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## LOW NATURAL REAL INTEREST RATES AND THE IMPLICATIONS FOR MONETARY POLICY – A COMMENT

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Comments given at the conference "The Future of Monetary Policy: What Can We See as the Dust Has Settled", organized by the Czech National Bank.  
The views expressed in this presentation are those of the presenter and do not necessarily reflect those of Danmarks Nationalbank.

# Four key questions

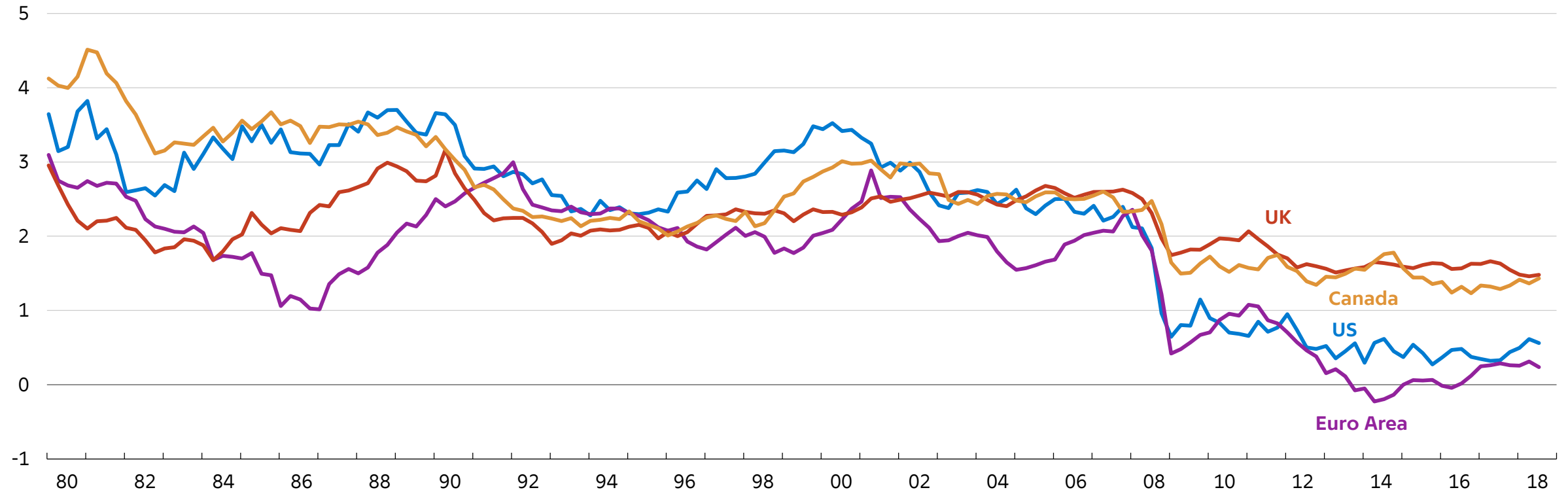
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- What is the current level of the natural real interest rate,  $r^*$ ?
- What are the key drivers?
- Where will we go from here?
- What are the implications for the future of monetary policy?

