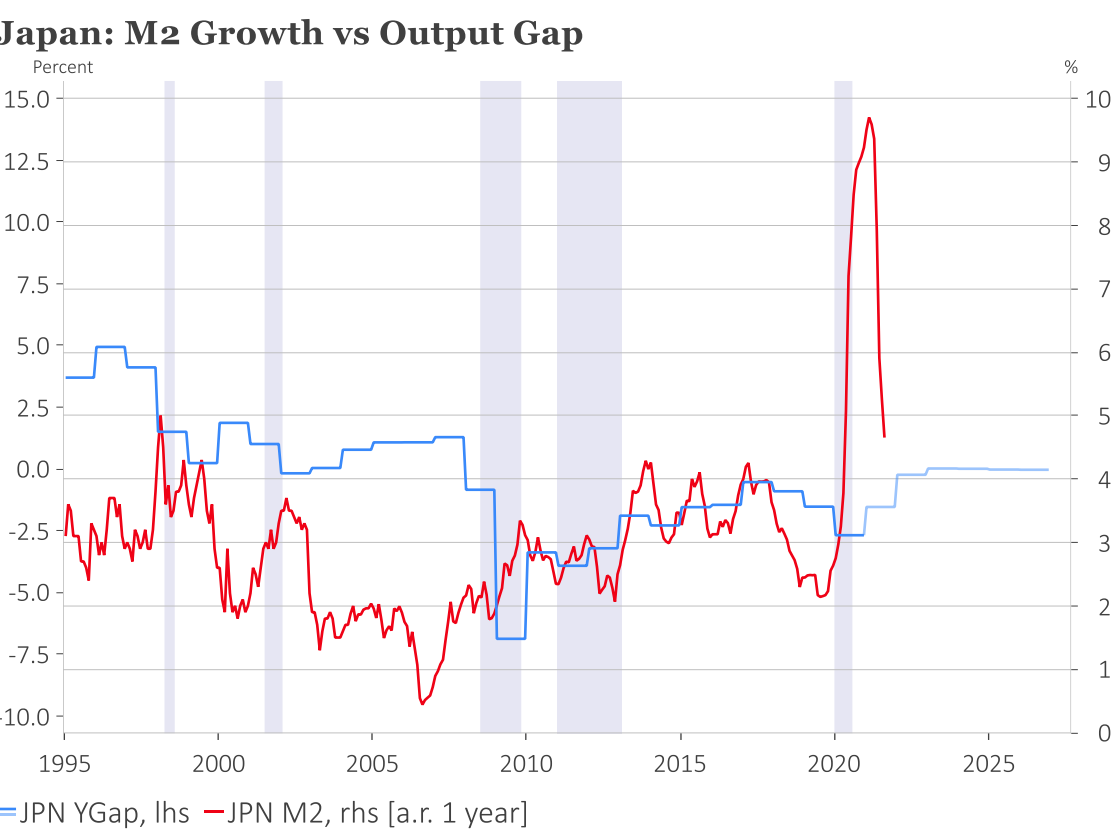


# Japan's Past also Misunderstood

Labour market adjustment did not happen like Western economies via employment, but through hours



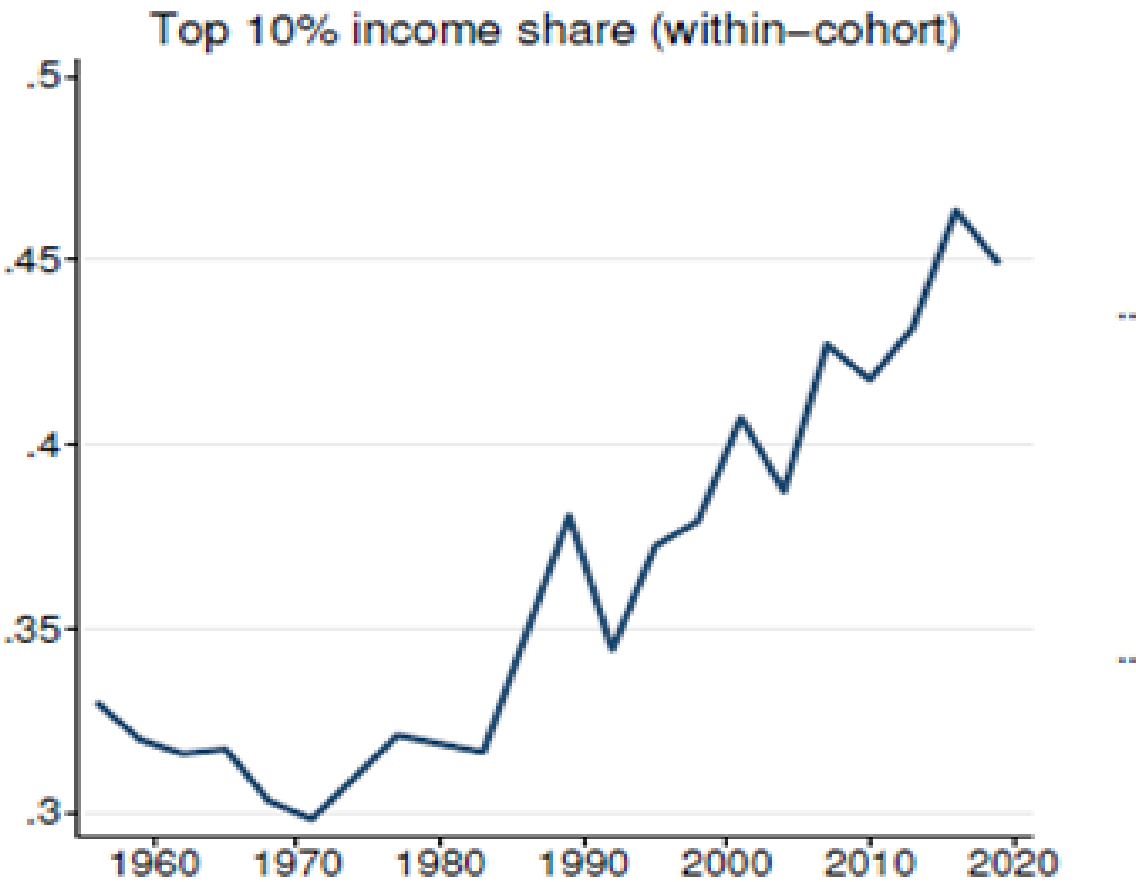
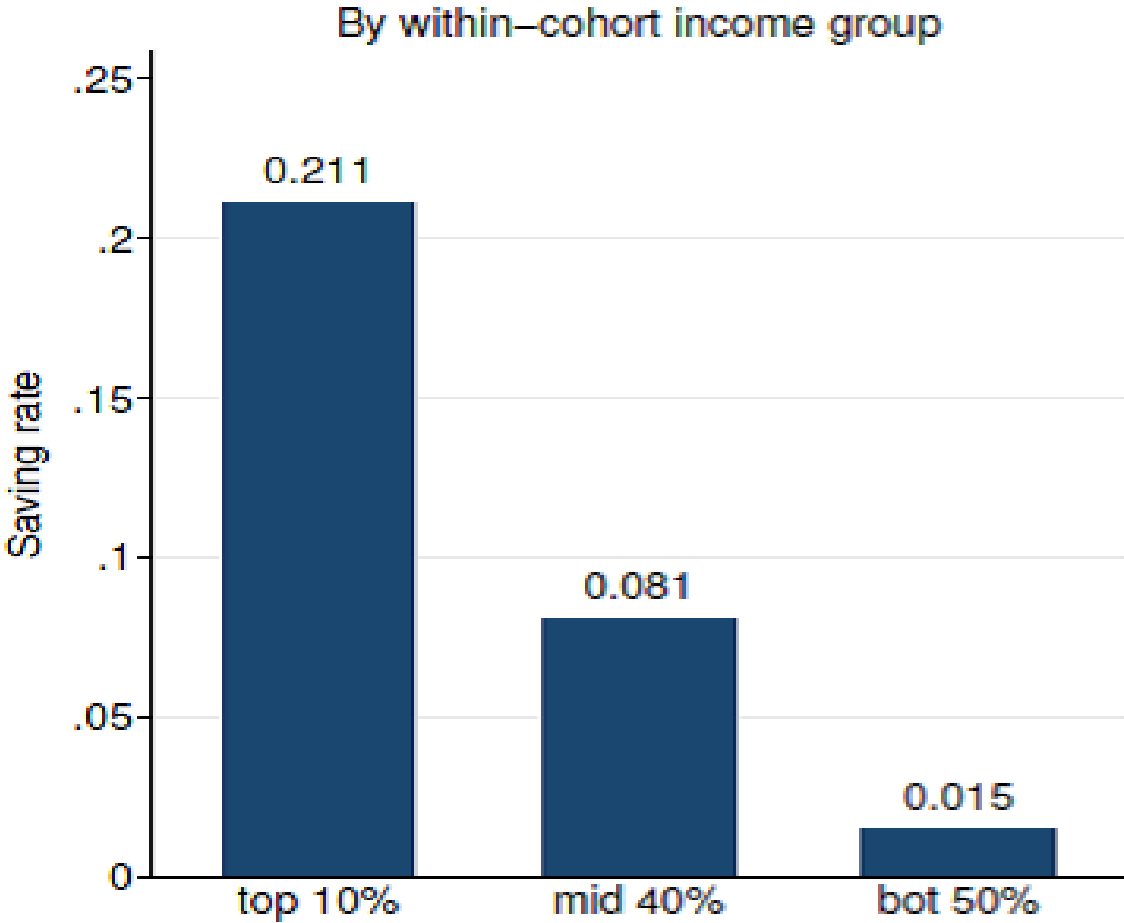
Japan did NOT throw the monetary kitchen sink at deflation



