



The House Price Index and its development from mean price thru Repeat Sales to SPAR

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Kadaster International

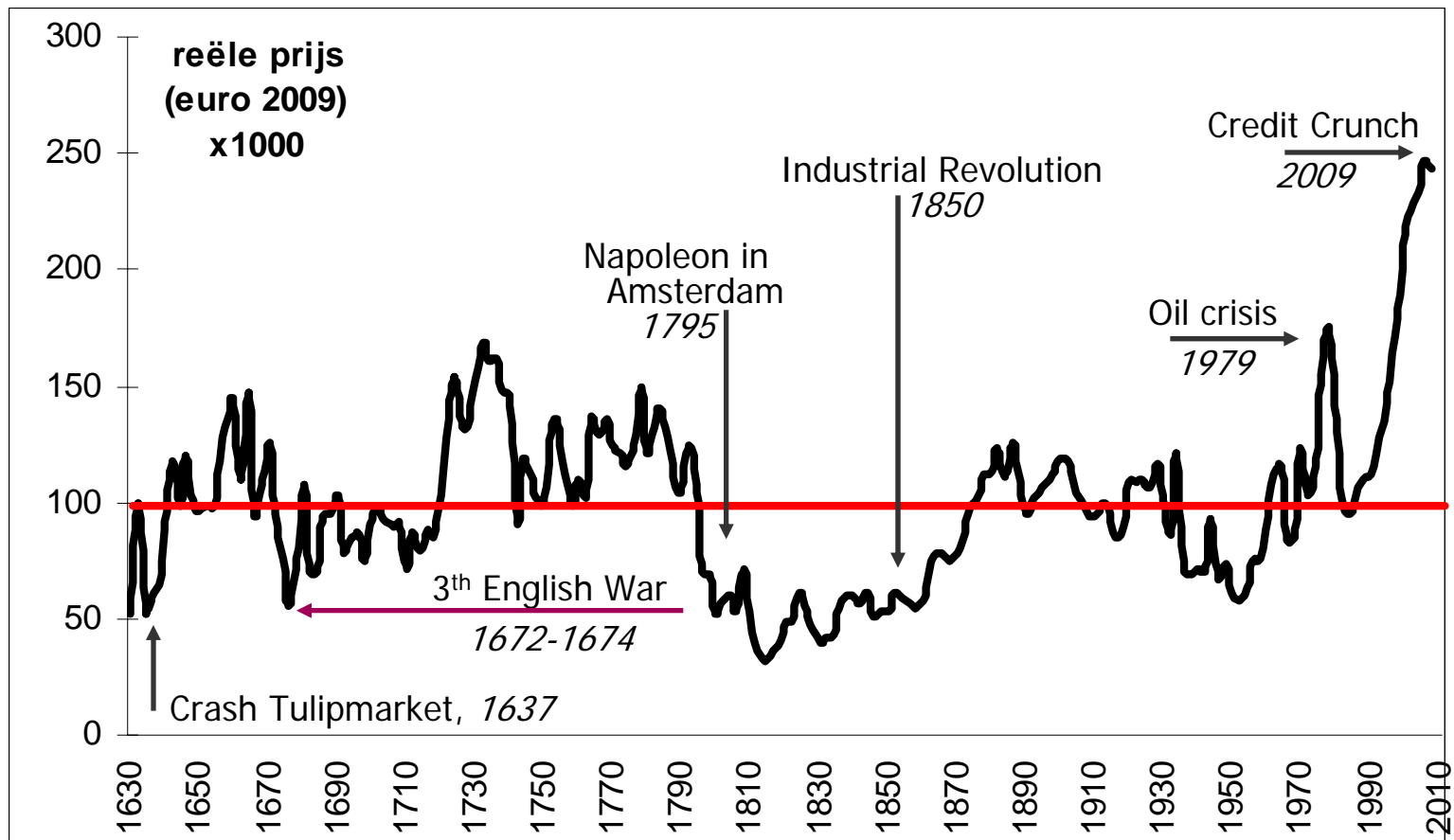
