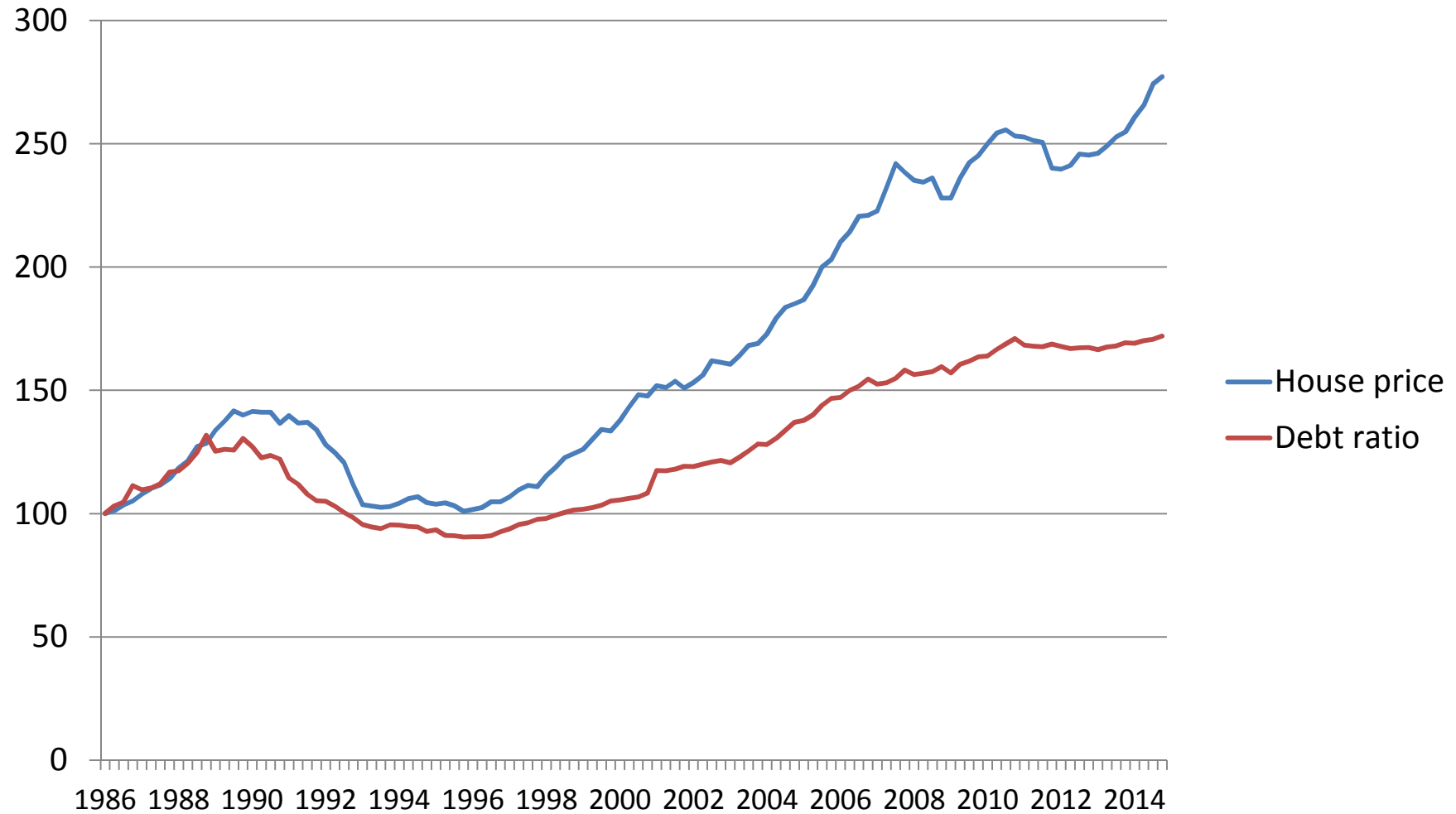


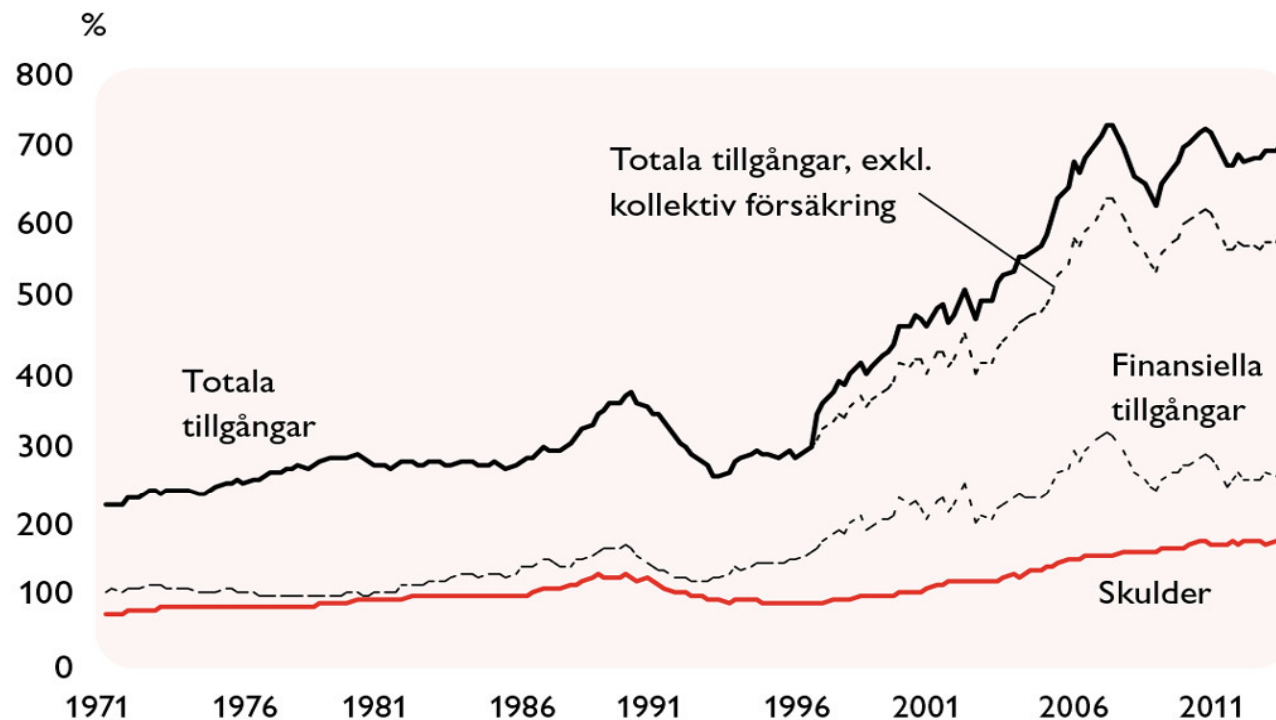
# Household debt and house prices in Sweden

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Stockholm School of Economics  
