

# DANMARKS NATIONALBANK

---

## WEALTH, DEBT AND MACROECONOMIC STABILITY

Niels Lynggård Hansen, Head of Economics and Monetary Policy. IARIW, Copenhagen, 21 August 2018



DANMARKS  
NATIONALBANK

# Agenda

---

- Descriptive evidence on household debt and assets
- Microdata-based evidence from Denmark
- Financial stability
- Macroeconomic stability

---

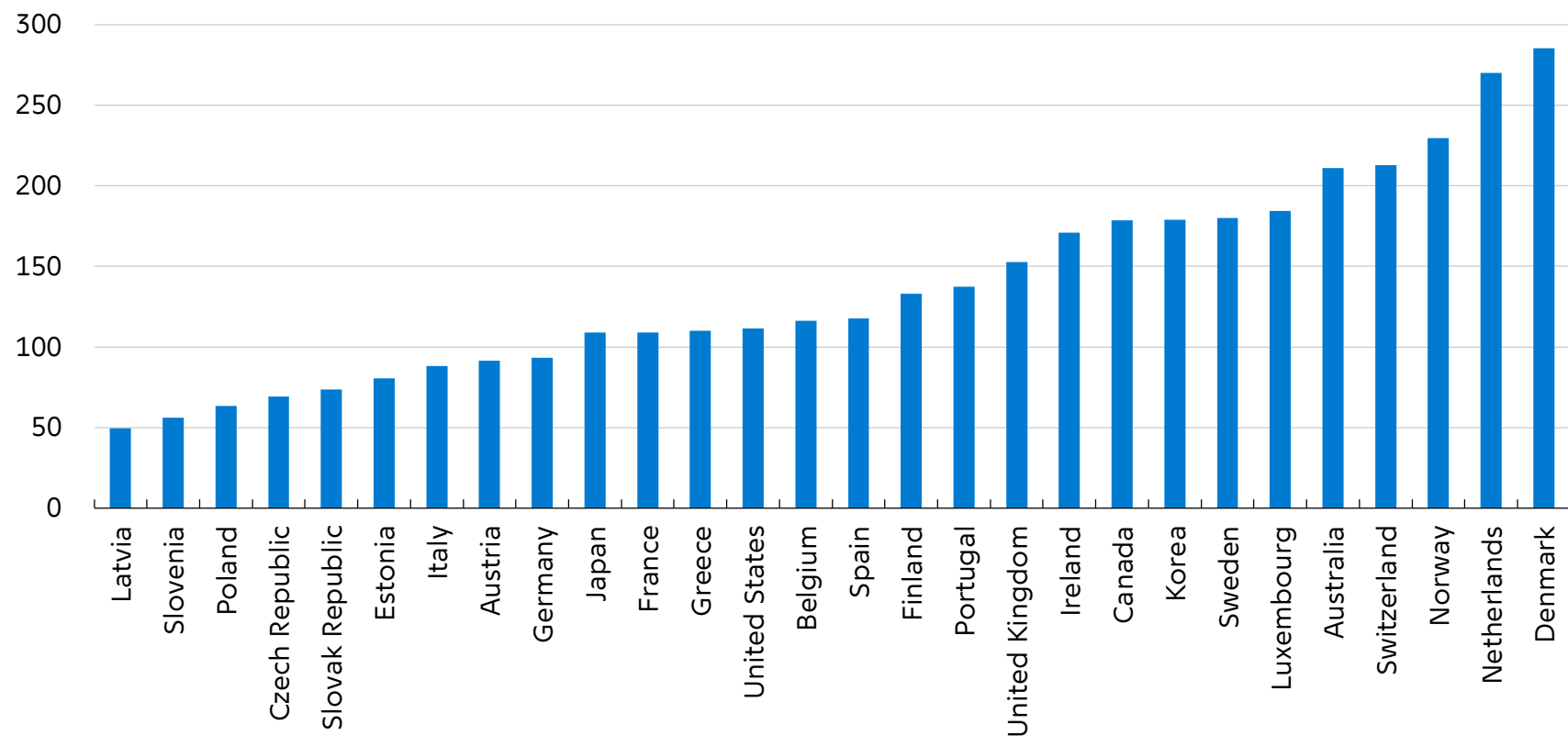