November 29 – December 3, 2009



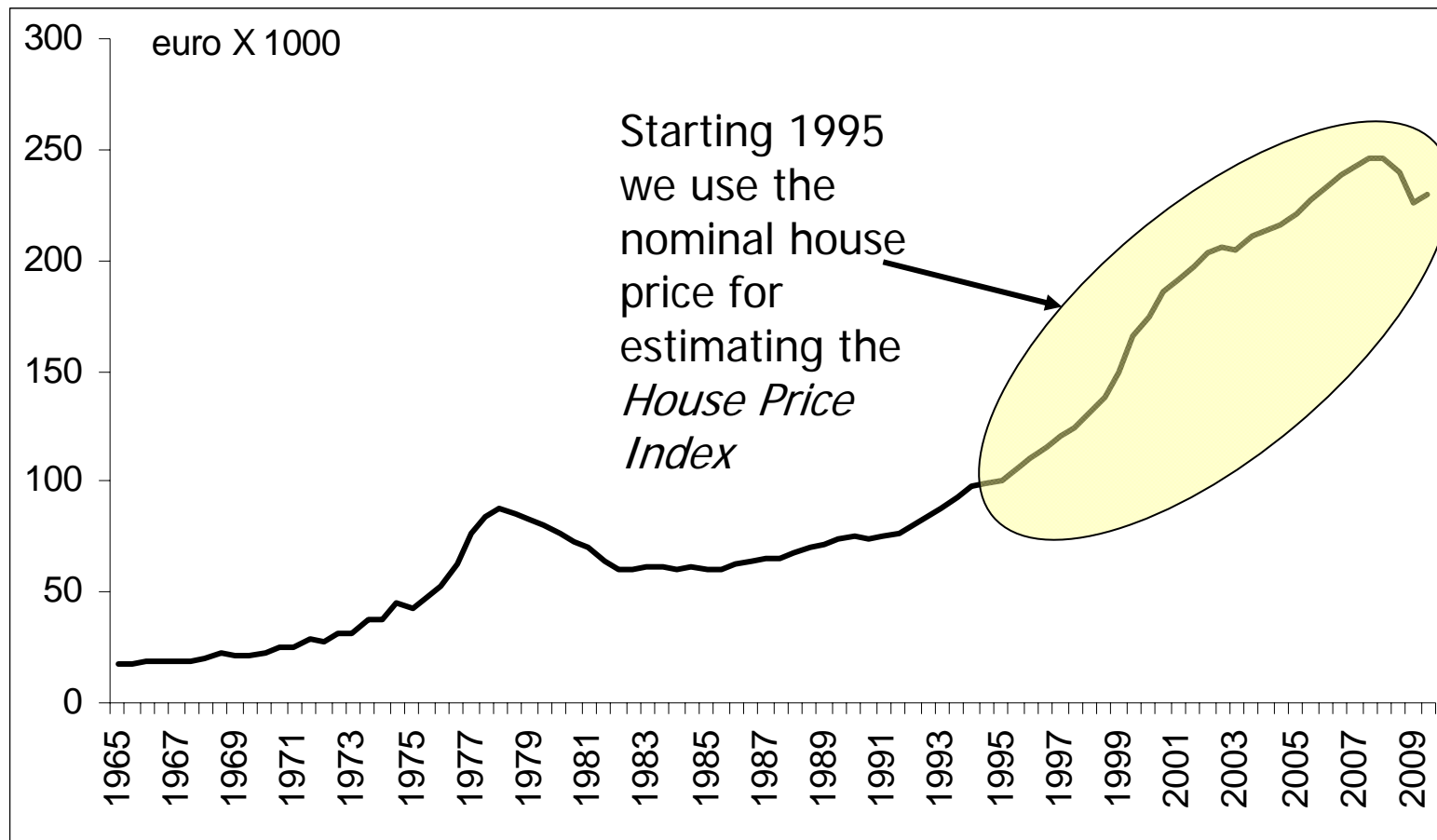
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OTB Research Institute for the Built Environment

