

# **Mortgage contract design, monetary policy, and financial stability**

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Mortgage Contract Design:

Implications for Households, Monetary Policy, and Financial Stability

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The views expressed in this presentation are those of the author and do not necessarily represent those of the IMF or IMF policy.

# Outline

- Co-ownership: Princeton University Tenancy-in-Common Program
- Variable vs. fixed mortgage rates
- Transmission mechanism of monetary policy
- Financial stability considerations

## **Example of co-ownership:**

### **Princeton University Tenancy-in-Common Program**

- PU website: “[An] arrangement, in which the University pays for and owns up to one-third of the property, leverages buying power and enhances flexibility to help eligible individuals purchase homes that meet their needs and family circumstances.”
- Low tax on benefit; sizable subsidy
- Buy 50% larger house
- Risk sharing of capital gains and losses
- Appraisal
- Negotiations about extensions and remodeling

## Variable- vs. fixed-rate mortgages

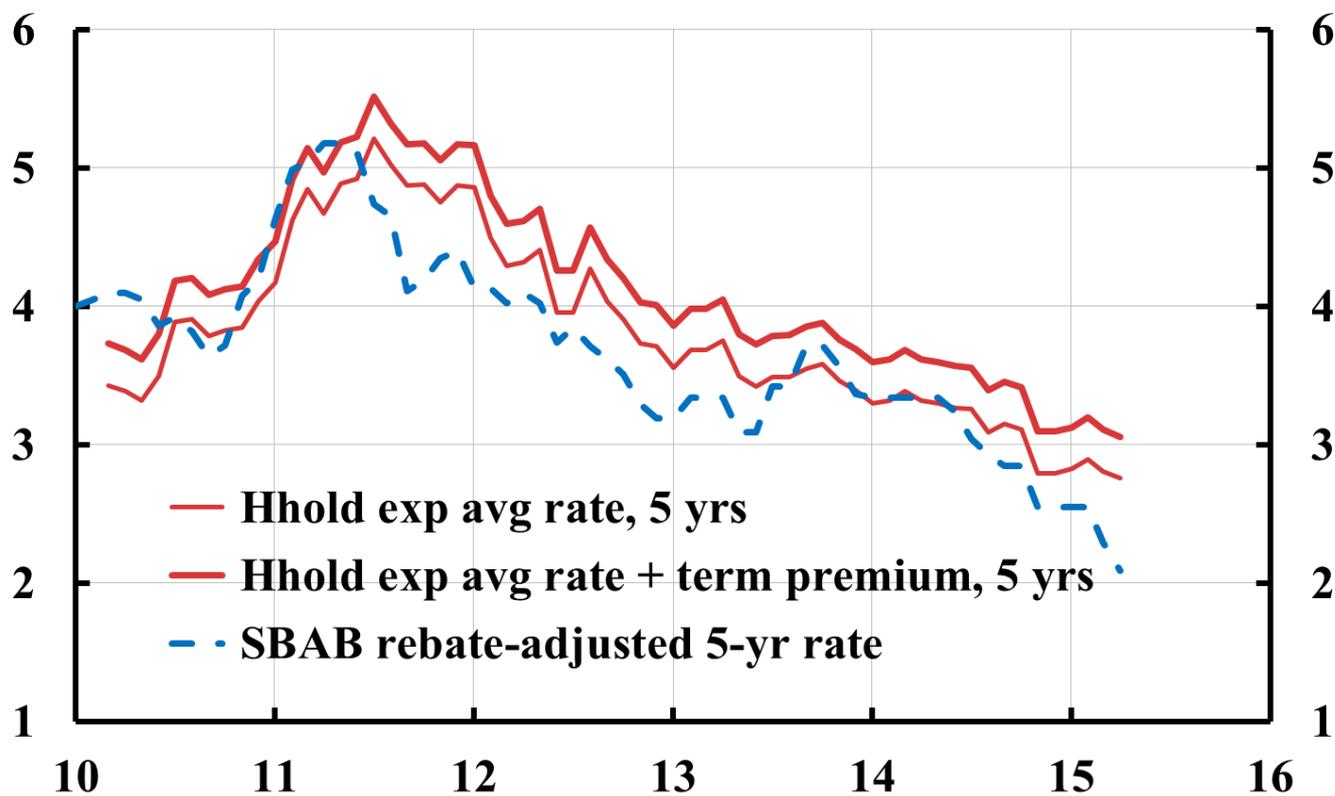
- Sweden: 73% of new mortgages are ARMs (57% of stock of mortgages)
- Monetary policy more effective with ARMs
  - Very good in Sweden and Norway during recent crisis
- Individual incentives for ARMs
  - Lower average rate but more risk
  - Penalty for getting out of FRMs

## Variable- vs. fixed-rate mortgages

- Do ARMs make households more vulnerable?
  - Variable rates provide business cycle insurance (reduces risk!)
  - Do households have too optimistic mortgage-rate expectations?
  - Stress tests of households' repayment capacity and resilience towards disturbances!
  - Tests of house prices in line with fundamentals

# Swedish household mortgage-rate expectations are **higher** than actual rates

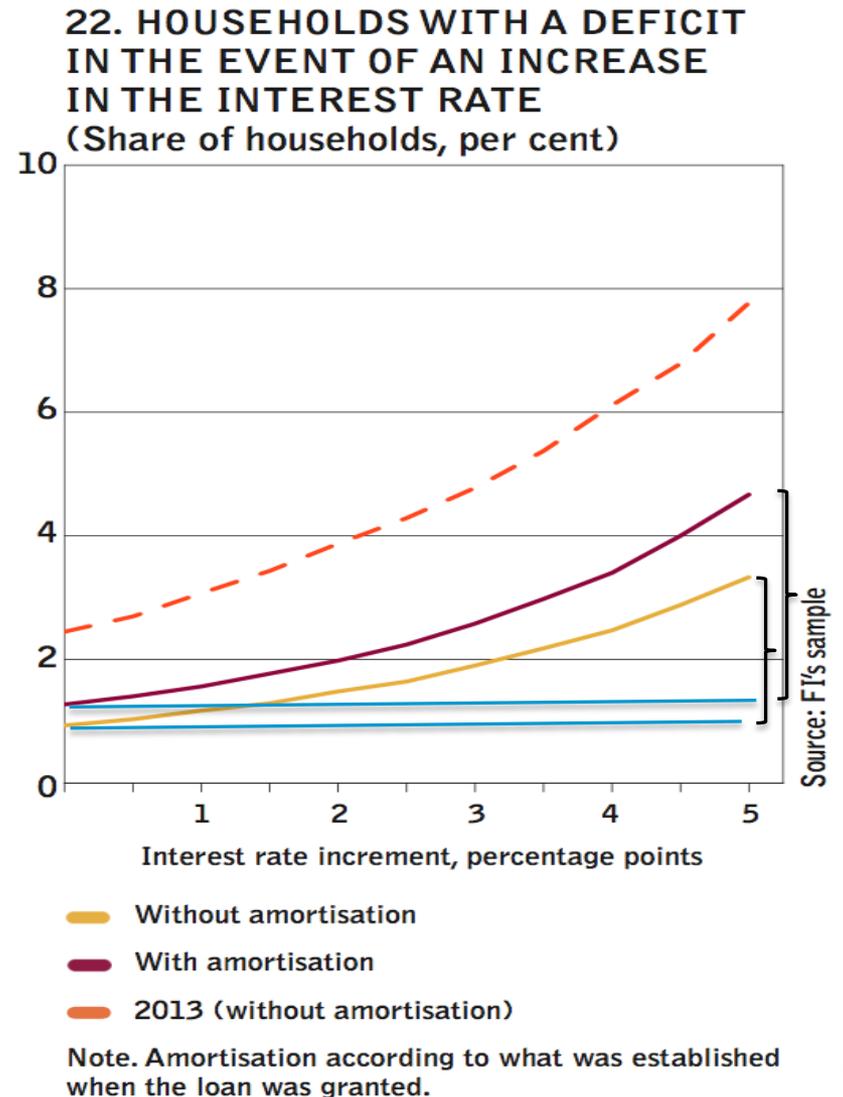
Household expected 5-yr average of rates  
and actual 5-yr lending rates