MACROBOND

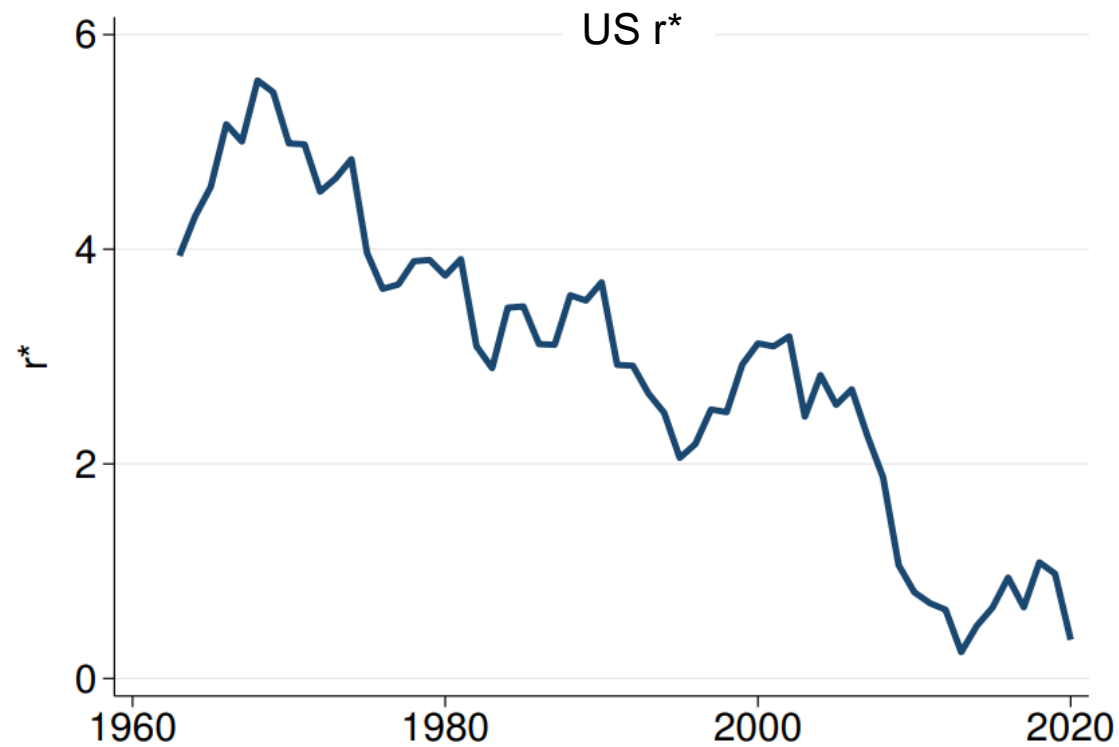
# Can Inequality Lower $r^*$ by More Than Demography Raises it?

Mian, Straub, Sufi: Savings flows of the rich > demographic dissaving = falling  $r^*$