CBS, Statistics Netherlands

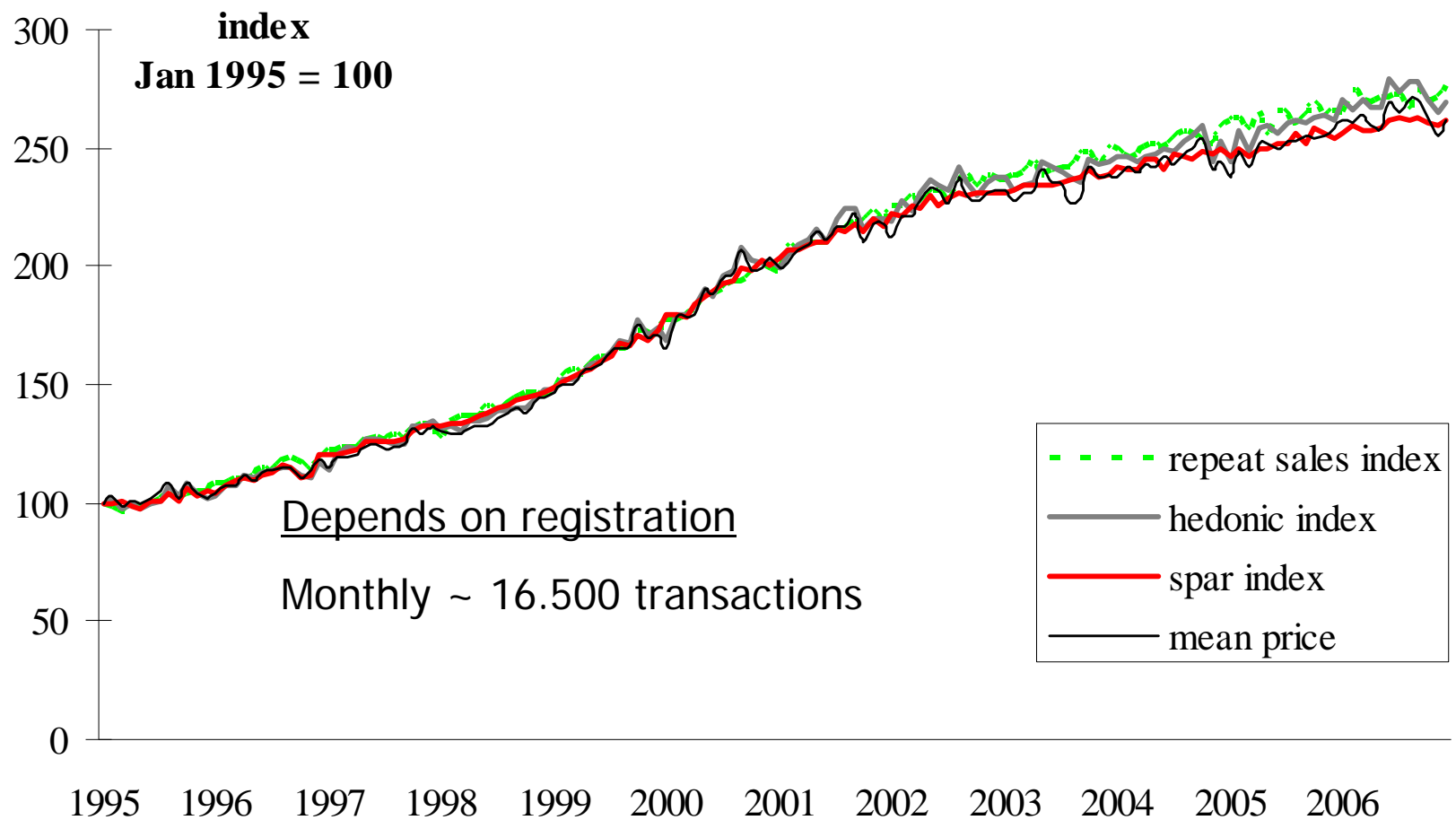
Starting 1628



Nominal House Price



House Price Index



Outline

- Aim
- 2005: Mean Price to Repeat Sales Index (RSI)
- 2008: RSI to Sales Price Appraisal Index (SPAR)
- Comparison Hedonics – RS – SPAR