# Household debt and assets



DANMARKS  
NATIONALBANK

# Danish households have high levels of debt

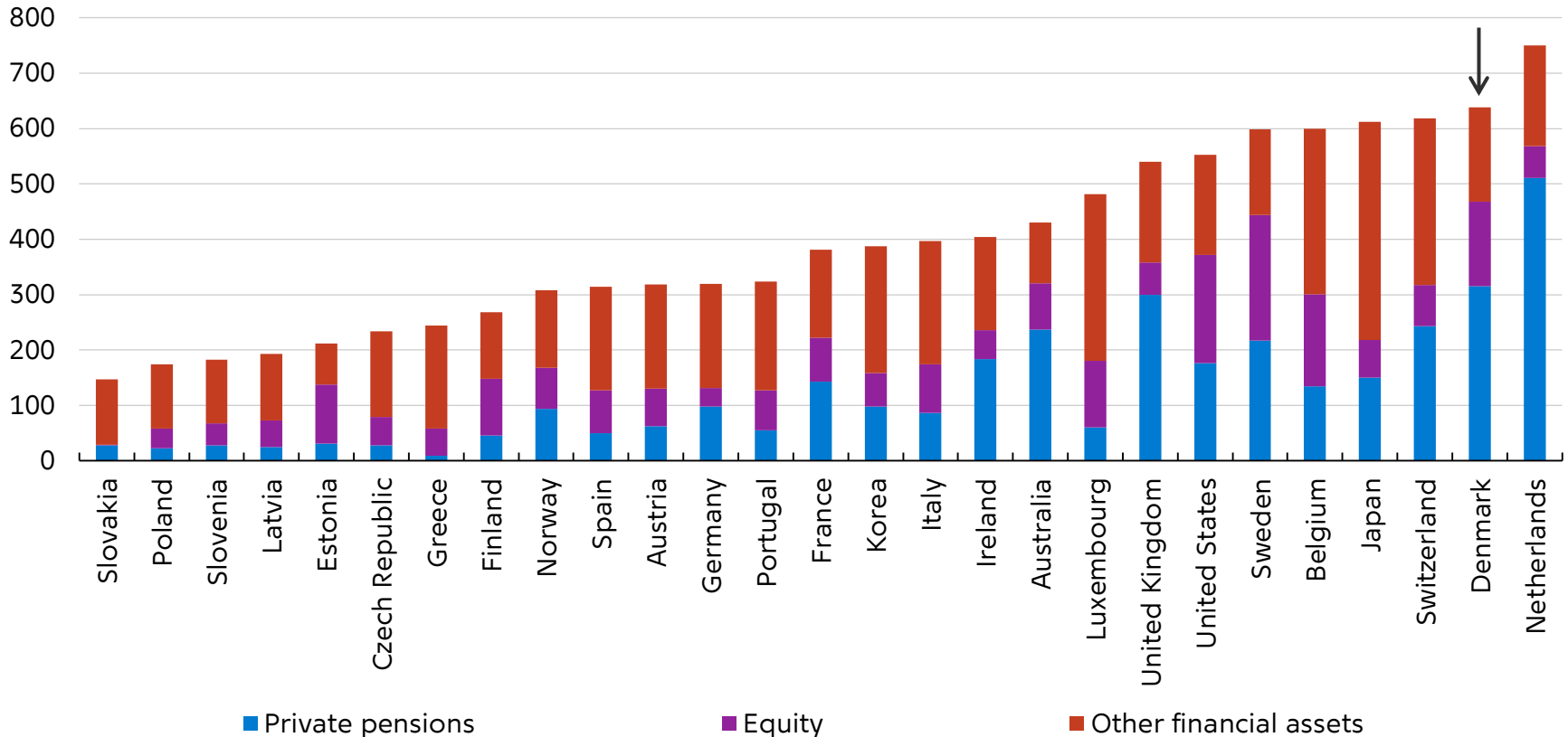
Debt to disposable income, per cent



Note: Data for 2016.  
Source: OECD

# ... But also substantial financial assets

Per cent of disposable income



Note: Data for 2016. Private pensions refer to assets in pensions funds and life insurance and are before taxes.