# Declining trend in natural rate of interest – a global phenomenon

## Estimates of natural rate of interest

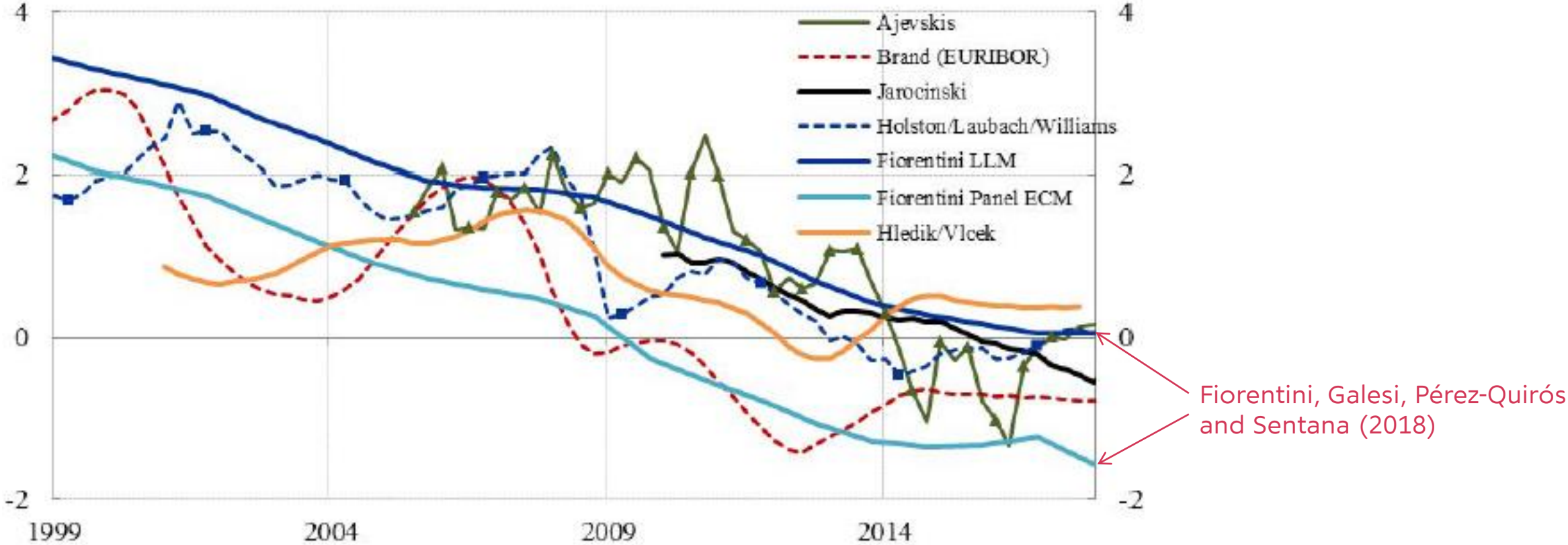
Real rate, per cent



Note: Estimates are based on the methodology from Laubach and Williams (2003).  
Source: Holston et al. (2017).

# Agreement on the trend – uncertainty over the level

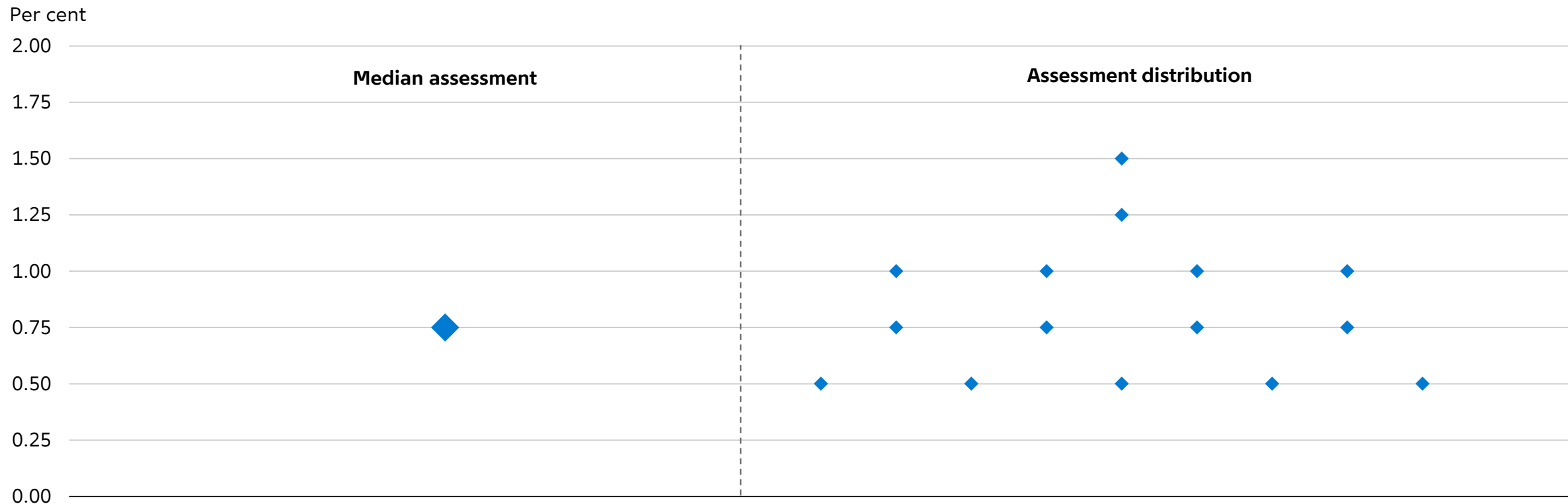
Different estimates of real natural rate of interest in the Euro Area