# Should Rising US + Falling Global Inequality Both Lower $r^*$ ?

Laubach-Williams Estimate of  $r^*$  falls sharply in the 2000s



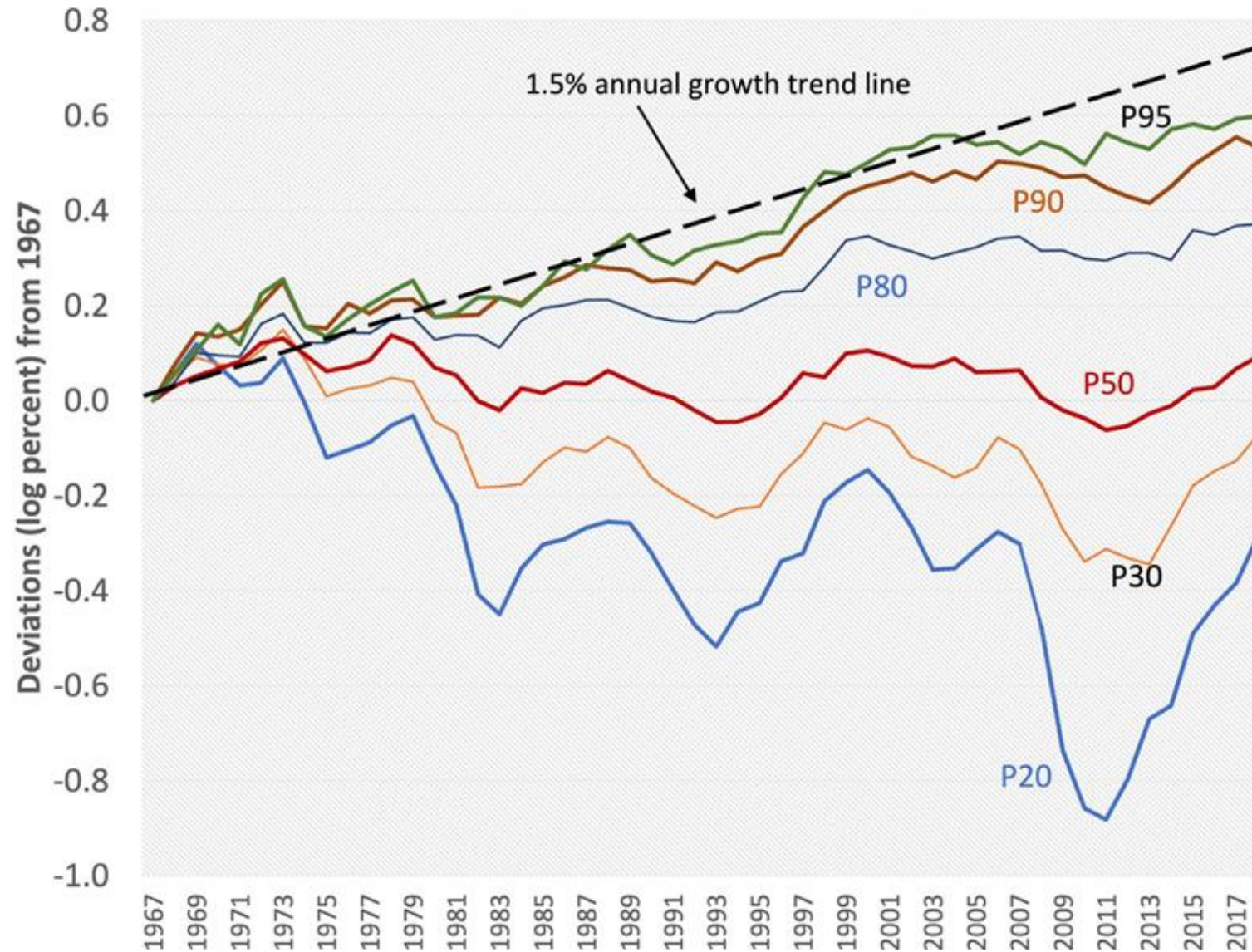
The surprisingly Swift Decline in US Manufacturing Employment





# Have Rising US Inequality...

Guvenen at Jackson Hole 2021: Share of top 1%, 10% has grown because of worse fortunes for the poorer 90%...





## ... and Falling Global Inequality been Driven by Demography?

...which is consistent with lower income cohorts in the US being directly challenged by China's labour force

	USA/China	France/Poland
2000	34.6	3.9
2001	30.6	3.3
2002	27.4	3.5
2003	25.0	4.0
2004	22.9	4.2
2005	20.4	3.8
2006	18.1	3.7
2007	15.2	3.5
2008	12.2	3.0
2009	10.8	3.7
2010	9.7	3.3
2011	8.4	3.3
2012	7.5	3.4
2013	6.7	3.4
2014	6.3	3.3
2015	6.0	3.4
2016	5.9	3.4
2017	5.6	3.2
2018	5.1	2.9

Source National Sources

Cyclical Inflation:  
China put the Phillips curve in a coma,  
the Pandemic will revive it

# The Phillips Curve Model is Reduced Form, Not Structural

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What is the inflation forming process?

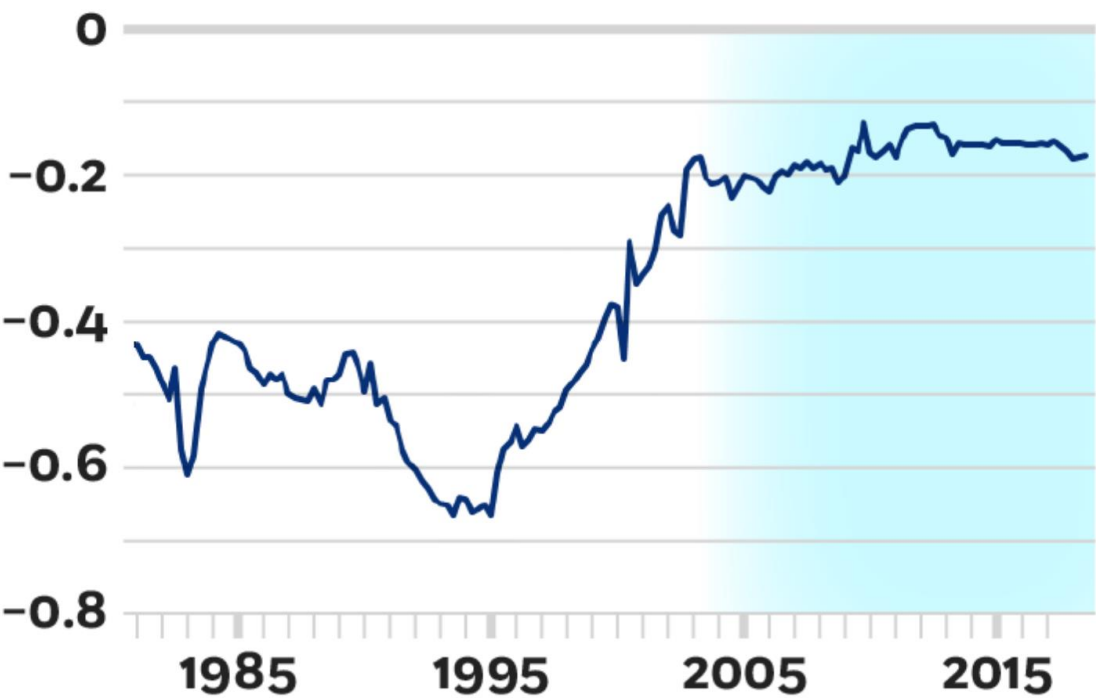
Phillips Curve:  $\pi_t^c = \beta_1 \pi_t^e + \beta_2 \pi_{t-1}^c + \beta_3 \pi_{t-2}^c - \beta_4 \text{SLACK}_t + \beta_5 \text{IMP}_t + \varepsilon_t$