Source: OECD

---

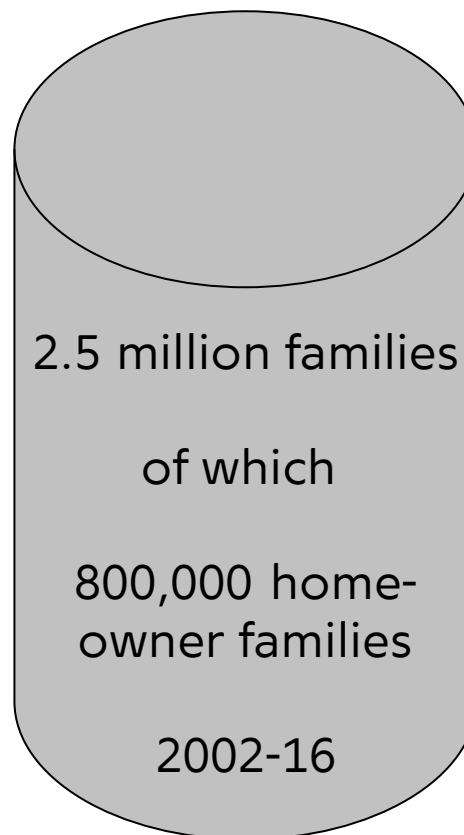
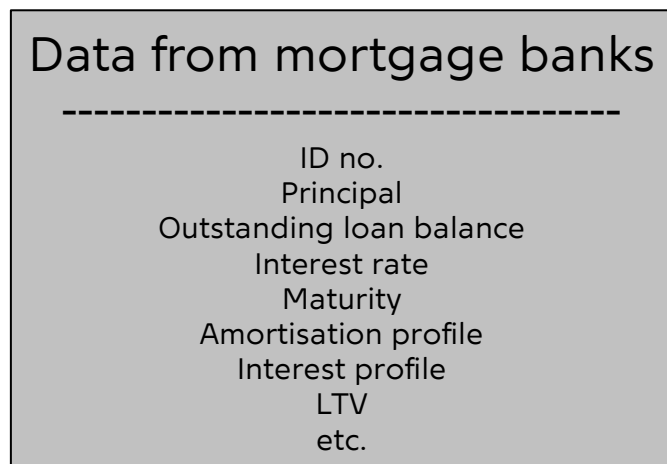
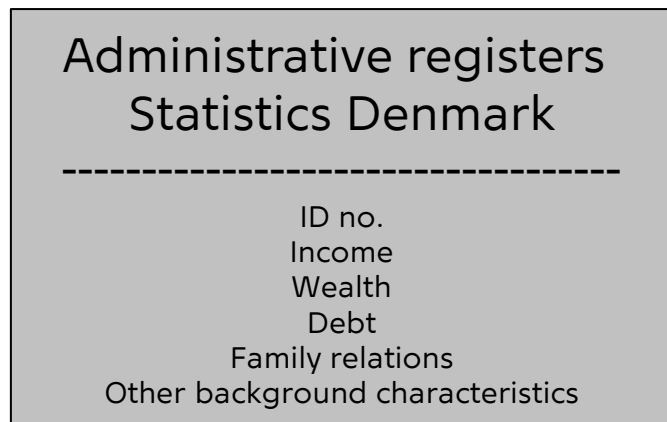
# Evidence from Danish microdata



DANMARKS  
NATIONALBANK

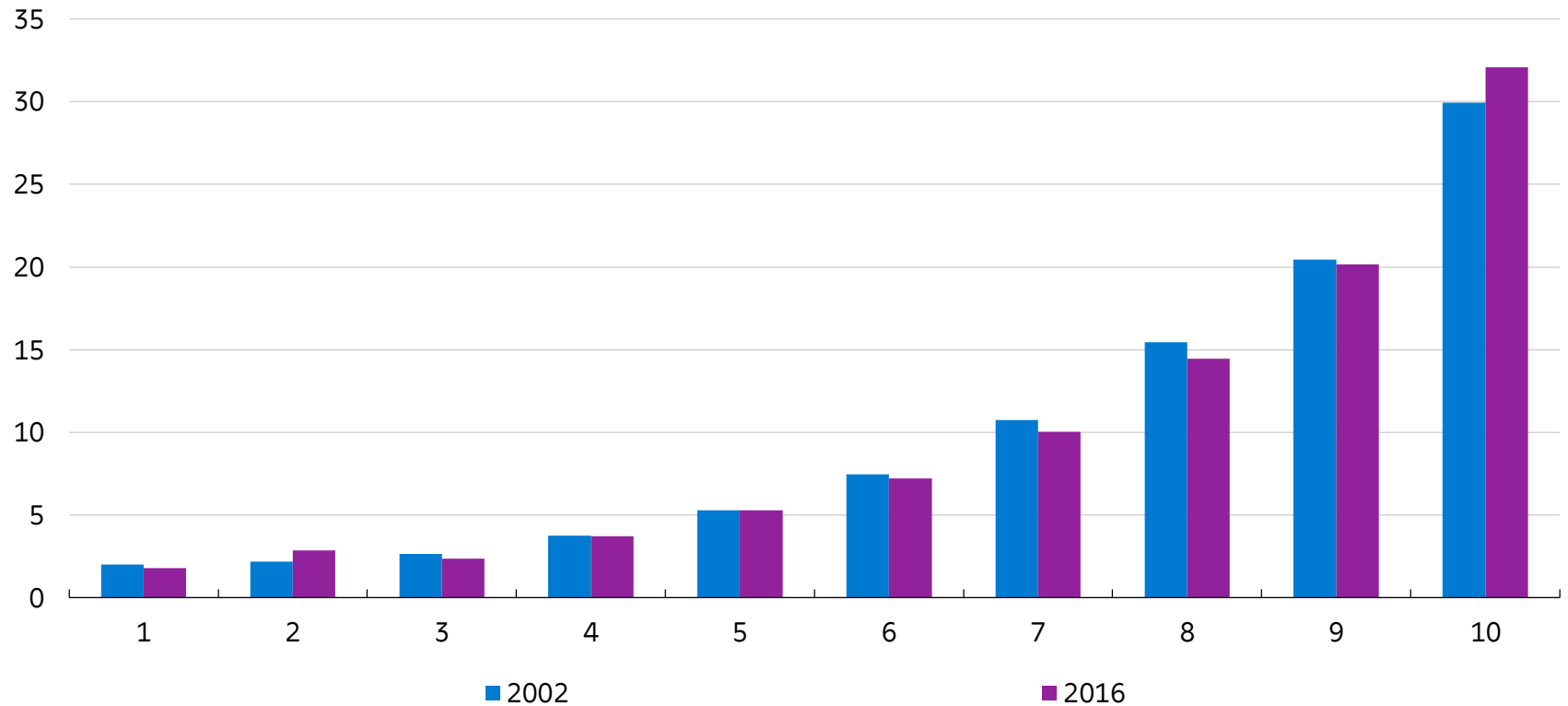
# Detailed microdata covering Danish families