Source: Claus Brand, Marcin Bielecki and Adrian Penalver (editors), The natural rate of interest: estimates, drivers, and challenges to monetary policy, ECB Occasional Paper Series No 217/ December 2018.

# Uncertainty on the level among policy makers

## FOMC participants' estimates of the real natural interest rate in the US



Note: Estimates are long run projections on the Federal funds rate minus the inflation target of 2 per cent.  
Source: FOMC minutes, March 2019.

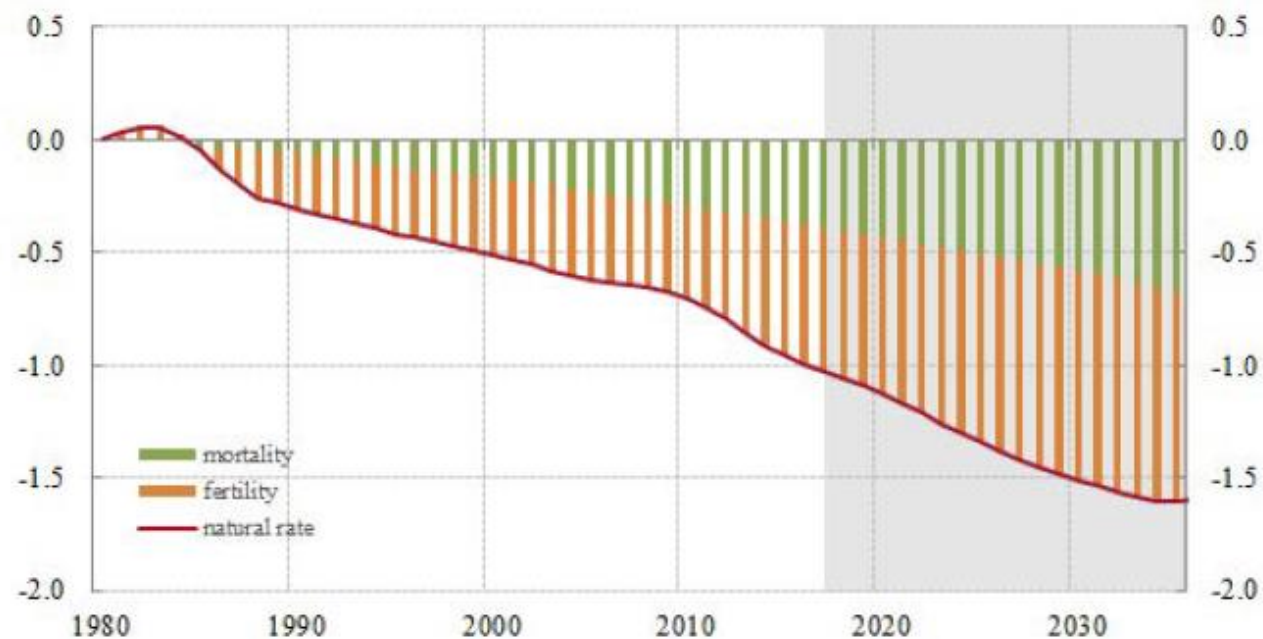
# OLG models find large effect of demographics in the Euro Area