# Swedish FSA's Mortgage Market Report 2015:

## Example of a stress test

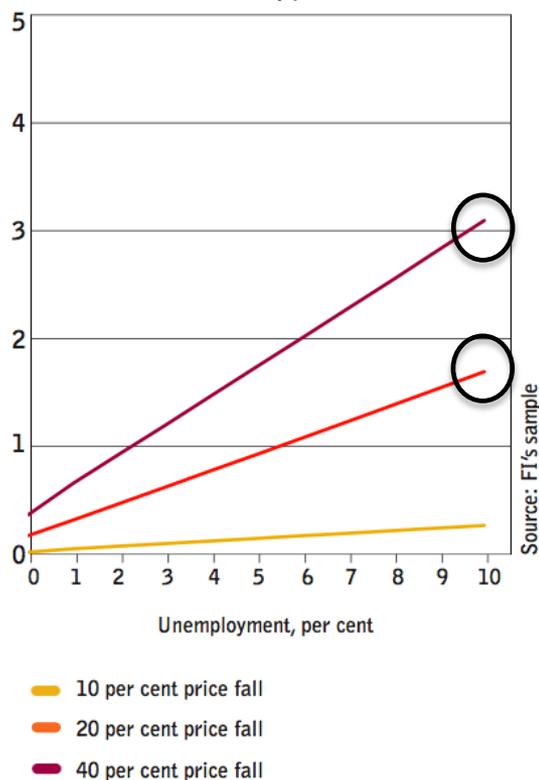
- For a given increase in mortgage rates, what share of new borrowers would then have a deficit in a left-to-live-on analysis (may have to sell)?
- Modest increase in share
- New borrowers are quite resilient
- Old borrowers are likely to be even more resilient



# Swedish FSA's Mortgage Market Report 2015:

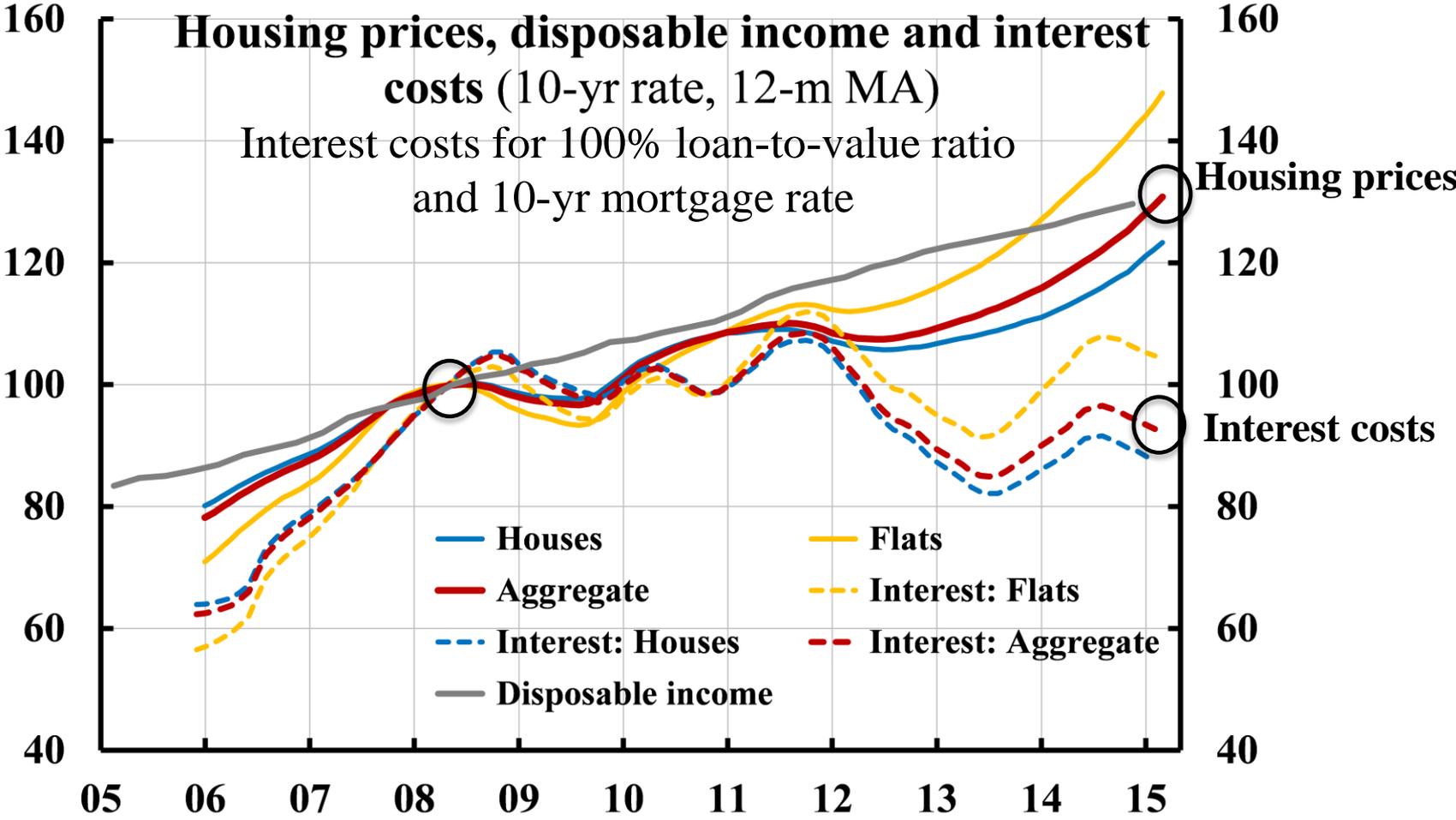
## Example 2 of stress test

24. HOUSEHOLDS WITH DEFICIT AND LTV OVER 100 PER CENT, COMBINED UNEMPLOYMENT AND FALL IN HOUSE PRICES  
(Share of households, per cent)