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# Real house price index and ratio of household debt to disposable income have increased



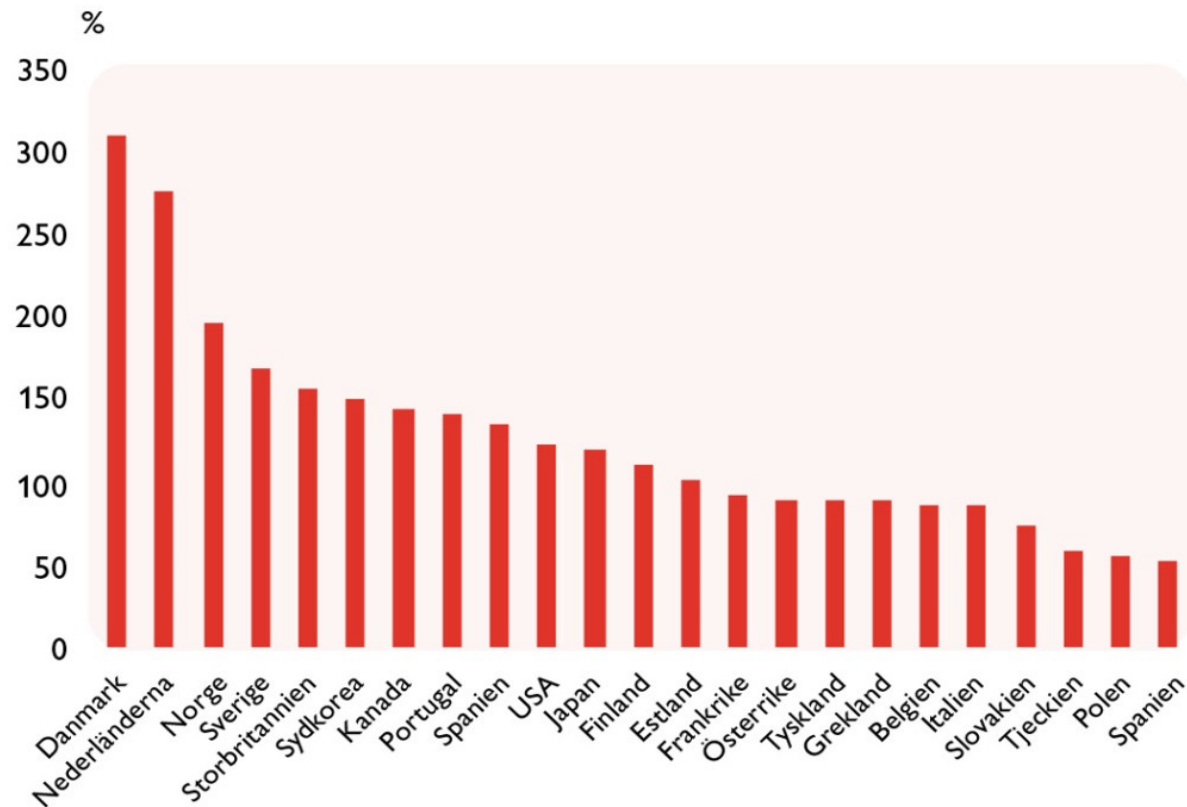
# Ratio of debt to assets has been roughly constant