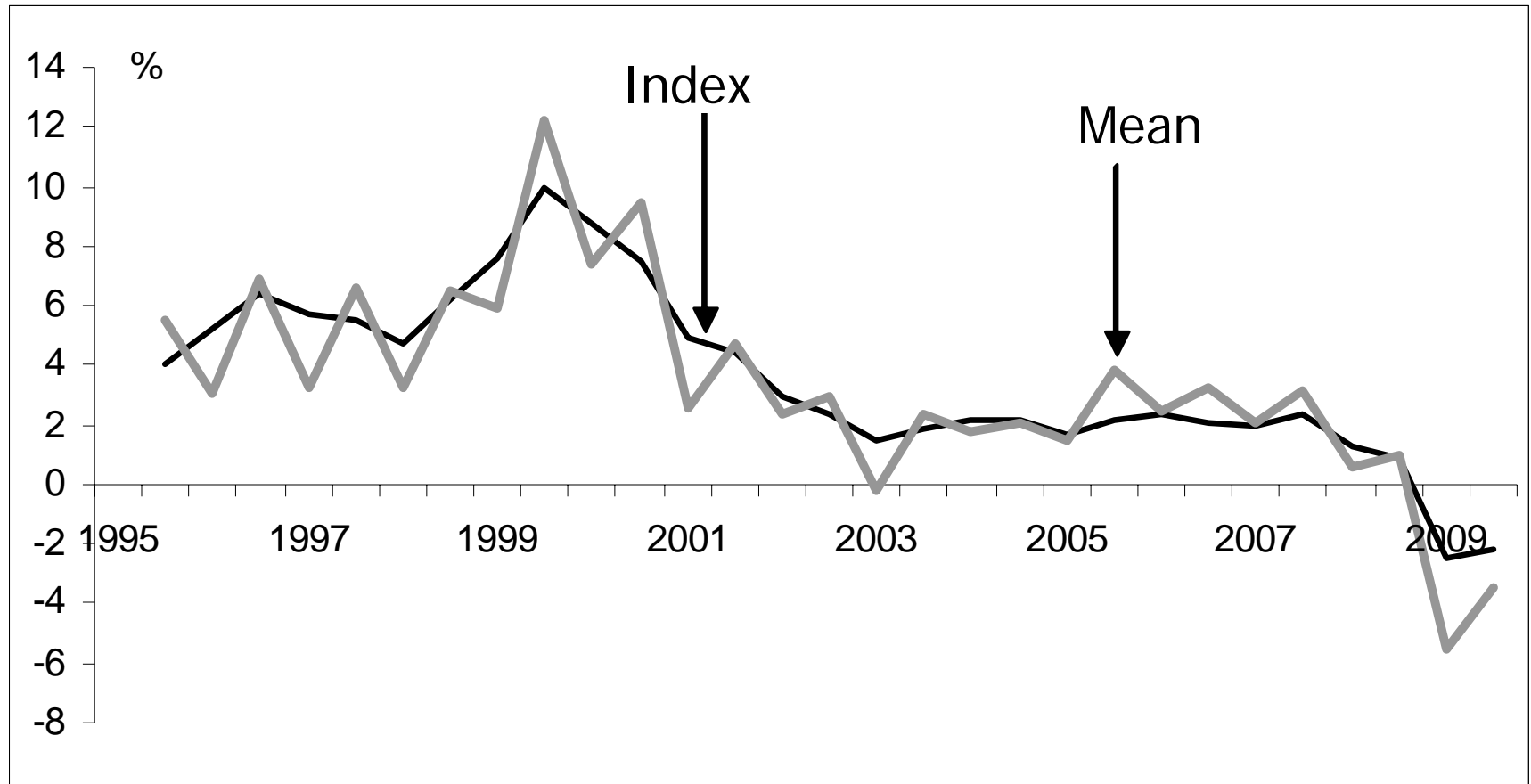
Aim

Aim of the index: the actual house price

- **Dutch Central Bank:**
 - No trust in common summary methods;
 - Valuation portfolios: Haircut 25% by Price Rise;
 - Thus: actual house price too low and higher reserve for mortgage risk;
 - Solution: House Price Index for the housing market.