---



# Debt is highly concentrated among high-income families...

Share of total debt stock, per cent

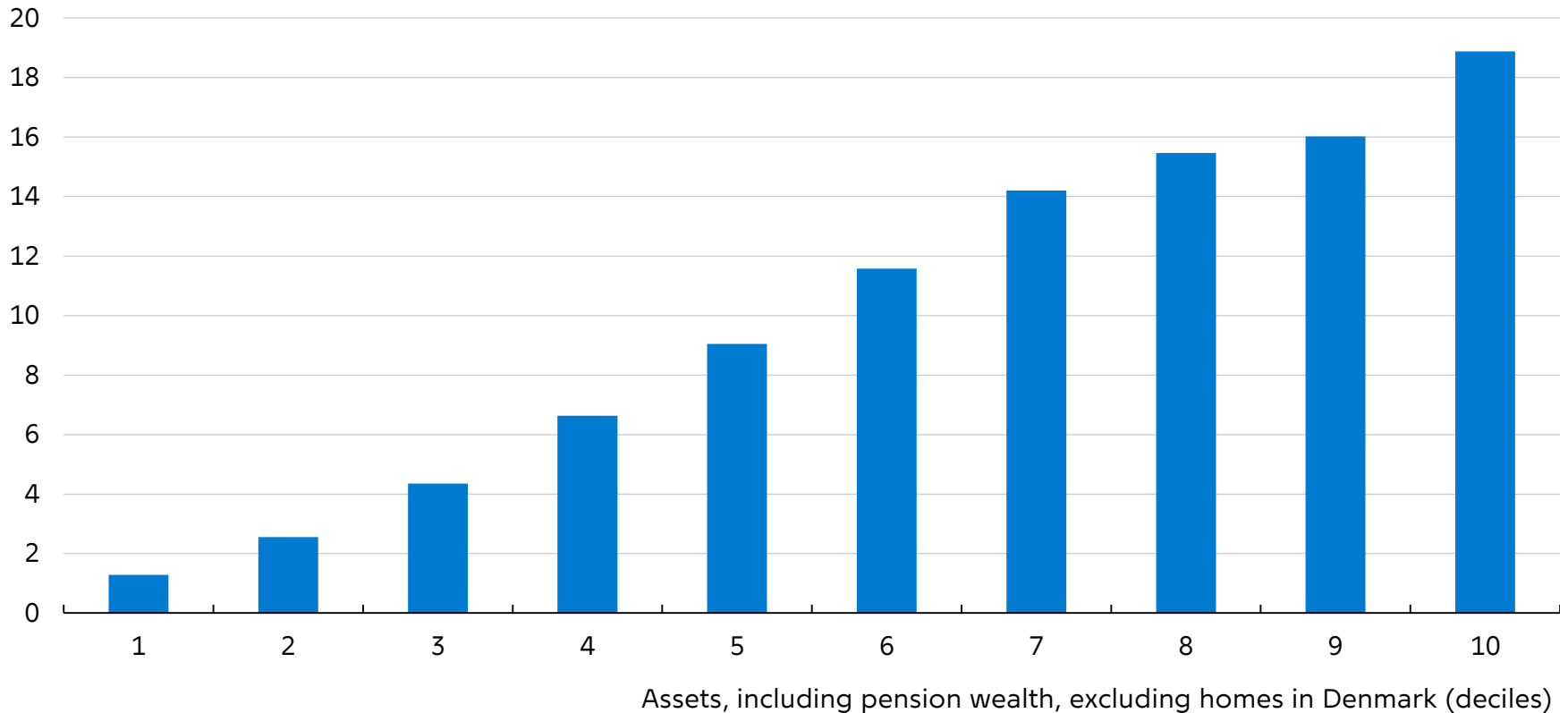


Source: Own calculations based on household level data from Statistics Denmark



# ... and among families with large financial assets

Share of total debt stock, per cent



Note: Data for 2015.

Source: Own calculations based on household level data from Statistics Denmark.

---

# Financial Stability



DANMARKS  
NATIONALBANK