**Figur 4.4** Hushållens tillgångar (inklusive bostäder, men exklusive kollektiva försäkringar) och skulder i procent av disponibel inkomst, 1971–2013.

Källa: Riksbanken, *Finansiell stabilitet*, 2014:1, Diagram 3:8, och SCB, Sparbarometern.

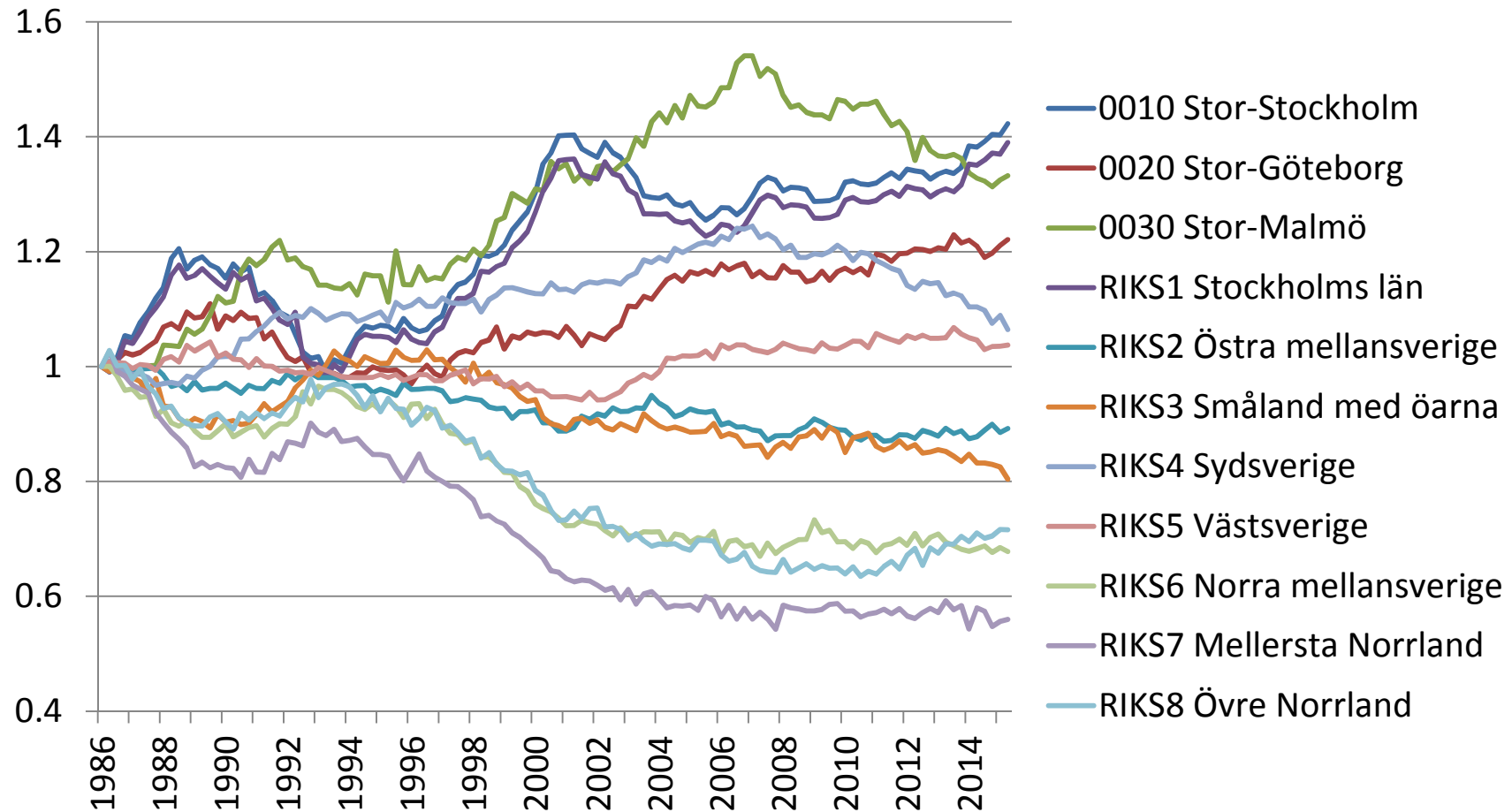
Household debt-to-income ratio is higher than in most other countries (but not debt-to-GDP)