Agg Demand:  $Y_t = Y_t^* - \beta(r - r^*) + \varepsilon_t$

# China put the Phillips Curve in a Coma

## Phillips curve's slope

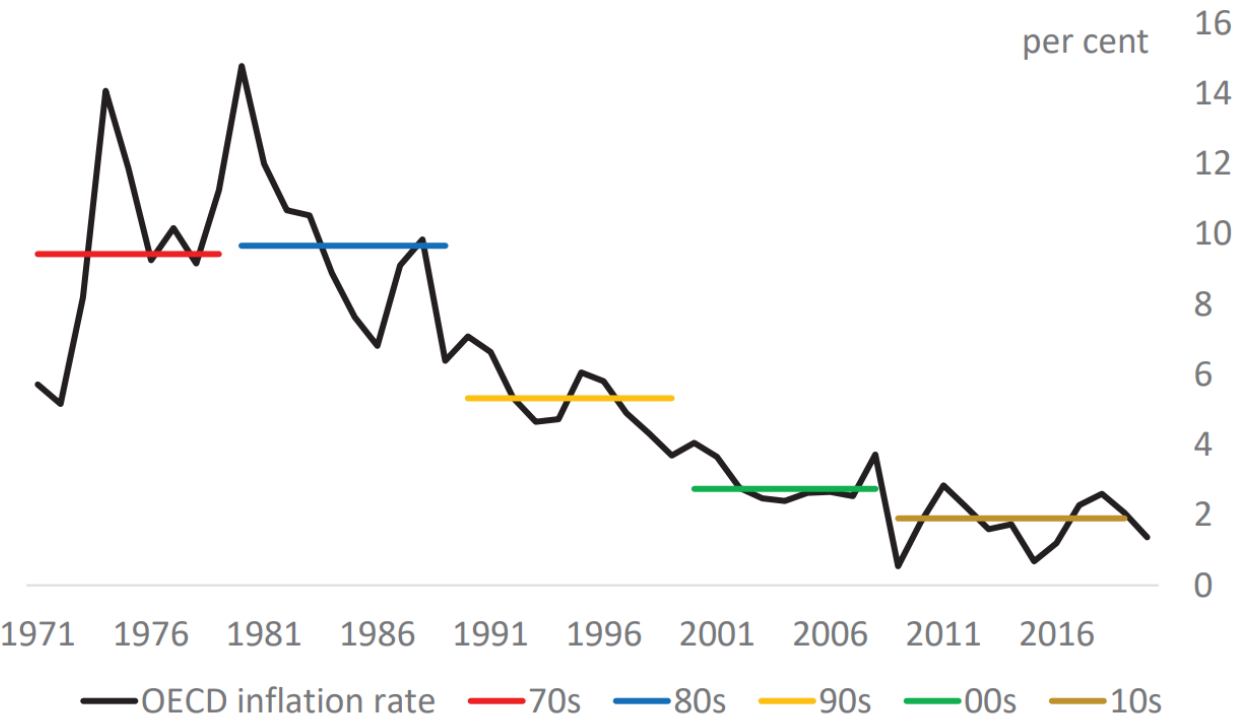