# Percent homeowners in cells of debt relative to home value and gross income

Debt relative to home value, per cent	Debt relative to gross income, per cent						
	0 - 100	100 - 200	200 - 300	300 - 400	400 - 500	Over 500	
Over 150	0	2	2	1	1	1	
100 - 150	1	6	7	3	1	2	
50 - 100	3	15	14	7	3	4	
0 - 50	11	9	4	2	1	1	

Note: Homeowners are divided into cells based on their total debt relative to the value of their home and gross income. Data for 2016.  
Source: Statistics Denmark and own calculations

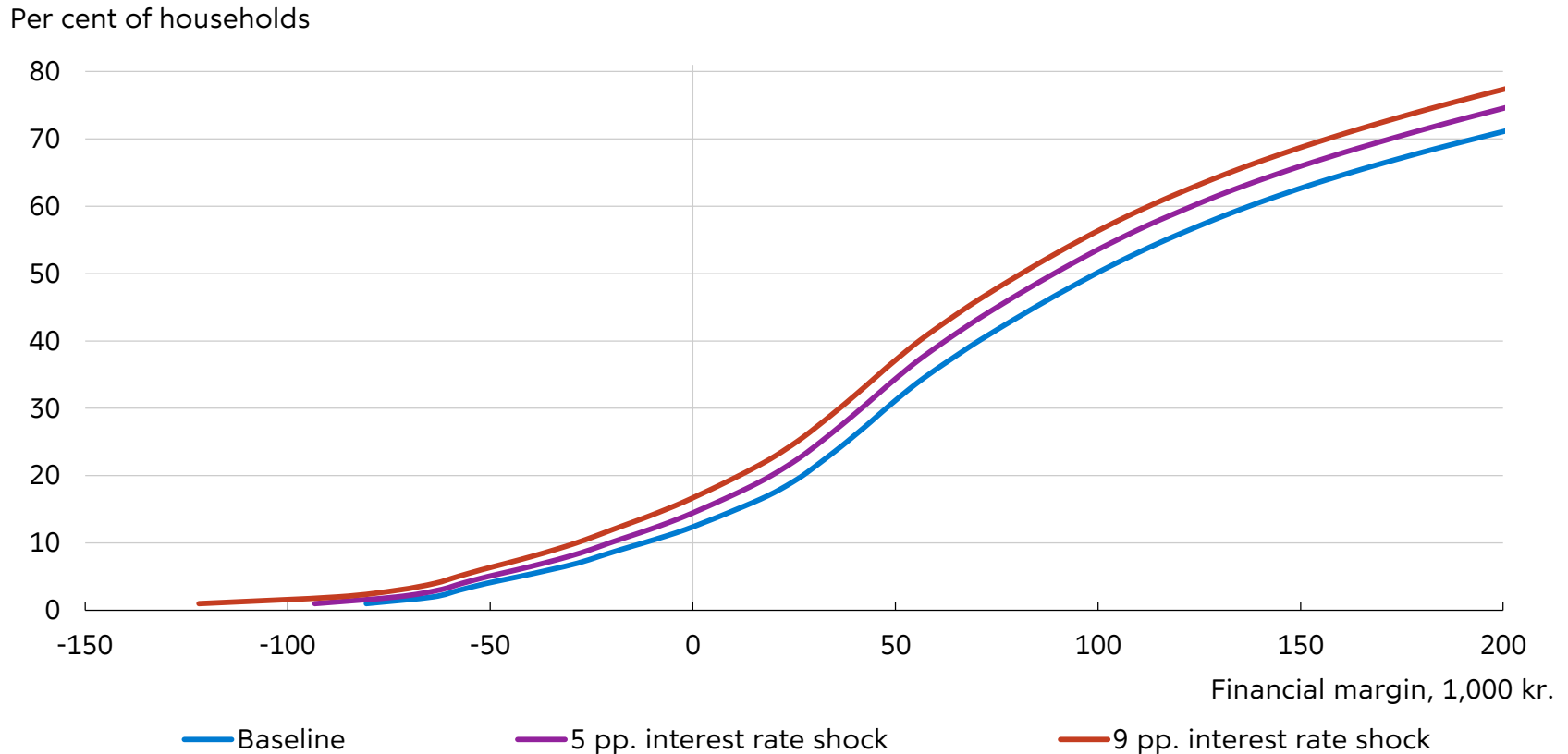
# Households with IO-loans have lower savings rates