**Figur 4.2** Hushållens skulder i procent av disponibel inkomst, 2010.

Källa: OECD.

# Regional price development relative to national average



# Explanations

- Increased home ownership; conversion of rental units to shares in coop associations (bostadsrätter)
- Rent control => ownership only way into housing market.
- Housing shortage => high house prices
- Low interest rates.
  
- Little evidence of credit supply effects.

# Why worry?

- Bank credit risk
  - With full-recourse loans the risk is small, unless as an indirect effect of a macroeconomic crisis.
- Potential feedback on aggregate demand from interest increases.
- Potential feedback on aggregate demand from falling house prices
  - Bursting "bubble"
  - Fundamental factors
    - Housing supply
    - Income/unemployment
    - Interest rates
    - Taxes.
- Feedback effects depend on distribution of debt and assets.

# Housing bubble?

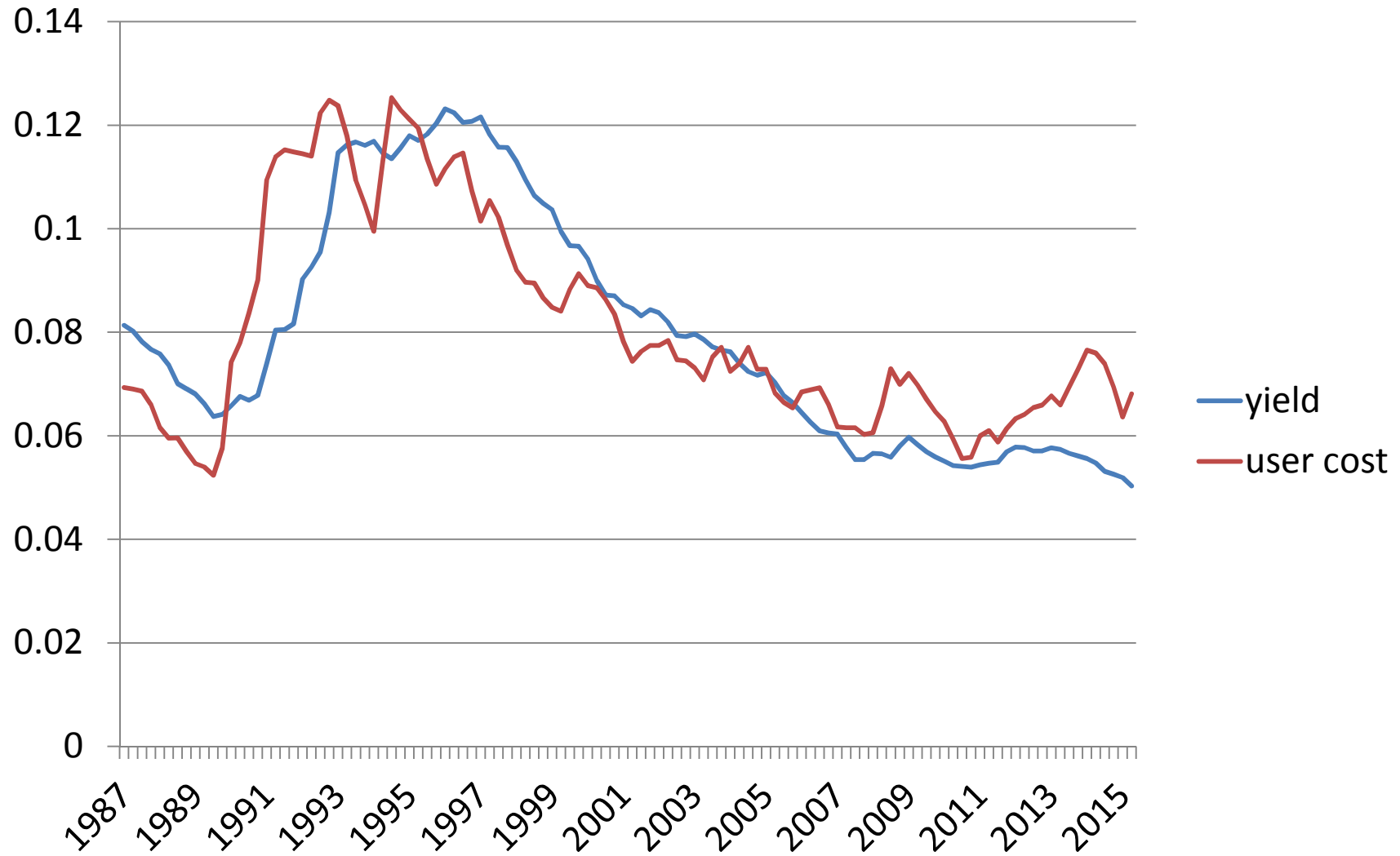
How well does the simplest steady-state PDV-calculation (“Gordon’s formula”) track house prices?