Mean price and the Index



Hedonic regression

Hedonic Valuation Process

Observed
House Quality
House Price

Sold or
On-the-Market

Hedonic regression

- 'some' characteristics
- House Price

Estimated
House Price

All properties



2005
Repeat Sales Index

Data Dutch Land Registry Office (Kadaster)

- Actual (delay: two weeks)
 - Complete (all transaction)
 - Less characteristics (only type)
 - Only existing homes (no new dwellings)
-
- 2005:
 - Given the data, we chose the Repeat Sales Model for calculation the index



Why Repeat Sales

Based on

- Price for single property at different points in time

Literature

- Bailey *et al.* (1963); Case and Shiller (1987, 1989, 1990)

Practice

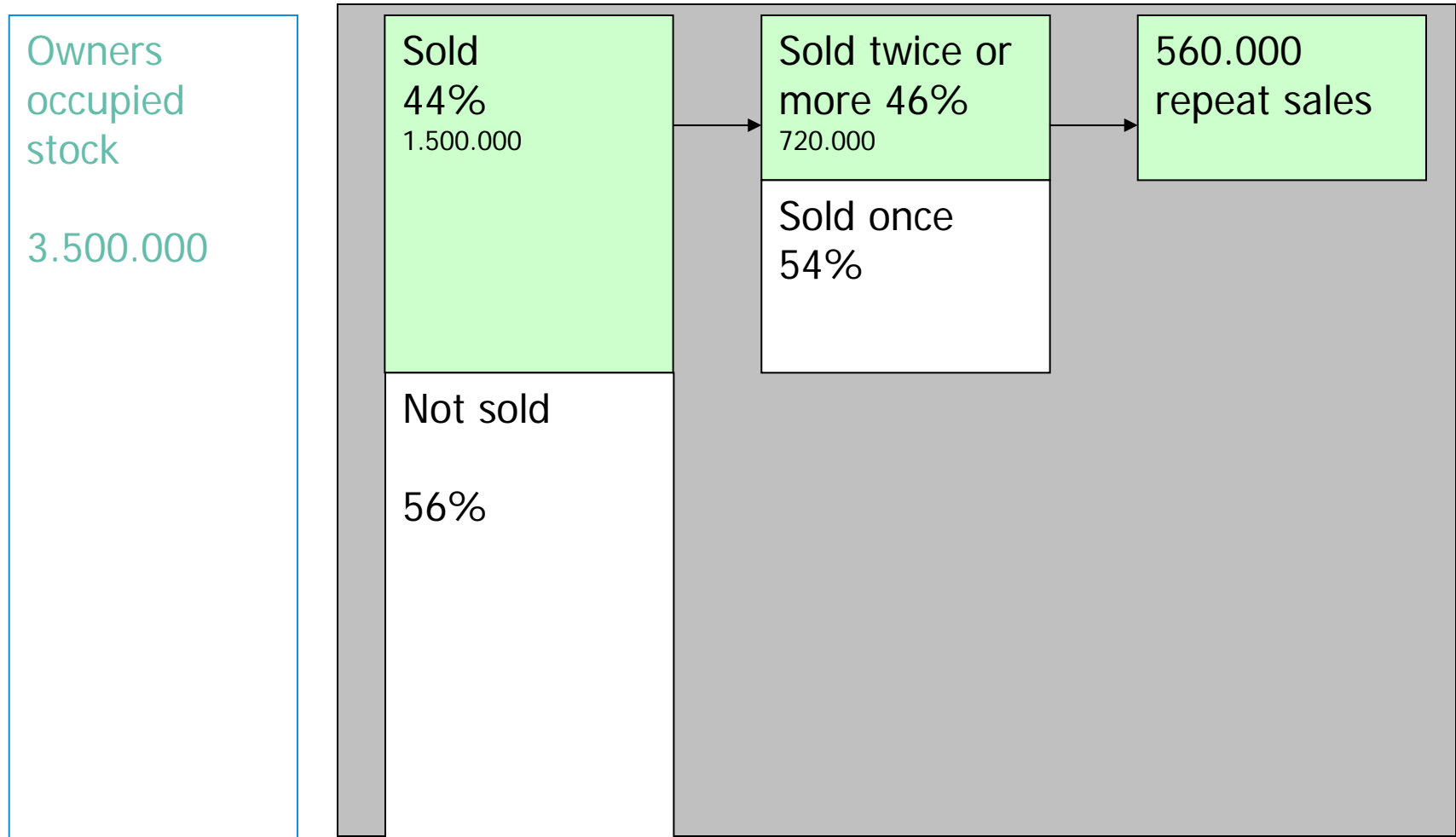
- OFHEO House Price Index (USA)