Savings rate, per cent of disposable income



Note: Data for 2015.

# Stress testing households' financial situation



Note: Data for 2016.

---

# Macroeconomic Volatility:

*Did high debt amplify reduction in consumption after crisis?*



# Constructing a measure of consumption

---

- Start from accounting identity

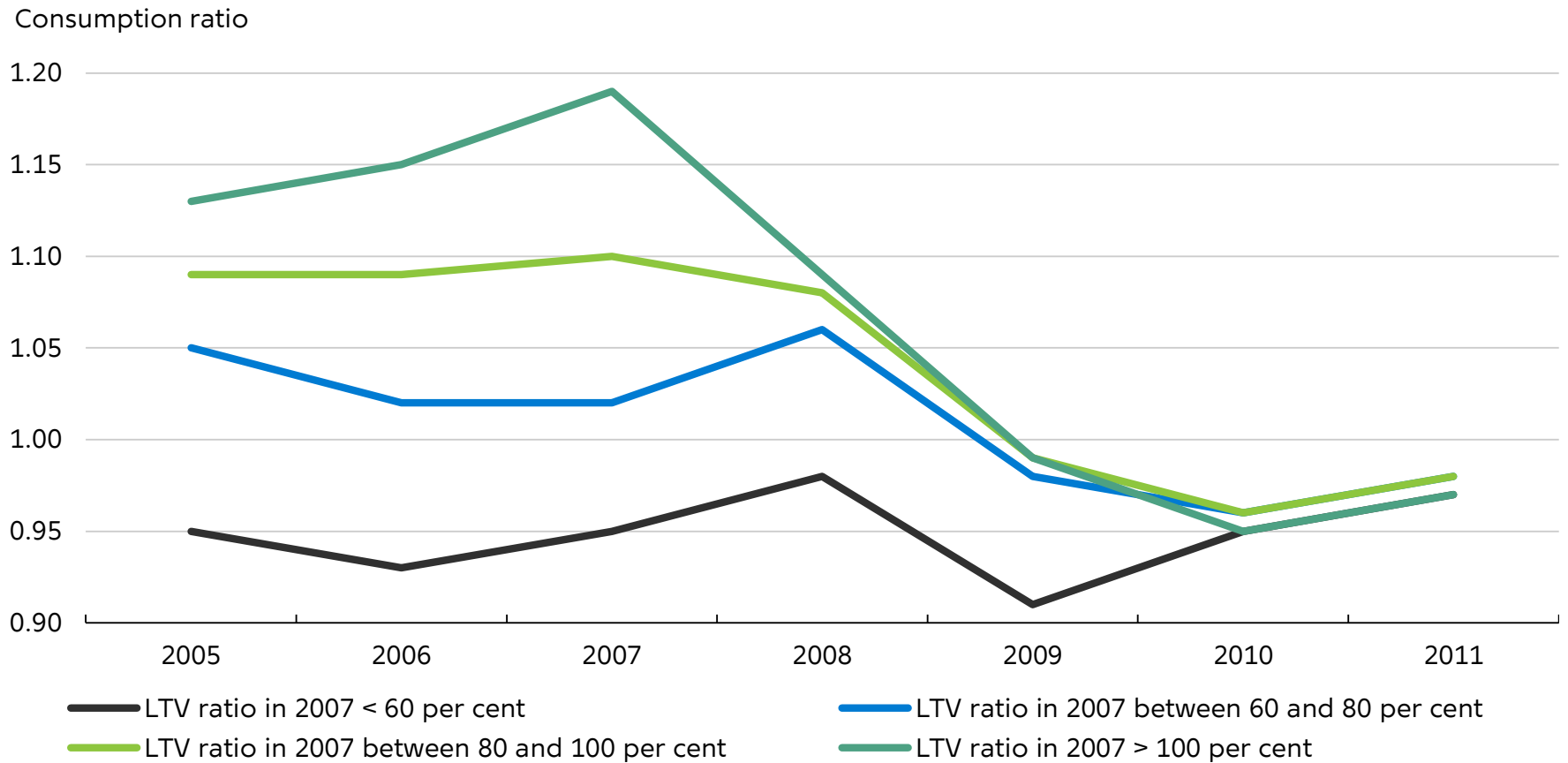
$$C = Y^d - S$$

- Imputed measure

$$C^{imp} = Y^d - P - \Delta NW$$

↑     ↑     ↑  
Observed

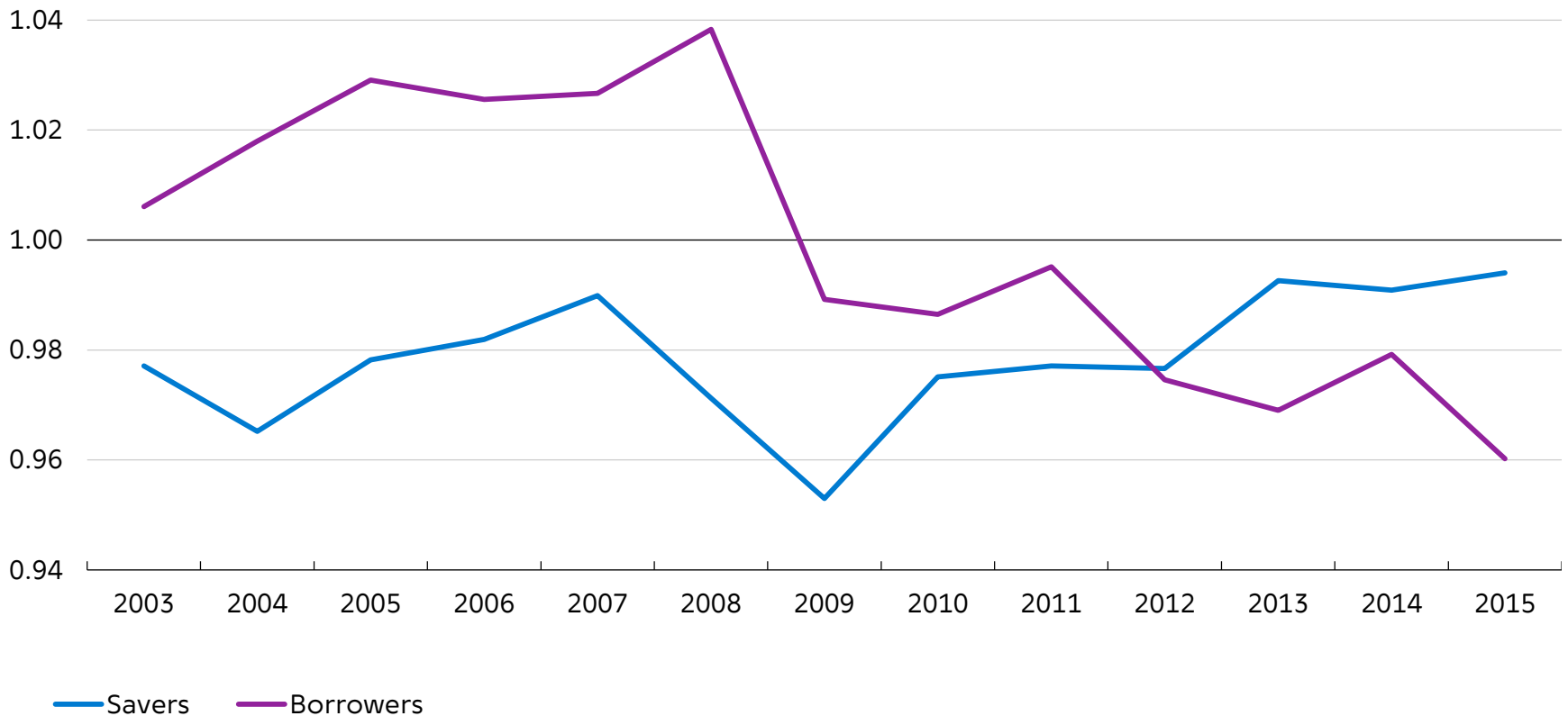
# Consumption ratio for different pre-crisis Loan-to-value (LTV)