Chart 4

Demographic drivers of euro area  $r^*$  estimates

(percentages)

(a) Estimates from Bielecki *et al.* (2018)

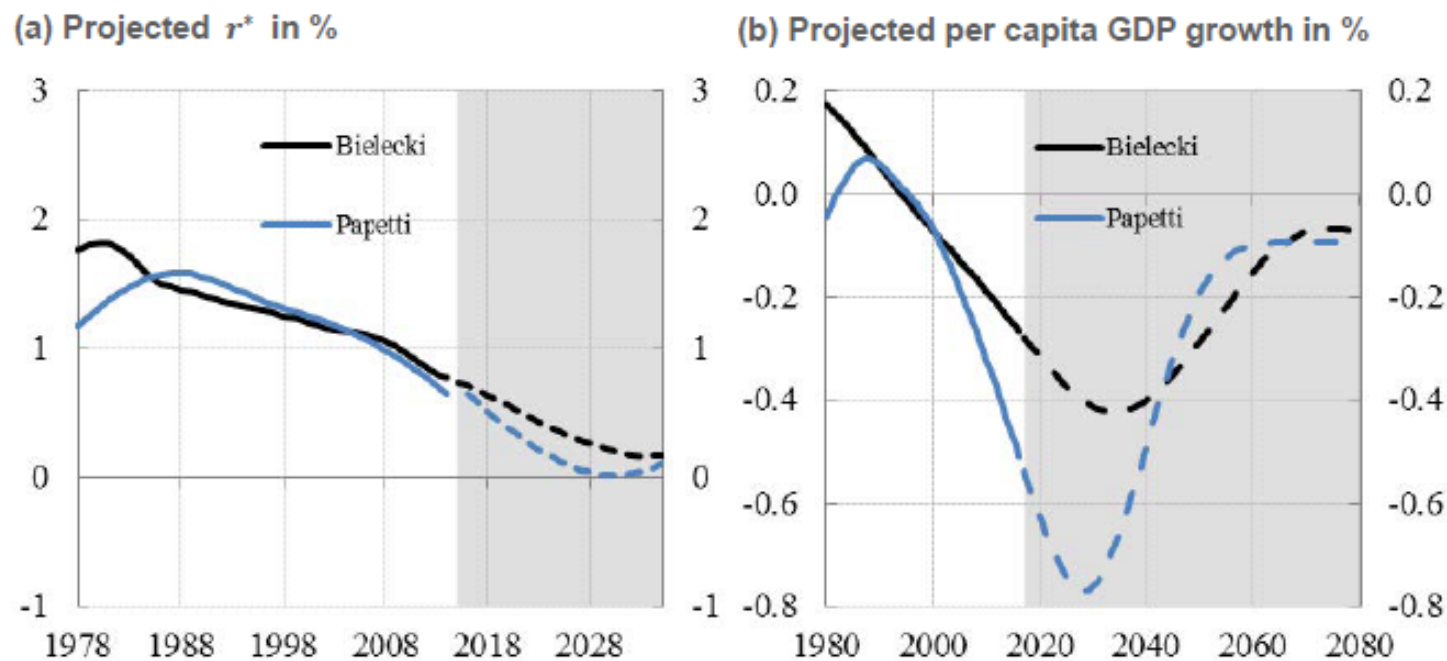


Source: Claus Brand, Marcin Bielecki and Adrian Penalver (editors), The natural rate of interest: estimates, drivers, and challenges to monetary policy, ECB Occasional Paper Series No 217/ December 2018.