Problem

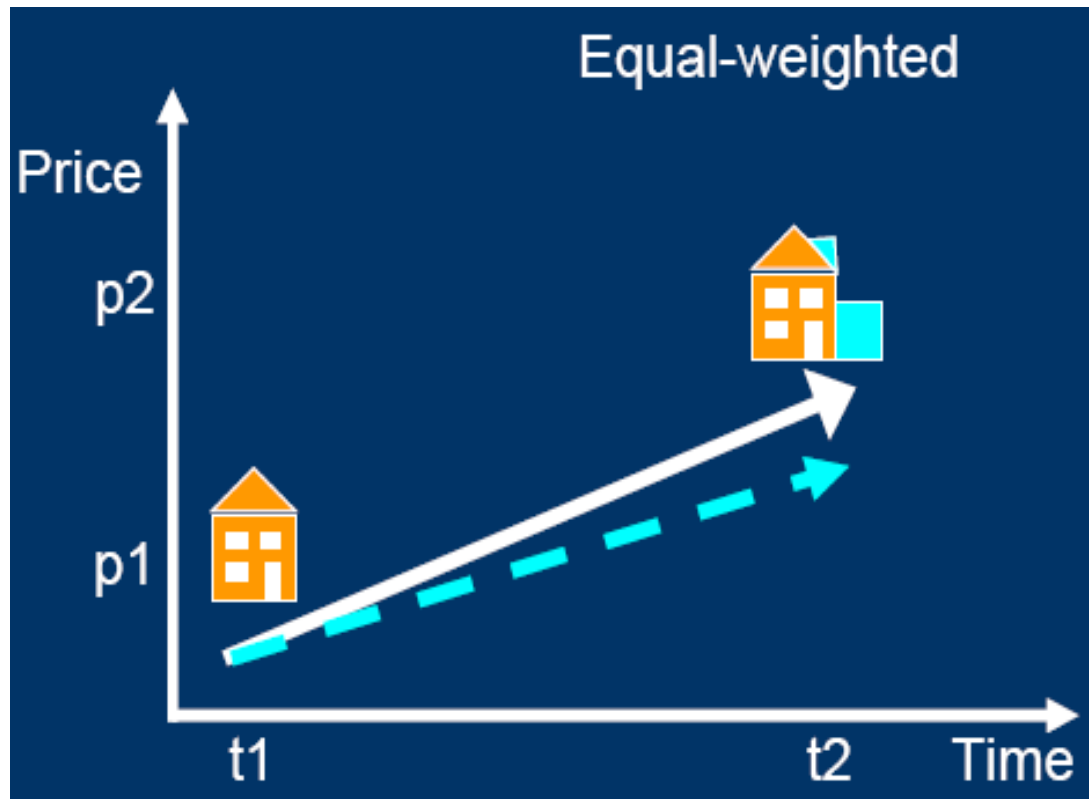
- revision