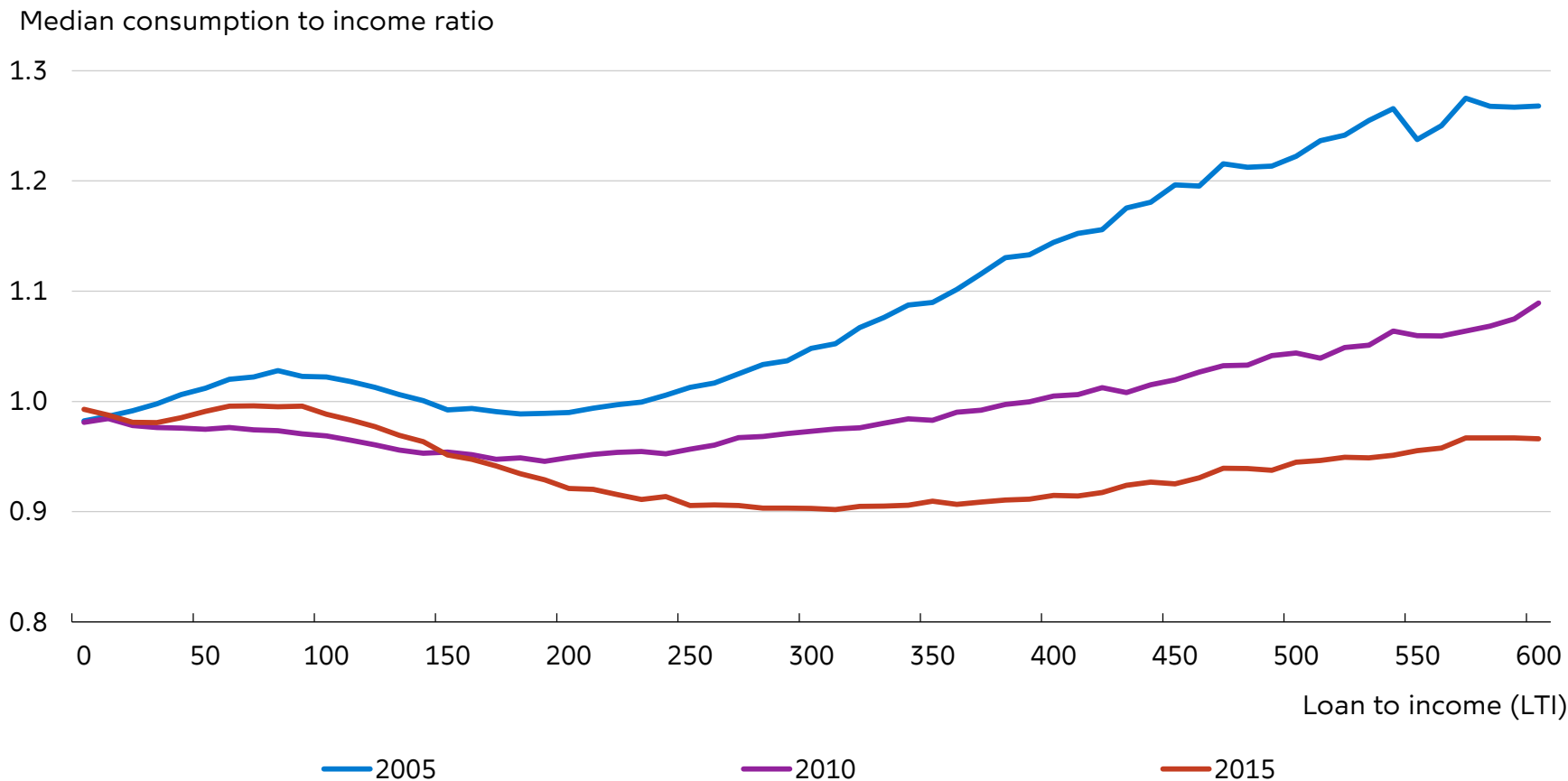
# Borrowers have continued to reduce their consumption – in spite of low interest rates

Median consumption to income ratio



Note: Borrowers are defined as households whose financial liabilities exceed their financial assets (excluding pension savings) and vice versa for savers.

# Consumption ratios and gross debt



# Main takeaways

---

- Microdata facilitates in-depth analysis of underlying mechanisms in macroeconomics
- Highly indebted households in Denmark generally have high income and substantial financial assets
- Risks, e.g. from low interest rates, closely monitored by micro data.
- Only few households – most of which are young – are vulnerable to sudden interest rate increases
- High household leverage may increase macroeconomic volatility