- Assume: (1) 10 pp increase in the unemployment rate and (2) 20% housing price fall
- Q: What share of new borrowers do then have (1) a deficit in a LTLO analysis (may have to sell) and (2) an LTV ratio > 100% (must realize a loss)?
- A: Less than 2%
- Q: What if housing prices fall by 40%?
- A: About 3%
- New borrowers are *very* resilient
- Old borrowers are likely to be even more resilient

# Swedish housing prices have increased as much as disposable income; 10-yr interest costs have fallen much below





# Extra slides

## Cost-benefit analysis 1

- Riksbank estimates MPR Feb 2014, Schularick-Taylor 2012, Flodén 2014
- Consider cost and benefit in terms of unemployment of 1 pp higher policy rate for 4 quarters
- Cost: 0.5 pp higher unemployment next few years

## Cost-benefit analysis 2

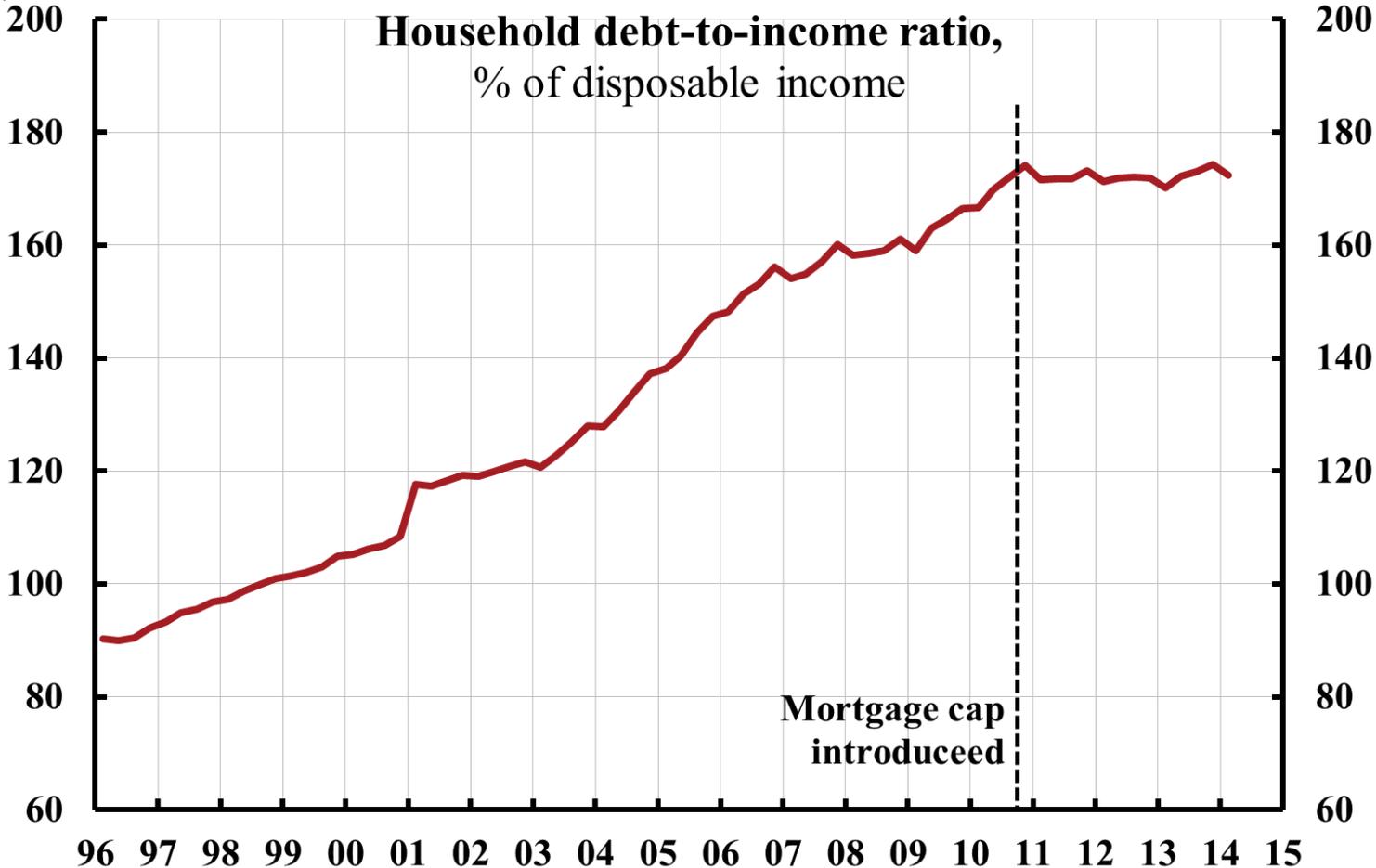
- Benefit 1: Lower probability of crisis
  - 0.25% lower real debt in 5 years (RB)
  - 0.02 pp lower probability of a crisis (ST), 5 pp higher unemployment in crisis (RB)
  - 0.001 pp lower expected future unemployment
- Benefit 2: Lower increase in unemployment in crisis
  - 0.44 pp lower DTI in 5 years (RB)
  - 0.009 pp lower increase in unemployment in crisis (Flodén)
  - Assume high probability 10% of crisis (ST 4%)
  - 0.0009 pp lower expected future unemployment
- Total benefit: 0.0019 pp lower expected future unemployment