*Closer to zero = weaker connection between US unemployment rate and previous 20 years of price inflation*



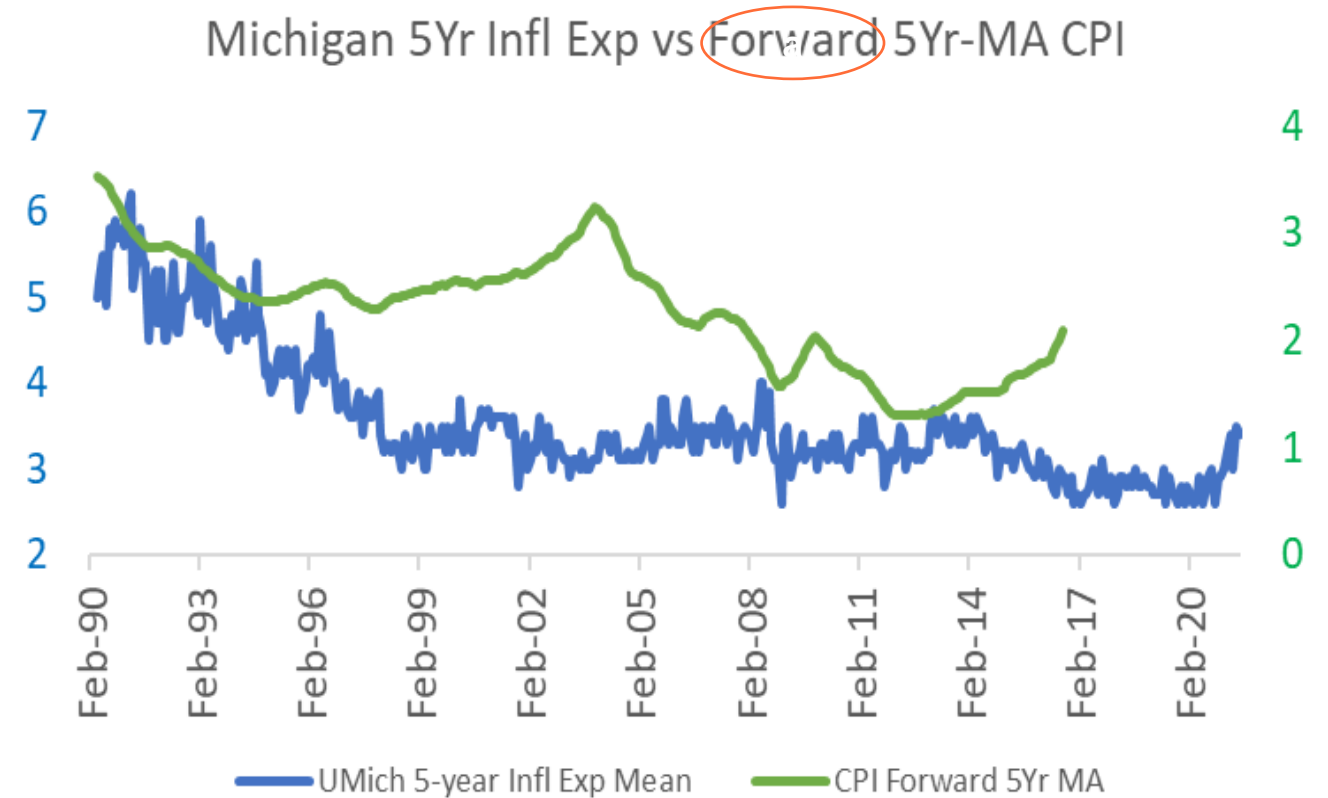
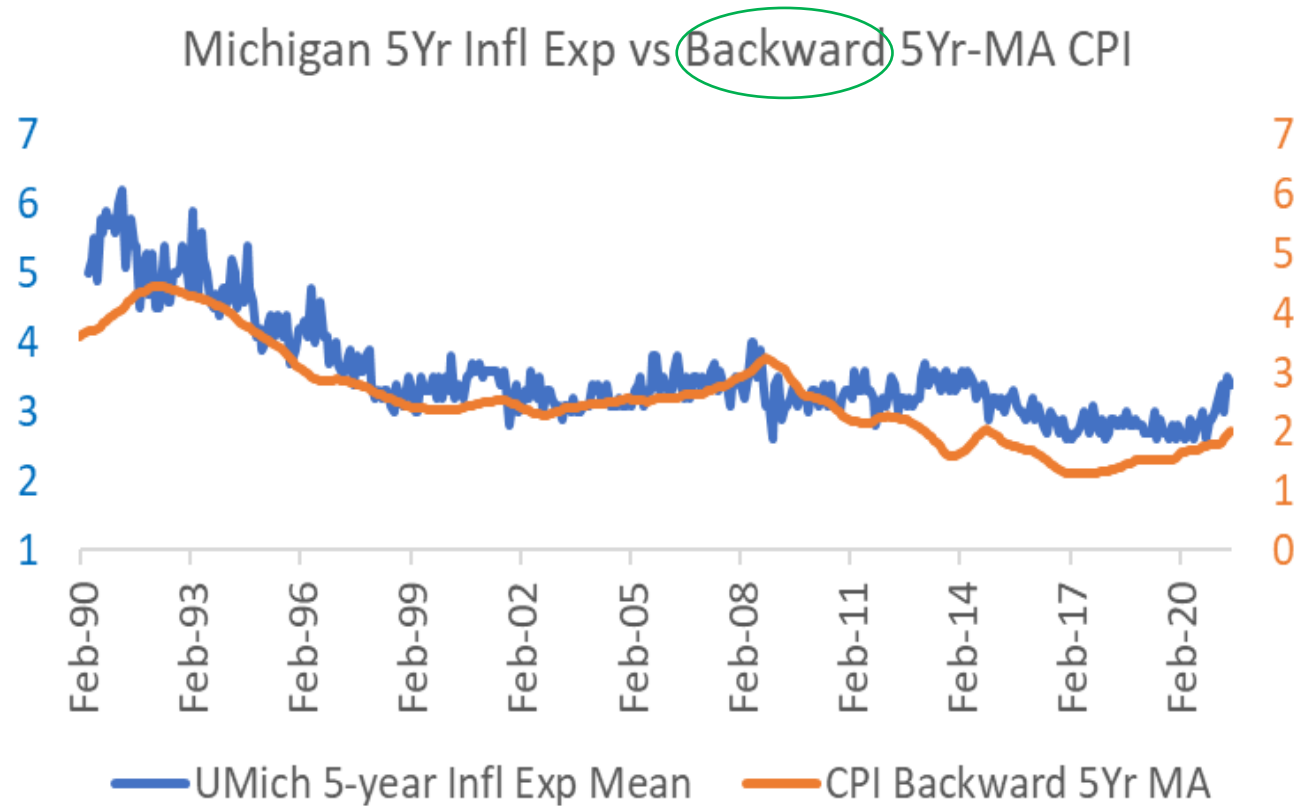
Hooper et al., 2019