$$\mathbf{Yield = User\ cost}$$

$$\begin{aligned} & \text{Value of housing service (rent)/price} = \\ & = \text{after-tax cost of capital} + \text{property tax} + \text{maintenance} \\ & \quad \text{and operating costs} - \text{expected rent growth.} \end{aligned}$$



# Yield = user cost?



# Crucial assumptions

- Value of owner-occupied housing services = apartment rents?
- Expected value growth = expected CPI-inflation?
  - High prices due to supply shortage should induce expectations of falling prices.
  - But increasing real land prices even in the long run.
- Discounting by 10-year mortgage interest rate?
  - Longer interest rates
  - Credit constraints
- Unchanged tax system?
- Steady-state?

# Difference between fraction of households expecting rising house prices and those expecting falling prices

(Source: SEB Boprisindikatorn)



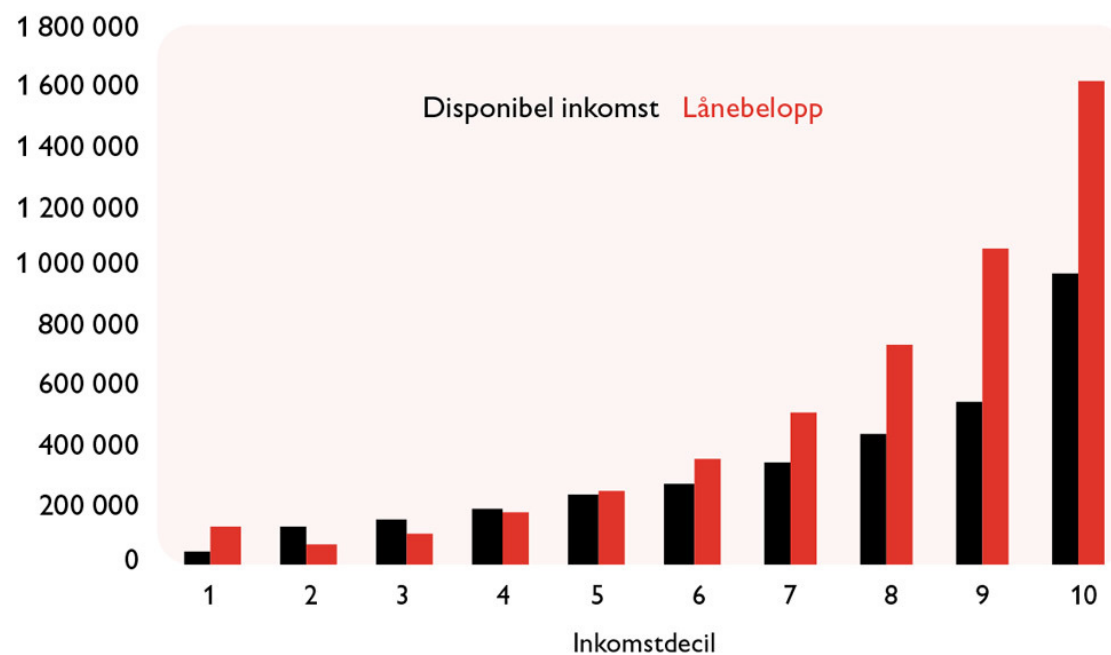
# Tentative conclusion

- Not clear that house prices have increased more than could be explained by "fundamentals"