## Cost-benefit analysis 3

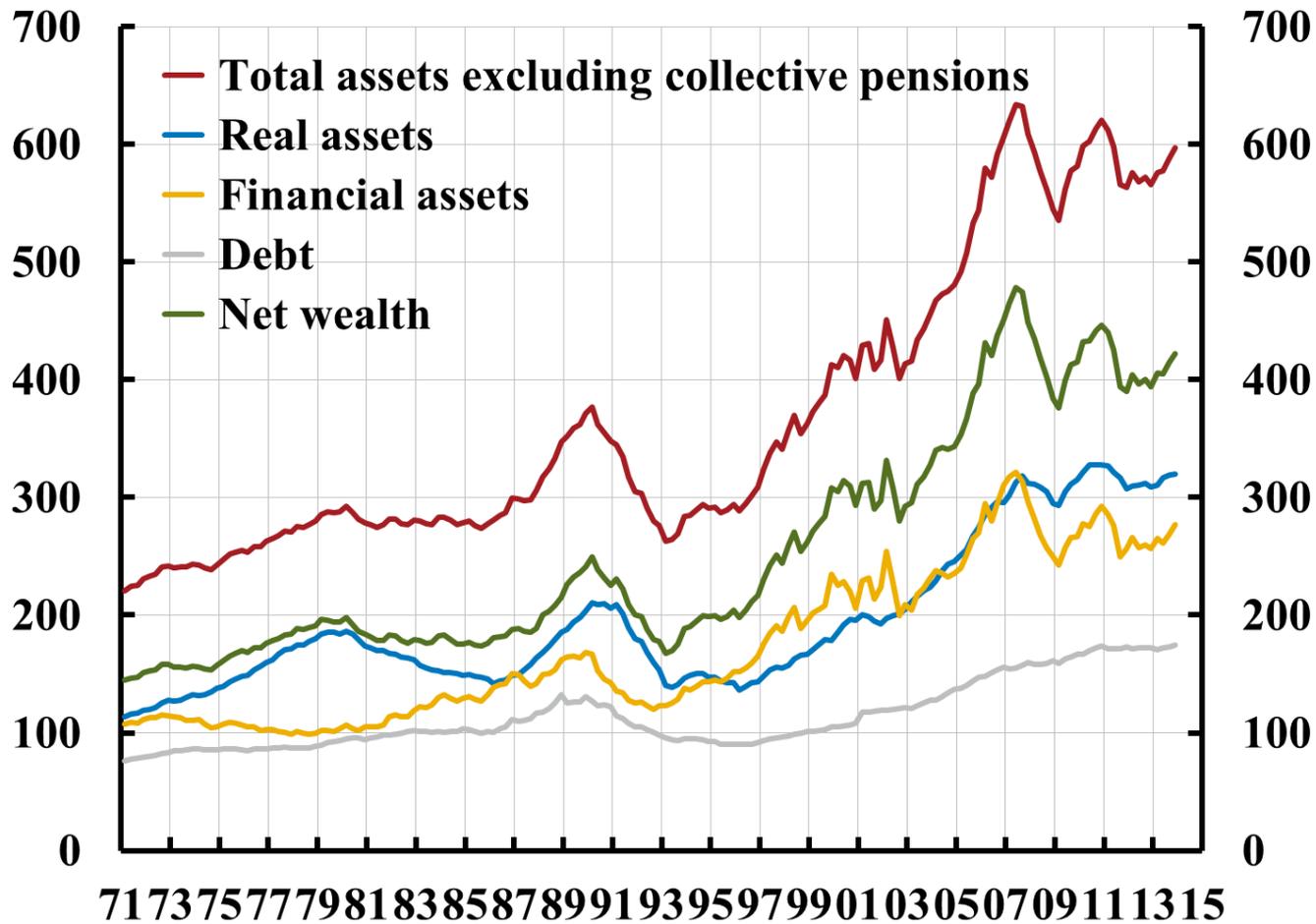
- Benefit: 0.0019 pp lower expected future unemployment
- Cost: 0.5 pp higher unemployment next few years
- **Benefit/Cost  $\approx 0.4\%$**
- **Cost/Benefit  $\approx 250$**
  
- Additional cost: Inflation below households' expectations increases real debt burden
- The real value of a given nominal debt taken out in Nov 2011 is now more than 6 percent lower than if inflation had been 2%

# Household debt-to-income ratio

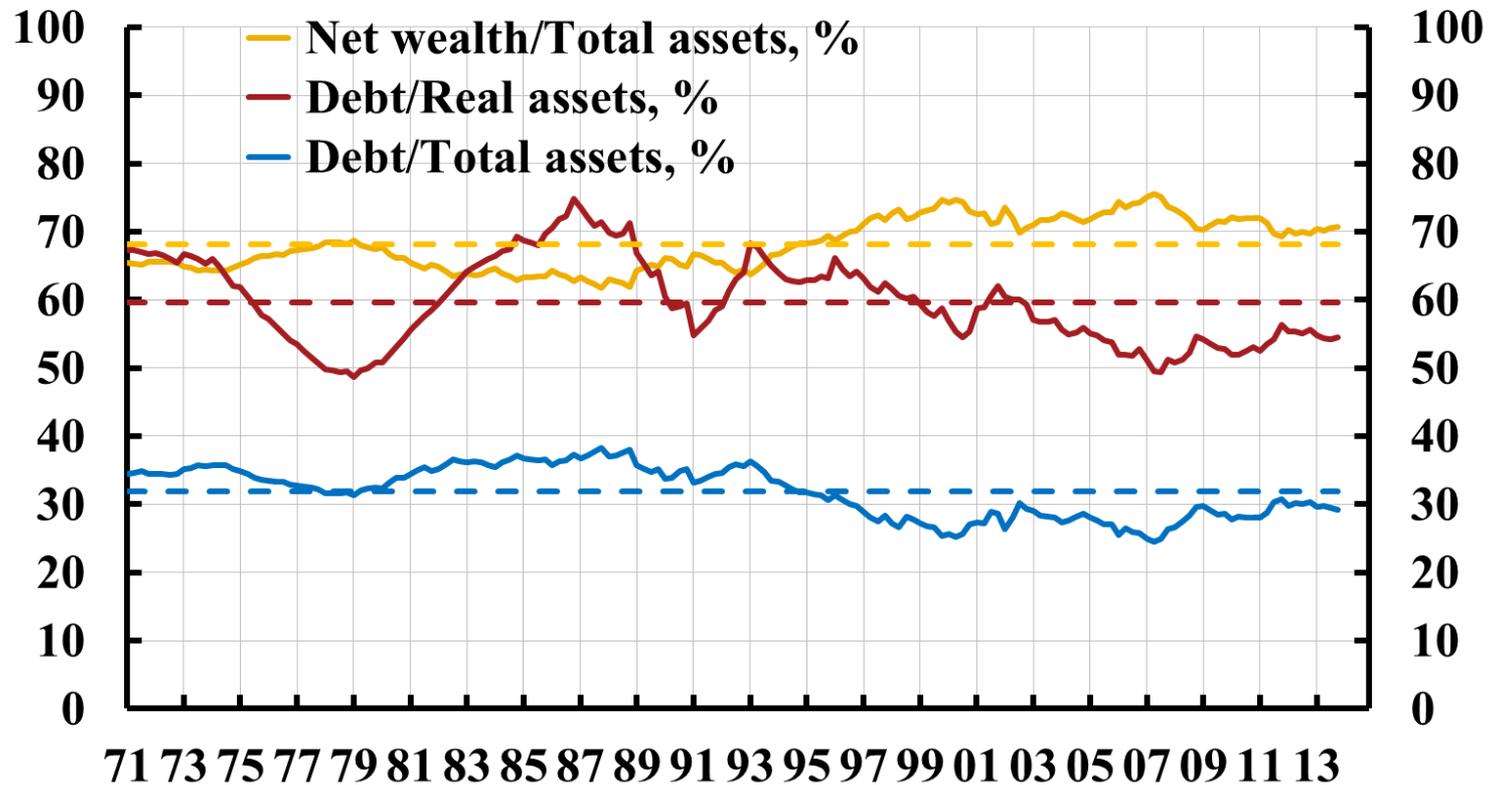
(% of disposable income)