# Further decline in Euro Area $r^*$ likely

Chart 3

OLG-based scenarios by Bielecki *et al.* (2018) and Papetti (2018)



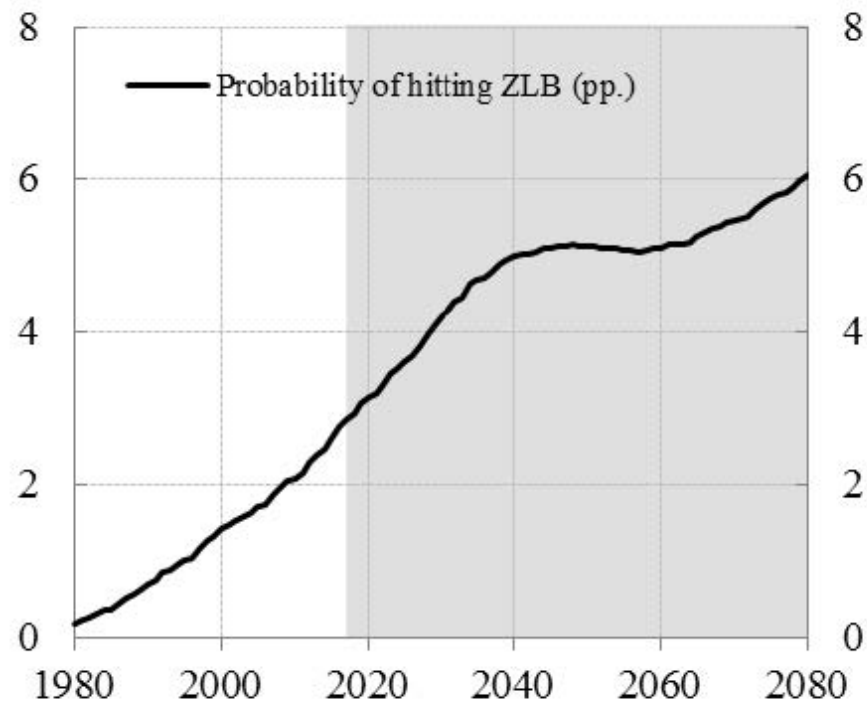
Note: Projections are dashed lines and marked by shaded areas.

Source: Claus Brand, Marcin Bielecki and Adrian Penalver (editors), The natural rate of interest: estimates, drivers, and challenges to monetary policy, ECB Occasional Paper Series No 217/ December 2018.

# Increasing likelihood of hitting zero

Chart 17

Projected influence of decrease in  $r^*$  on the probability of hitting the ZLB in Bielecki *et al.* (2018)



Source: Claus Brand, Marcin Bielecki and Adrian Penalver (editors), The natural rate of interest: estimates, drivers, and challenges to monetary policy, ECB Occasional Paper Series No 217/ December 2018.



# Implications for the future of monetary policy

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- Unconventional monetary policy
  - Negative interest rates
  - Forward guidance
  - Large scale asset purchases
- Alleviate problem of lower bound on interest rates
  - Phase out cash
  - Higher inflation target
  - Price level targeting