  - Lower interest rates, reduced taxes, attractiveness of major metropolitan areas and lagging supply response.
  - Some caveat for recent trend in price expectations.
  - Little sign that house prices have been driven by increased credit supply.
- Still some reason to believe that house prices will fall over the medium term when supply eventually increase.

# Distribution matters

- With full-recourse loans, households carry all risk.
  - They will meet negative shocks by selling assets and/or cutting consumption.
    - Income shocks and interest shocks; tend to offset each other
    - Household response depends on their margins.
  - House price shocks may lead to negative equity and cause lock-in effects.
    - Further price effects since young households – on their way up in the housing career – are more likely to be credit constrained.
- Poor Swedish micro data.

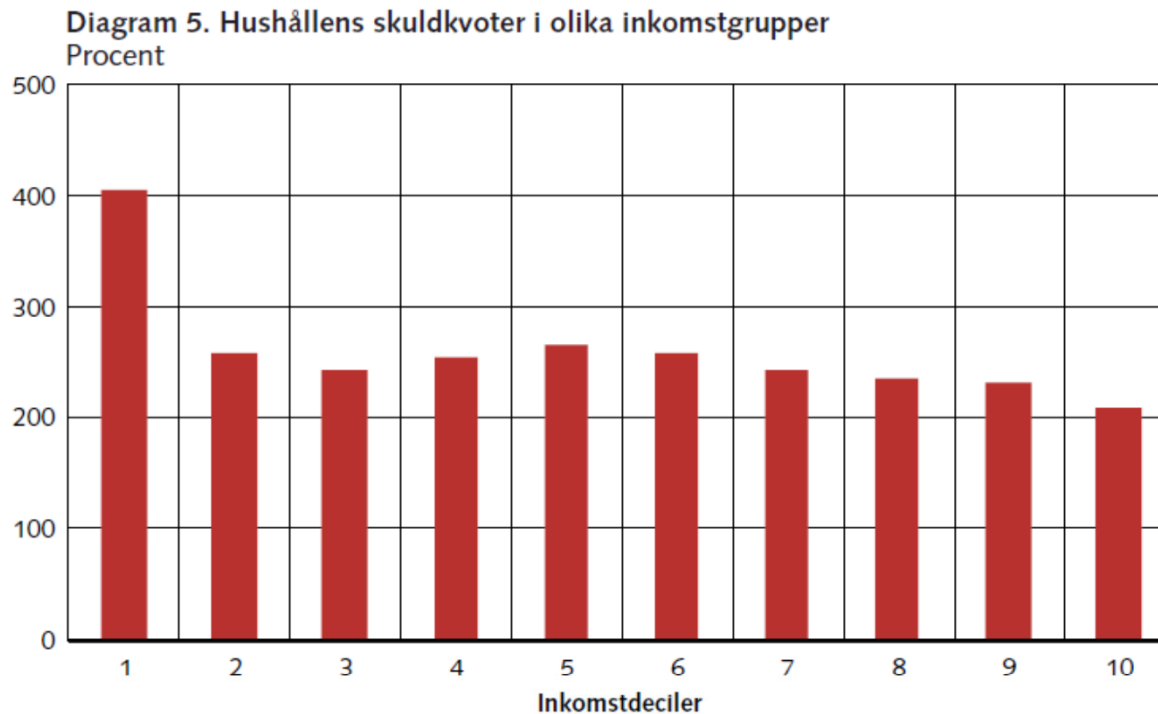
# Mean disposable income and debt by income decile



**Figur 4.5** Genomsnittlig disponibel hushållsinkomst och lånebelopp per inkomstdecil, 2011.

*Källa:* SOU 2013:78, tabellbilaga, tabell 5.