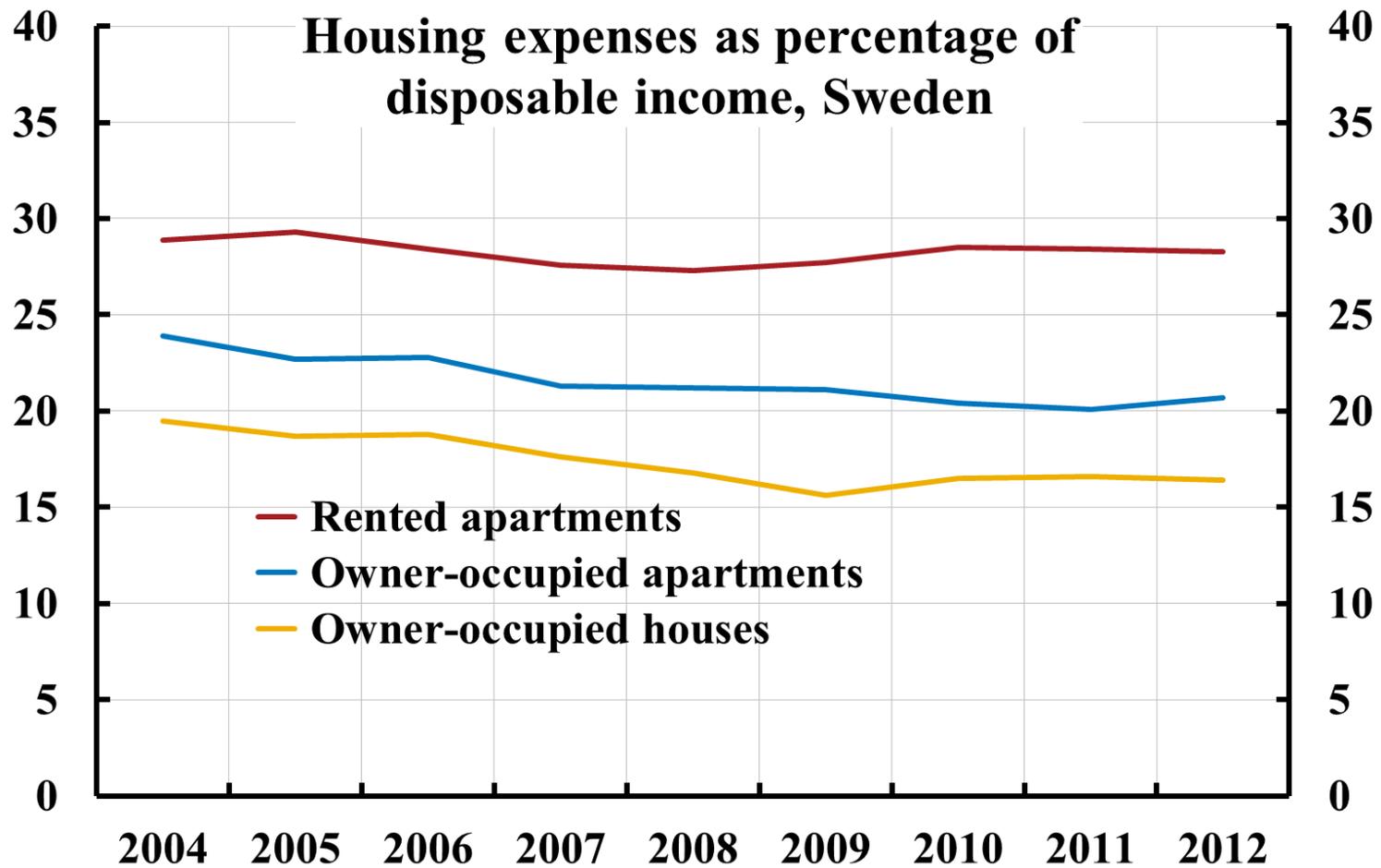


# Household debt and assets (excluding collective pensions), % of disposable income

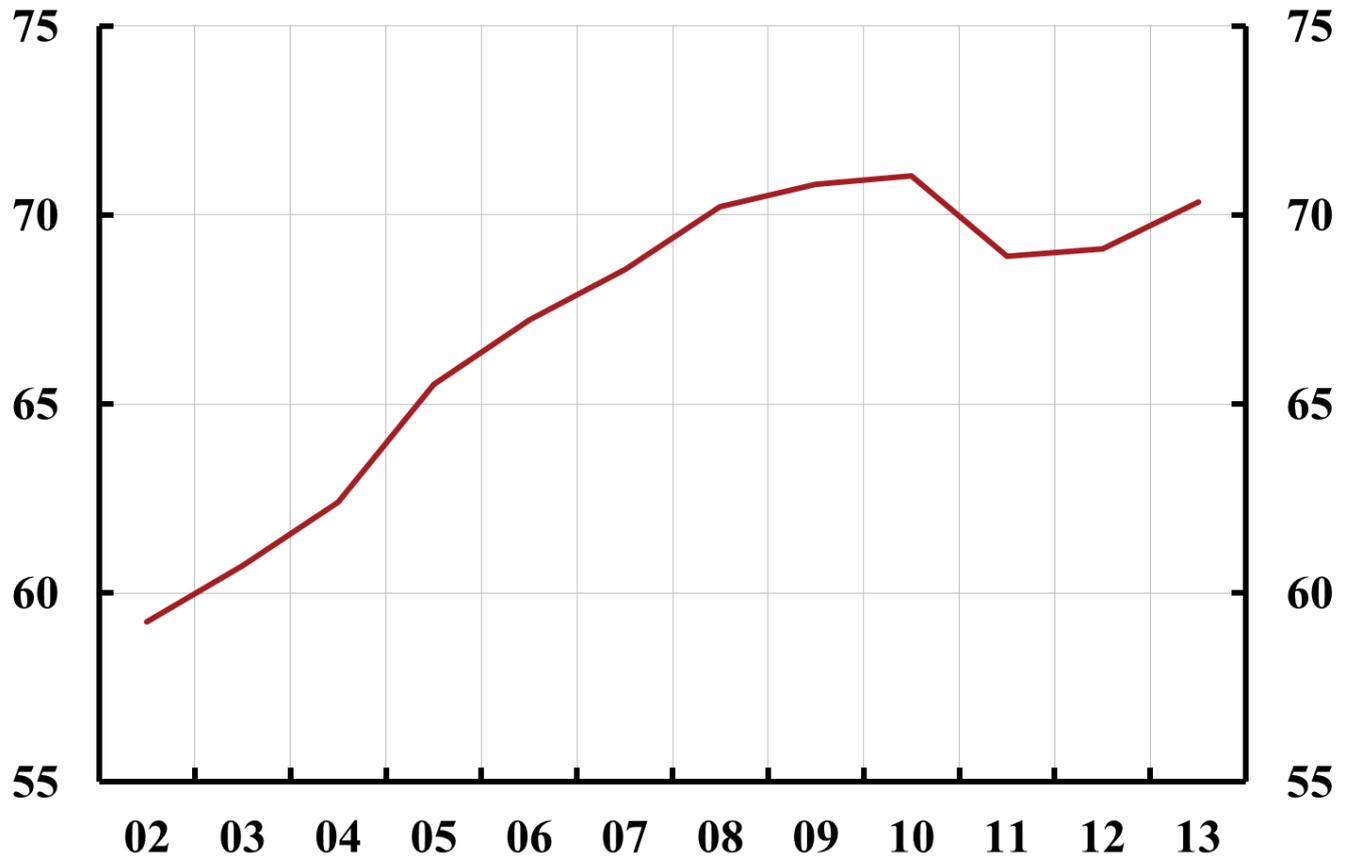


## Swedish households' net wealth and debt relative to assets