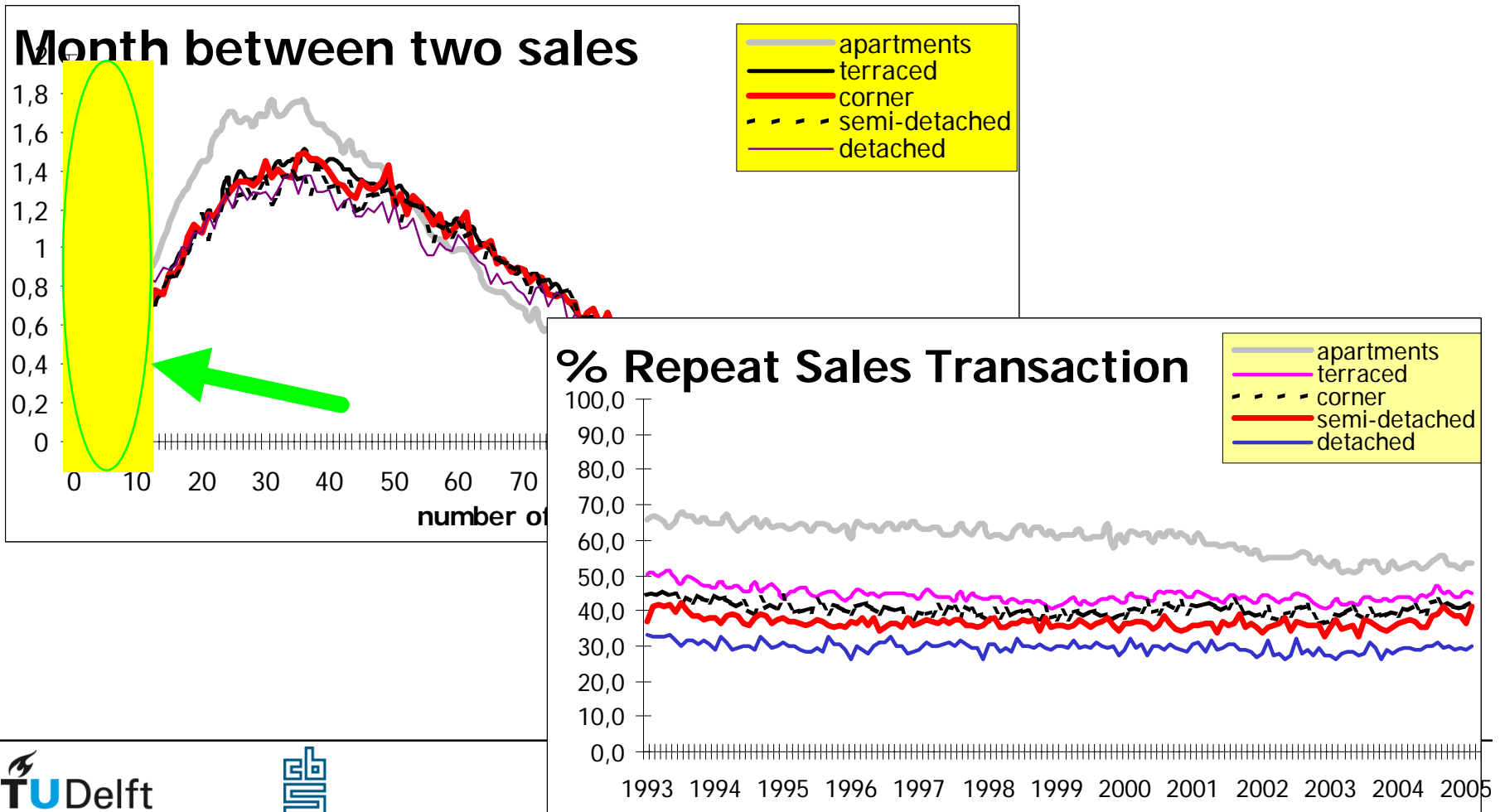
Housing stock and transactions