# Debt-to-income ratios per income decile, conditional on having a loan

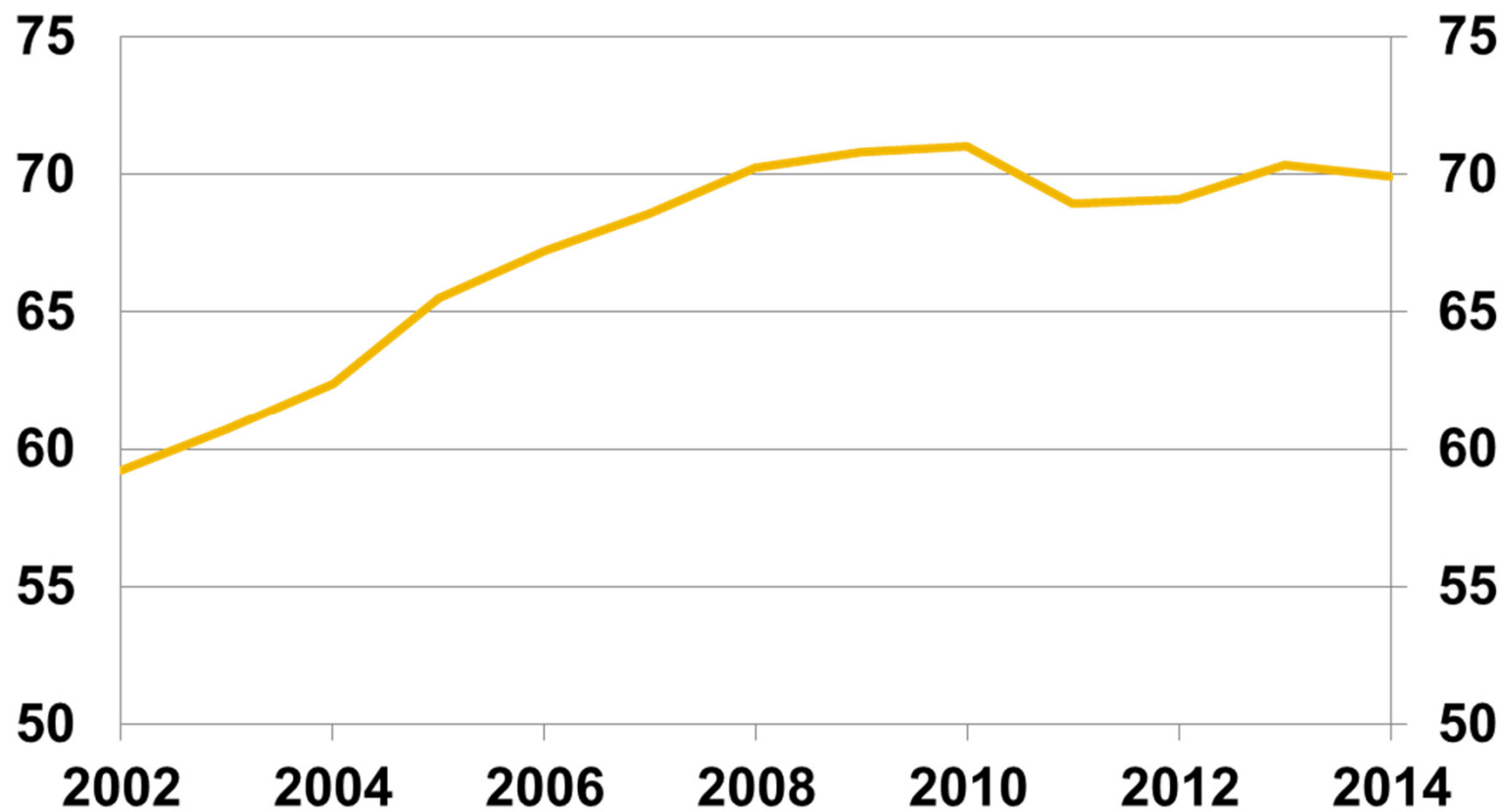


Anm. Data från juli 2013. Den genomsnittliga disponibla inkomsten för hushållet var följande i respektive inkomstdecil; 1: 106 518 kr, 2: 186 745 kr, 3: 237 848 kr, 4: 288 675 kr, 5: 346 009 kr, 6: 400 582 kr, 7: 451 640 kr, 8: 510 268 kr, 9: 598 591 kr, och 10: 970 366 kr. Skuldkvoten är beräknad som den genomsnittliga skuldkvoten i varje inkomstdecil. Se Bilaga 2 för beskrivning av hur data har hanterats och Bilaga 3 för deskriptiv statistik.