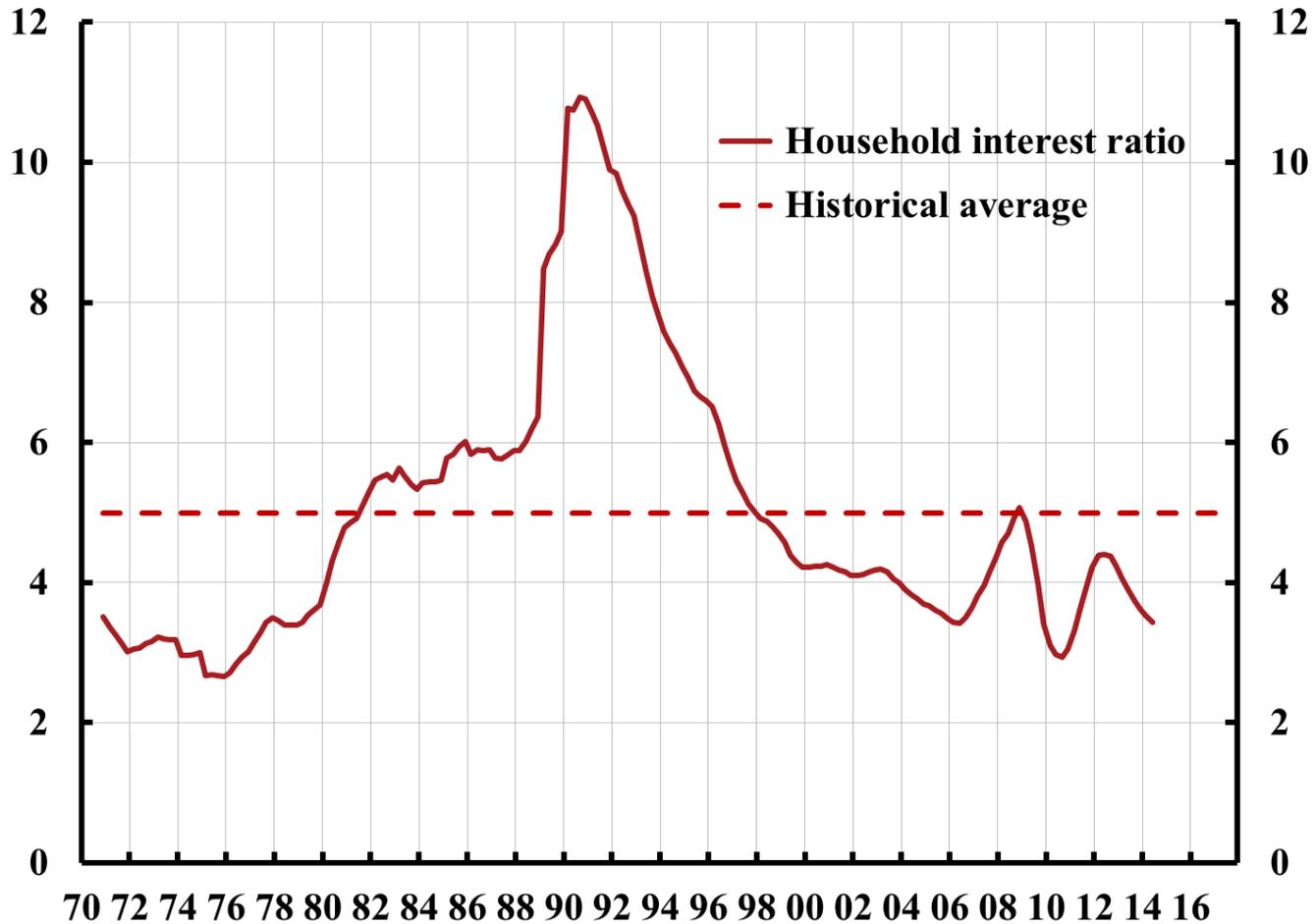




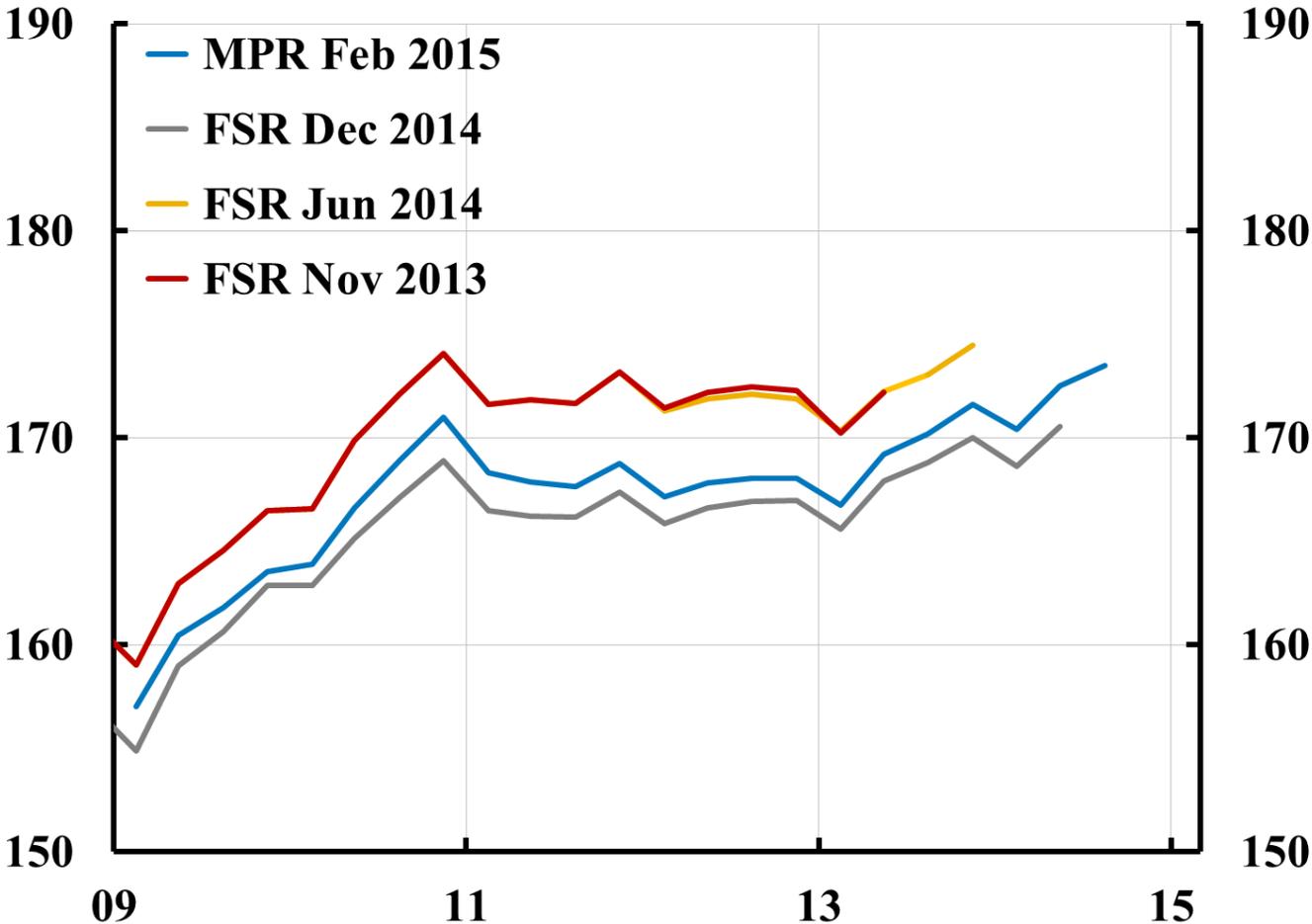
### Loan to value, new mortgages, %

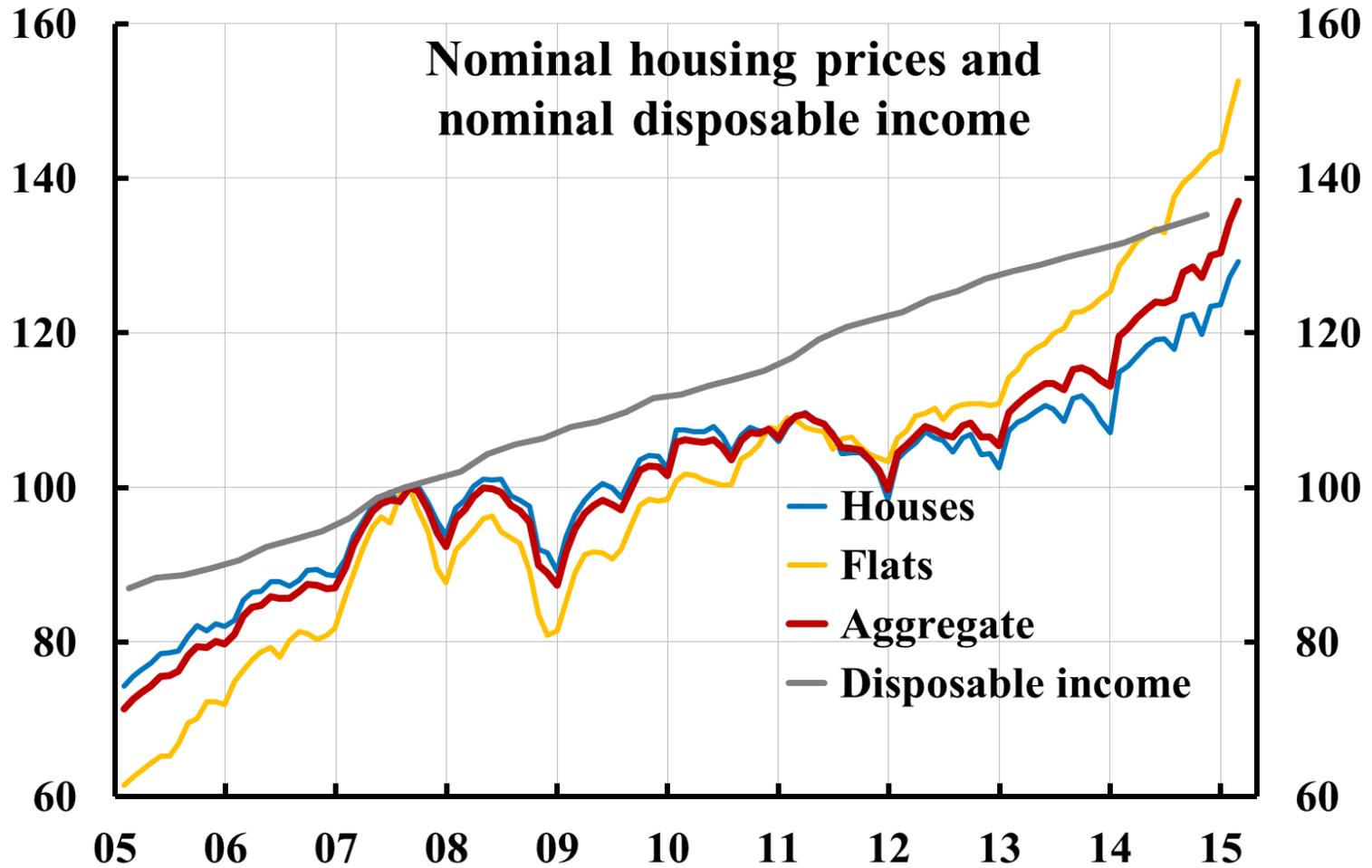


# Household interest payments, % of disposable income

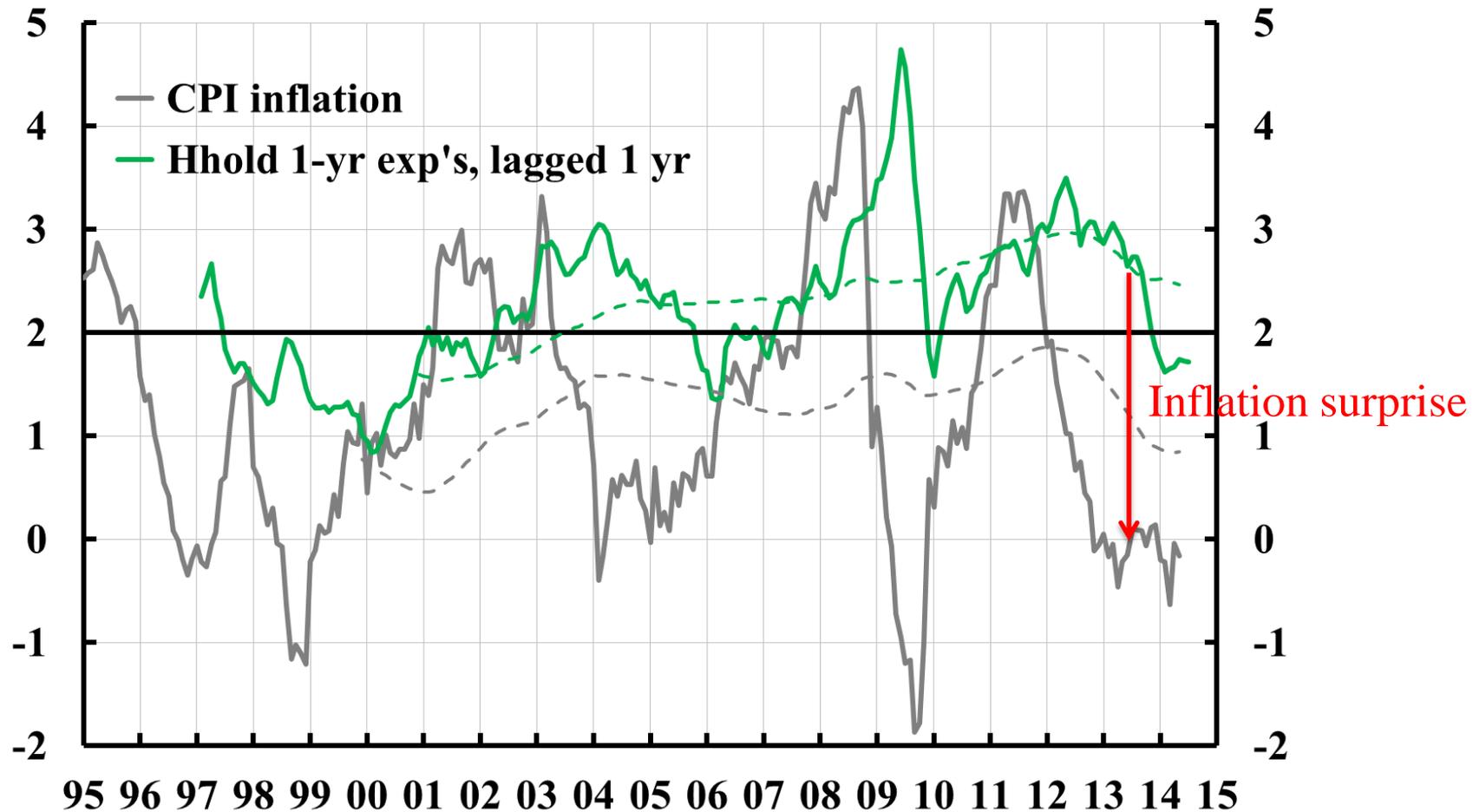