## China Disinflated the World, but Kept Growth Steady

Chart 2: Global Inflation

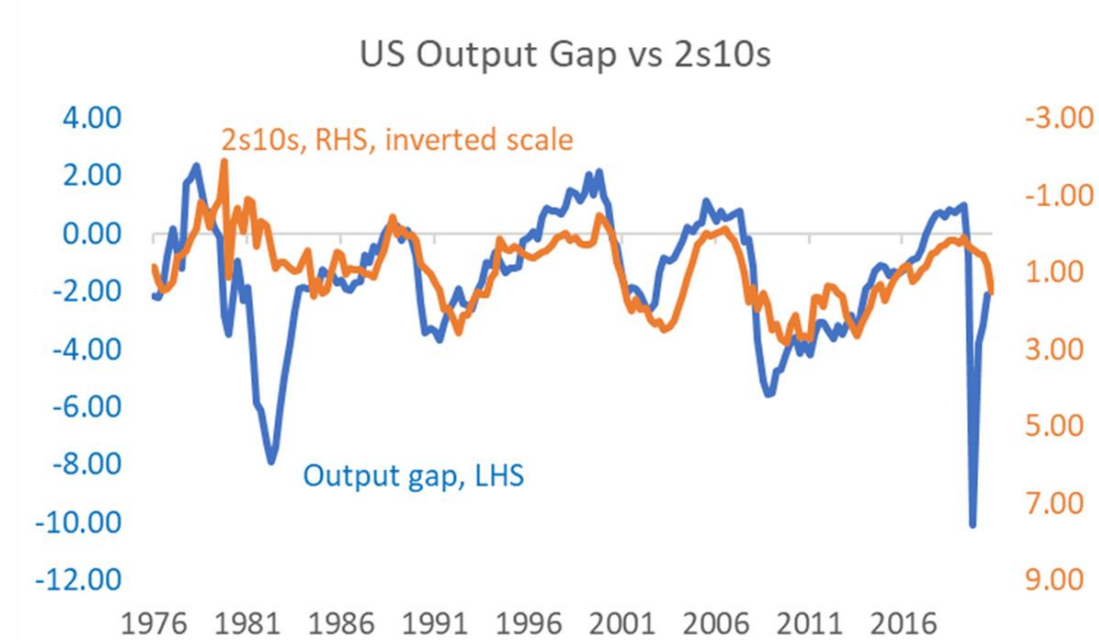


# Inflation Expectations are Far Less Anchored/Relevant than CBs Think

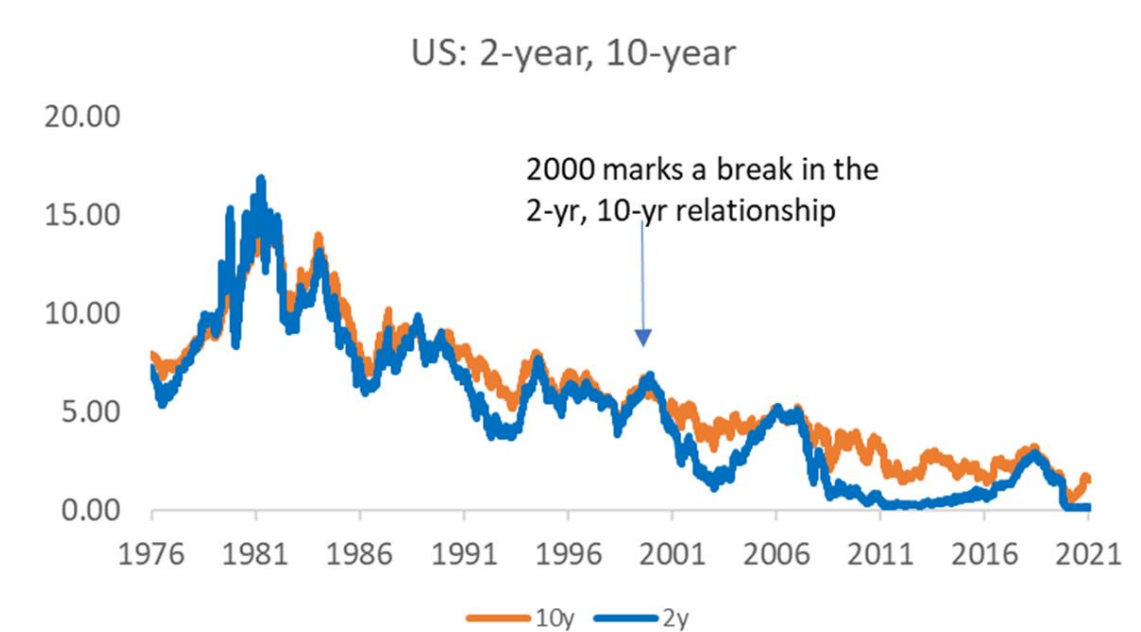


# $r^*$ : The Short-Run $r^*$ Gap, and Real Yield Vigilantes

## The yield curve as a predictor of expansions



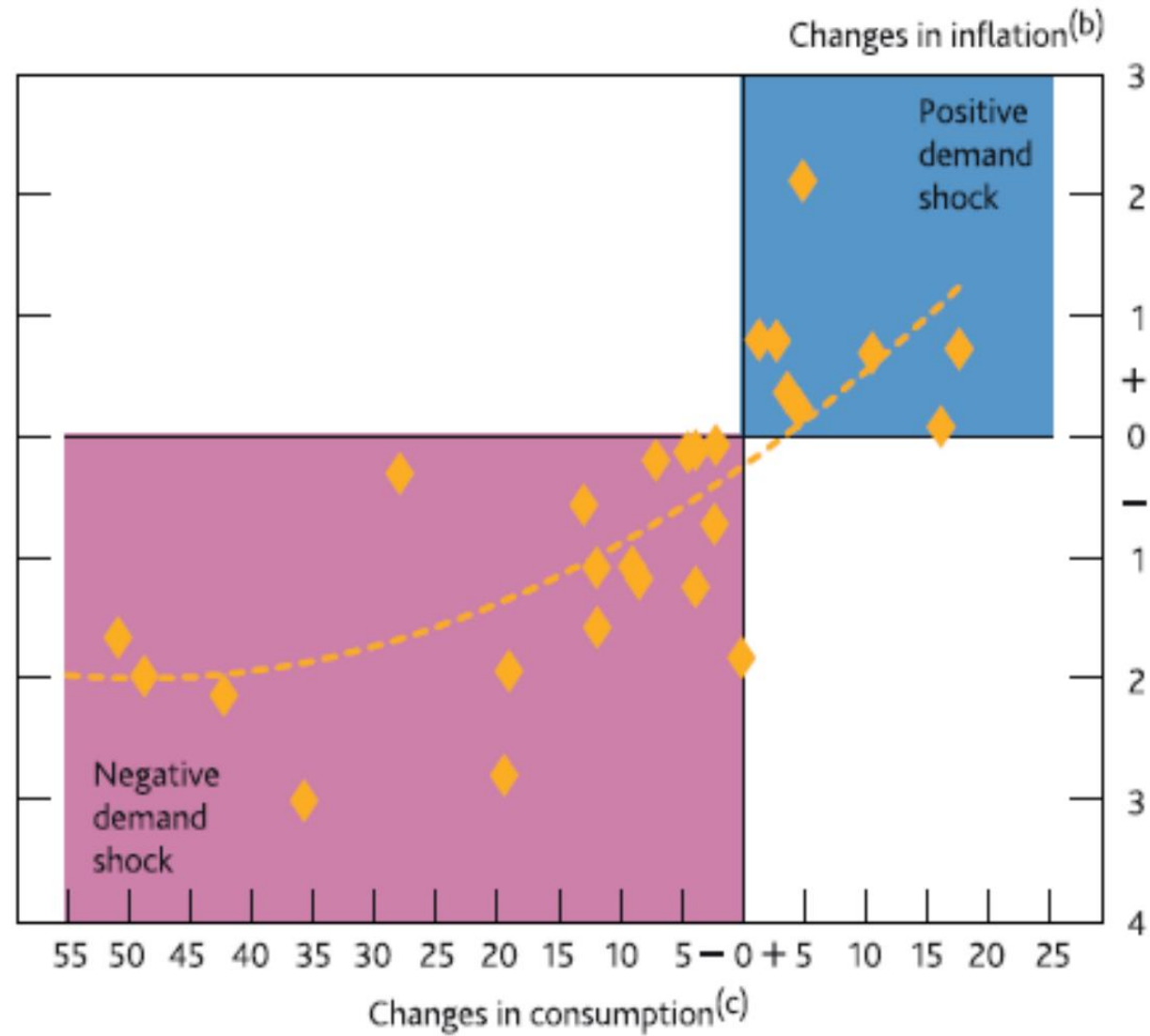
## Is a new 2yr-10yr relationship developing?



# A Signal-Extraction Problem: The Transition from Covid-Inflation to Cyclical Inflation

# 2021: Sunspot Inflation

Chart 11: Demand and Prices across Sectors (a)