Källa: Riksbanken

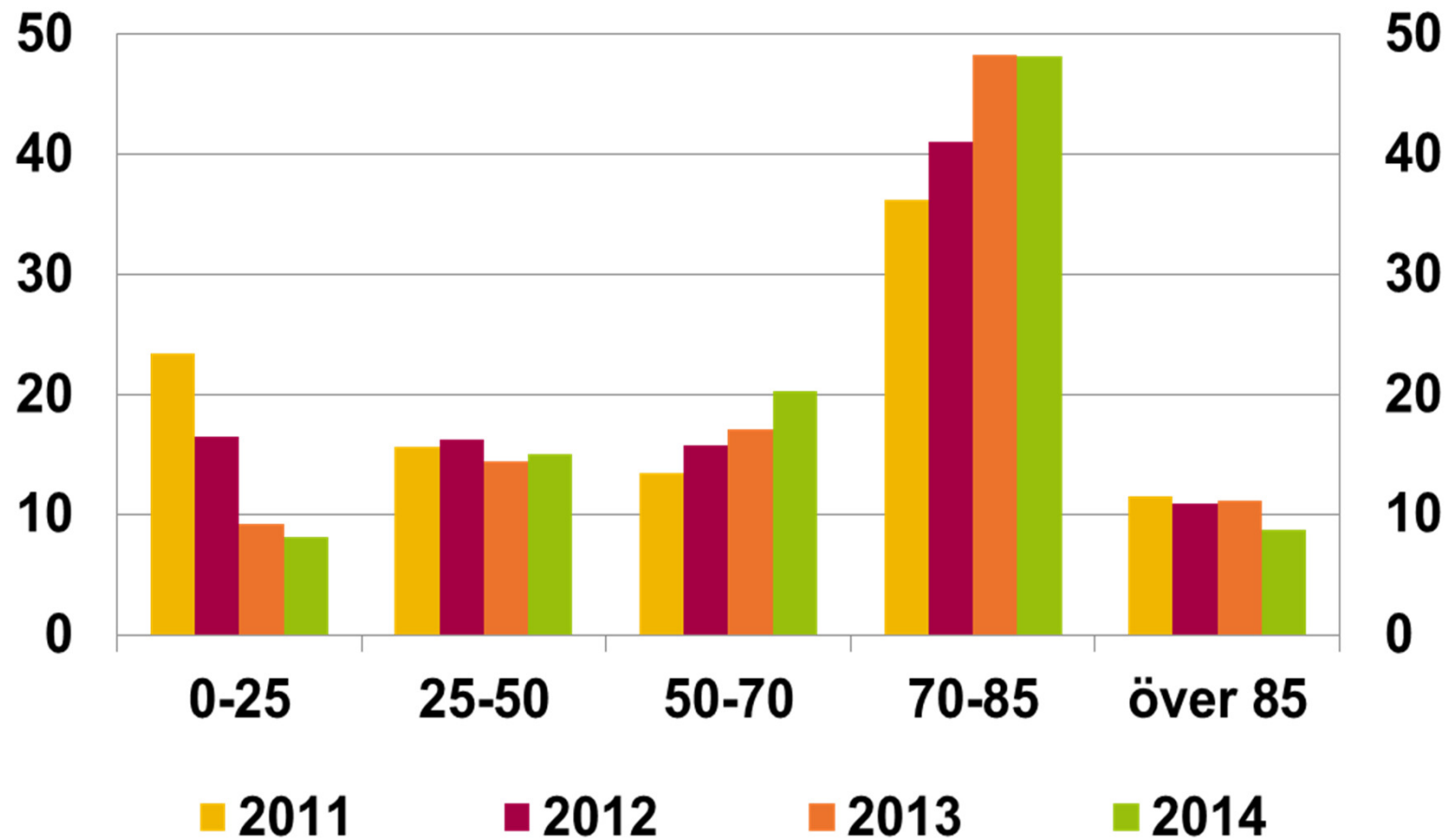
# Mean loan-to-value ratio, new mortgages

(Source: Finansinspektionen)





# Distribution of LTV ratios, new loans



## Tentative conclusions on distribution

- Little evidence that debt is concentrated among households with small margins.
- Some evidence of an increasing fraction of households close to their borrowing constraints.
- This suggests limited risk of dramatic consumption responses to negative income and interest shocks.
- But it suggests that feedback effects from credit constraints may amplify negative shocks to house prices.
- **But, poor micro data.**