# Household debt ratio, data revisions



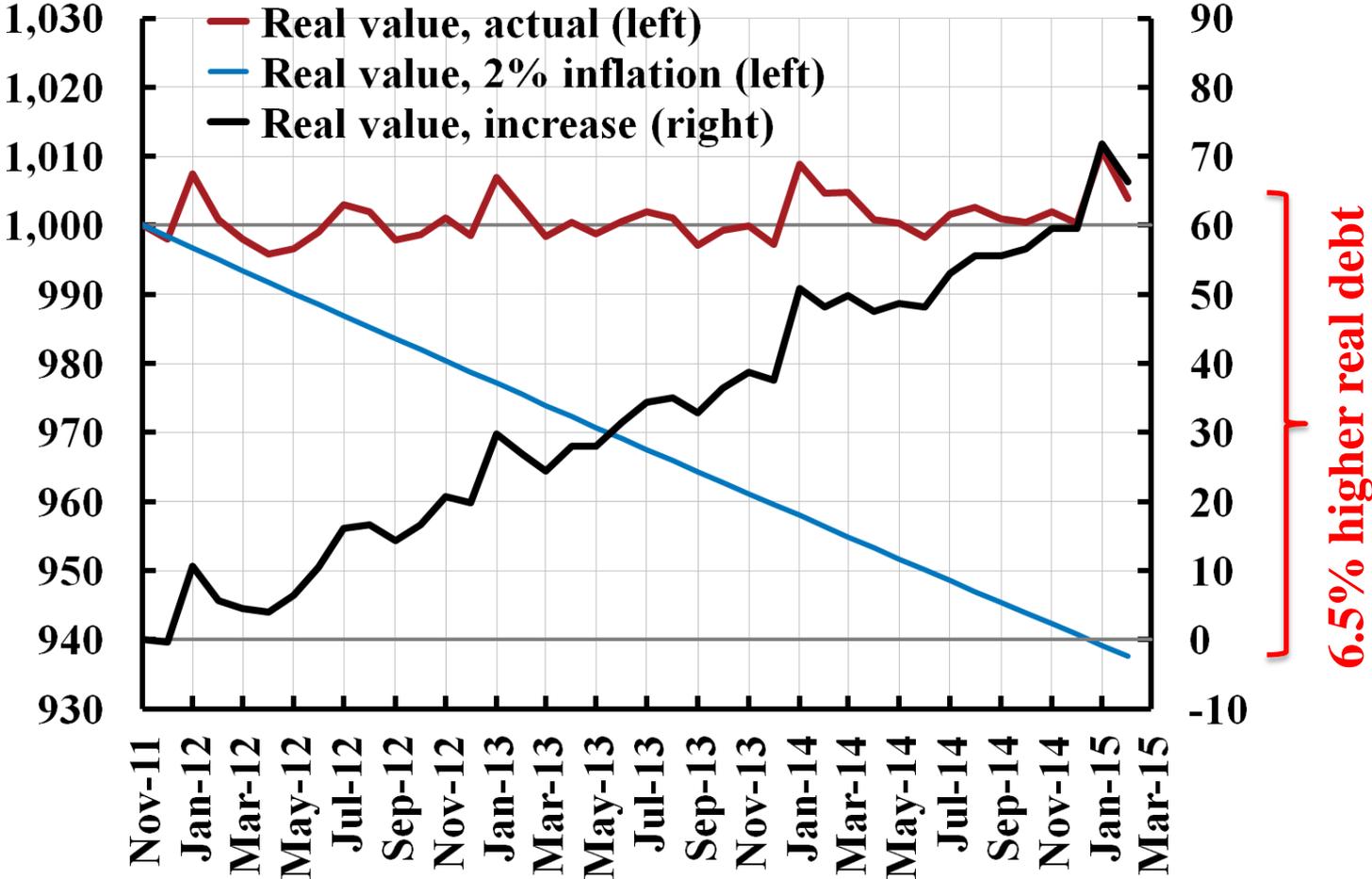


# Inflation below household's expectations



Note: Dashed lines are 5-year trailing moving averages

# The real value of an SEK 1 million loan taken out in Nov 2011, actual and for 2 percent inflation



**Percent increase to February 2015 in the real value of a given loan, compared to if inflation had been 2 percent (depending on when the loan was taken out)**