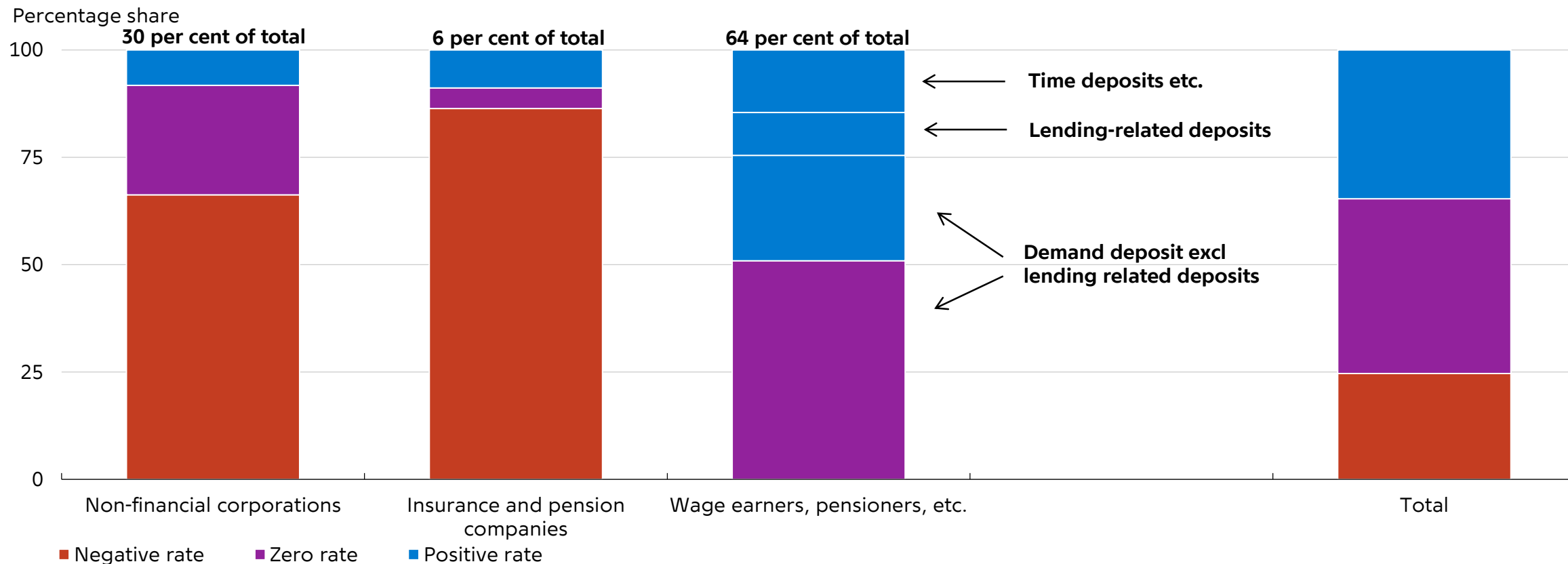
# Negative policy rates

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- Negative interest rates have proven to be an option
- Danish experience with -0.65 per cent:
  - Achieved objective of keeping exchange rate stable
  - No cash hoarding
  - Bank profitability has remained healthy
  - No obvious bubbles in asset markets
  - Transmitted to other relevant interest rates, thereby providing monetary stimulus (although not the objective in Danish case) – similar finding by other central banks

# Negative rates apply to large share of corporate deposits

## Deposit rates for different sectors in Denmark



Note: Total covers three sectors: Non-financial corporations, Insurance and pension companies, and Wage earners, pensioners, etc.

Source: Danmarks Nationalbank.

# Large scale asset purchases and forward guidance

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- Large scale asset purchases have been conducted by major central banks (Fed, BoE, ECB, BoJ etc.)
- Substantial evidence that they reduces long-term interest rates (Krishnamurthy and Vissing-Jørgensen (US), Joyce et al (UK), Altavilla et al (Euro Area))
- Also evidence that they stimulated demand and supported anchoring of inflation expectations (see e.g. Luck and Zimmermann (US) and Hammermann, Leonard, Nardelli and von Landesberger (Euro area))
- This has been supported by forward guidance
- So combination of negative interest rates, large scale asset purchases and forward guidance appear effective when close to ELB.

# Phase out cash?

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- The effective lower bound on interest rates essentially reflects that cash always carries an interest rate of zero
- Cash plays an important role for large groups of people
- No central banks actively consider phasing out cash
- Introducing a so-called central bank digital currency to exist alongside cash would not solve the problem

# Higher inflation targets or price level targeting?

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- Higher inflation targets (Blanchard et al 2010)
  - Would provide more room for monetary stimulus in a downturn
  - Should be viewed against the costs of higher inflation and (temporary?) loss of credibility
- (Temporary) price level targeting (Bernanke)
  - Would – if credible – lead to higher inflation expectations and lower real rates in periods of low inflation
  - Might reduce central bank credibility – at least for a while

# Conclusions

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- Equilibrium real interest rates have declined across the advanced economies – persistent phenomenon
- Lower equilibrium real interest rates reduce the effectiveness of conventional monetary policy in recessions
- Unconventional measures such as negative interest rates, asset purchases and forward guidance appear to have been effective
- Changes to policy objectives should be discussed with caution