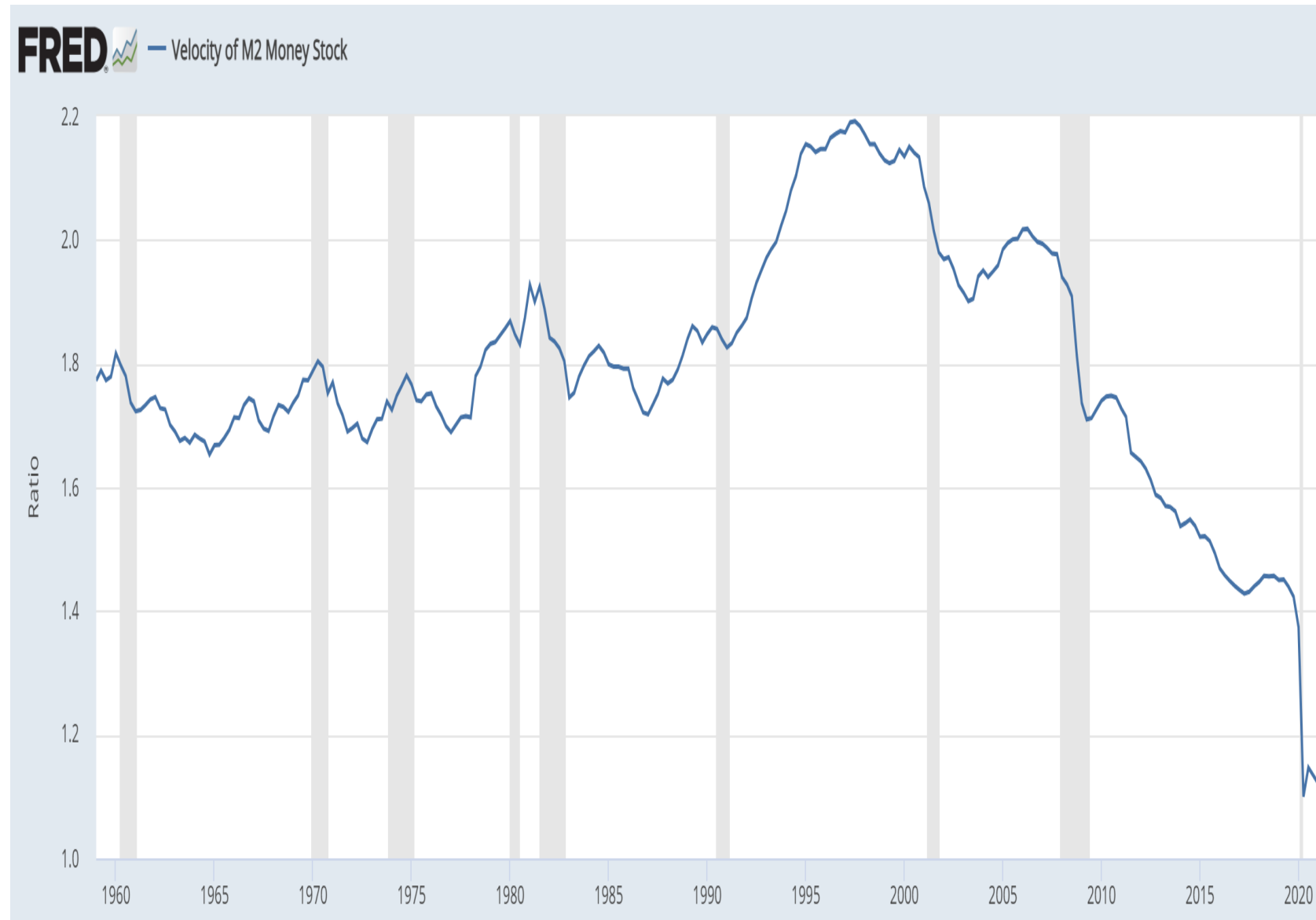


Source: ONS and Bank calculations.



# Collapse in velocity vs high forced savings: Common driver?

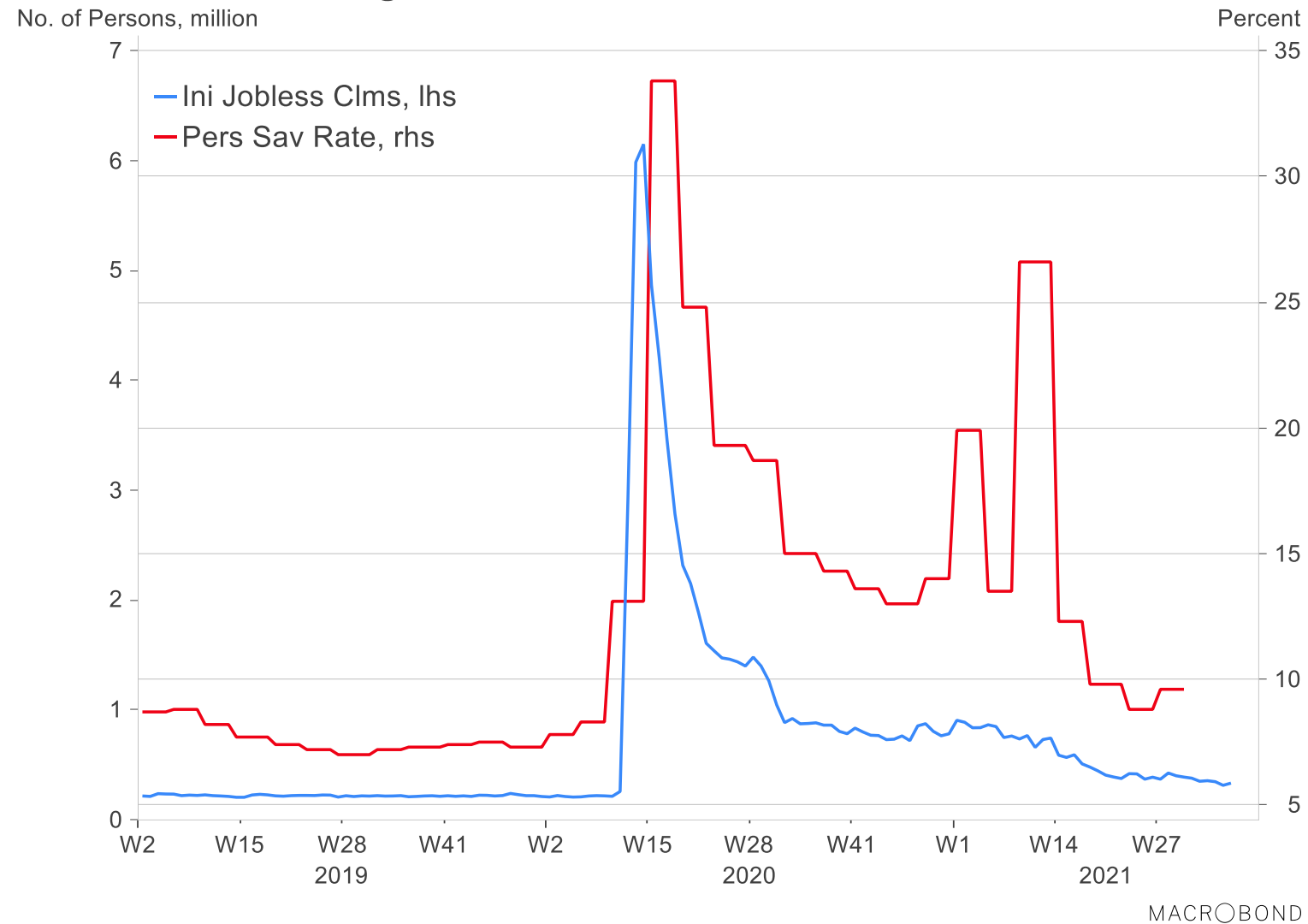
Velocity will normalize while the stock of M has risen



# Collapse in velocity vs high forced savings: Common driver?

Personal savings are 'forced', not precautionary

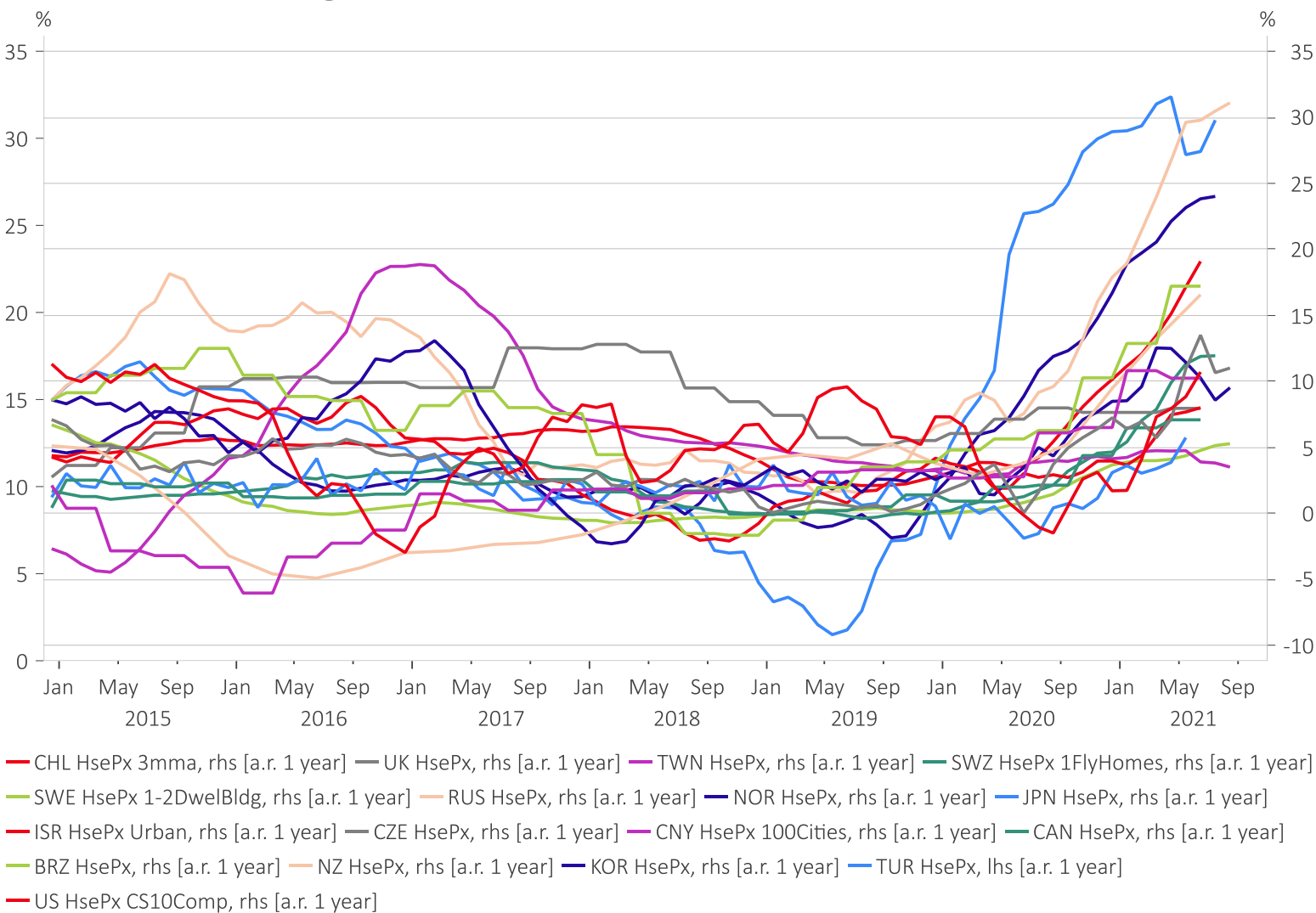
## US Personal Savings Rate vs Jobless Claims



# Housing IS the (Global) Business Cycle

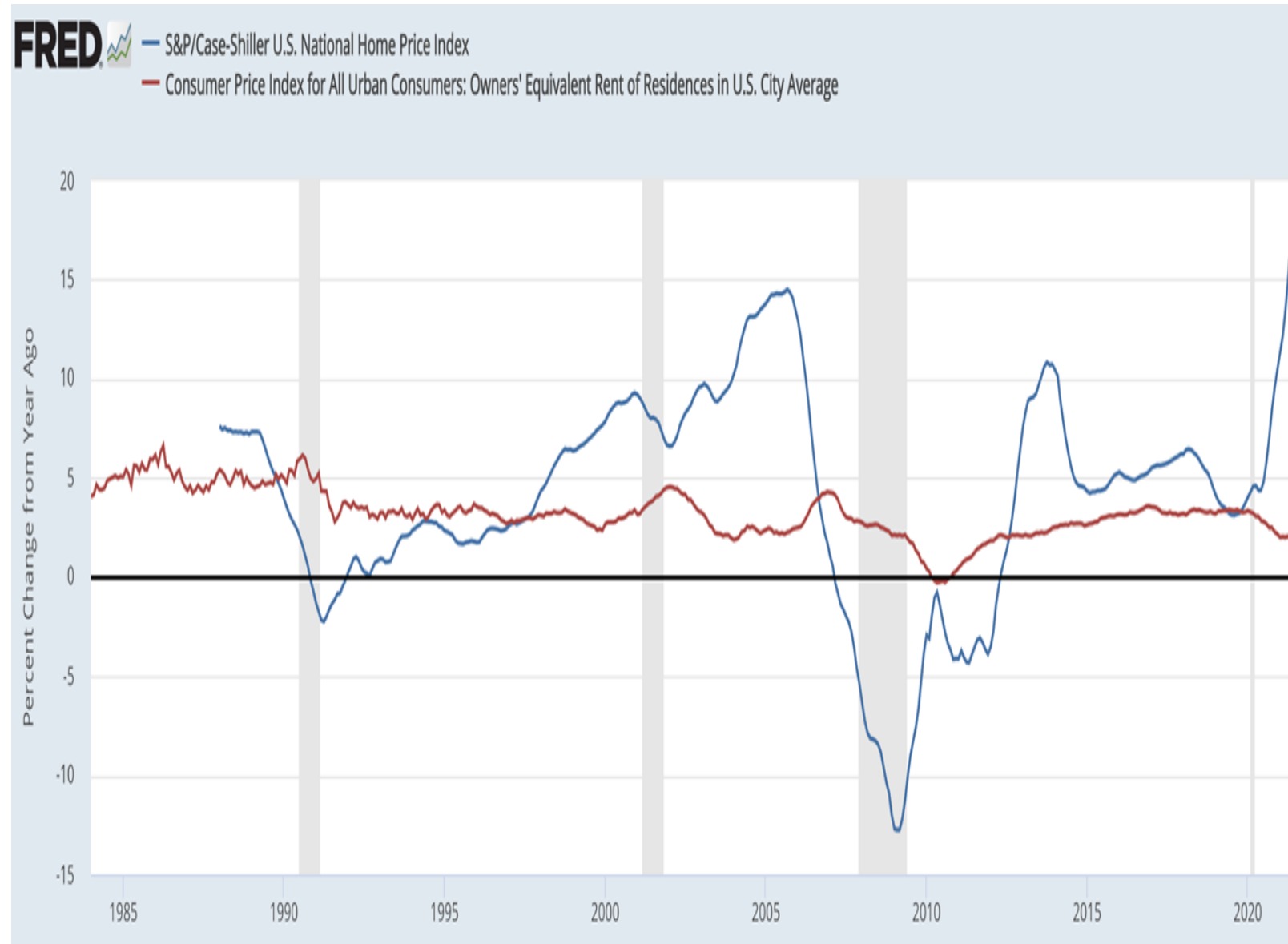
The Permanent Income Hypothesis will determine whether housing booms

## A Global Housing Boom



# Housing IS the (Global) Business Cycle

House price booms typically happen much later in the cycle, and then pull rents upwards



# Conclusions

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- Inflation is coming – unlike the post-GFC central bank-led recovery, fiscal stimulus has gone to the real economy – central banks are financing it.
- The yield curve will steepen, perhaps to levels we have not seen before
- Green investment will boost investment demand, but it is likely to be inflationary
- Lower within-country inequality will fall, but against weaker growth
- Central bank independence under increasing threat
- **Biggest risk:** This structural outlook materializes modestly first, creates an episode of debt-deflation, and then reappears in a stronger form