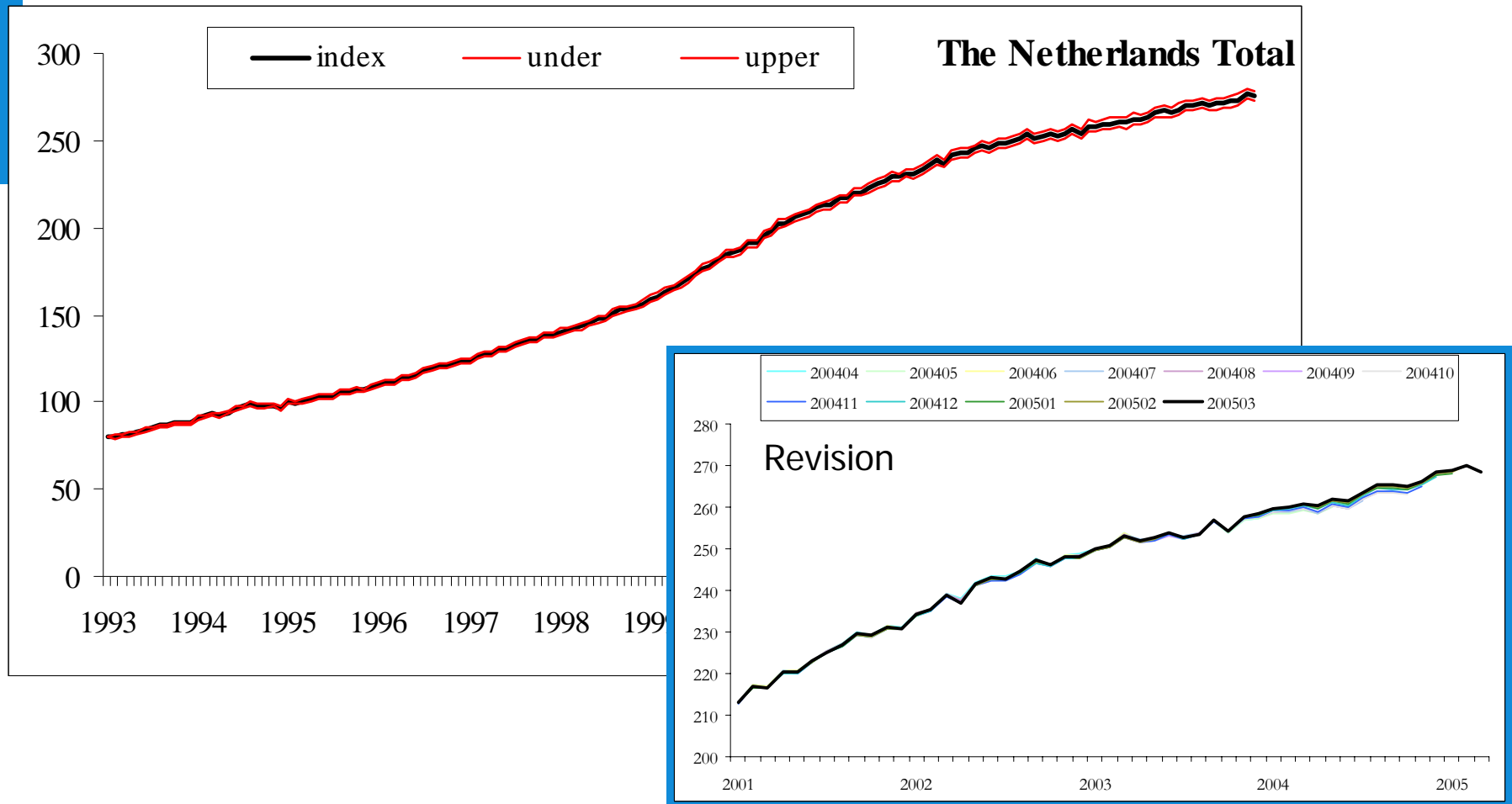
Repeat Sales



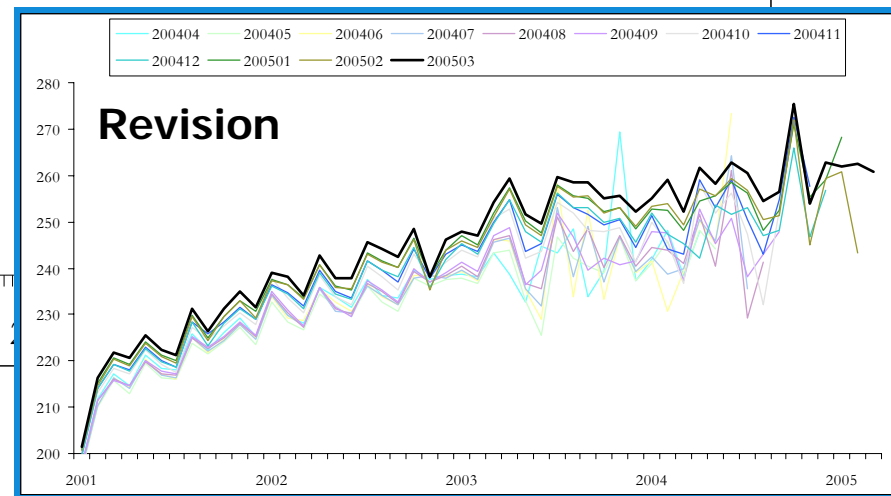
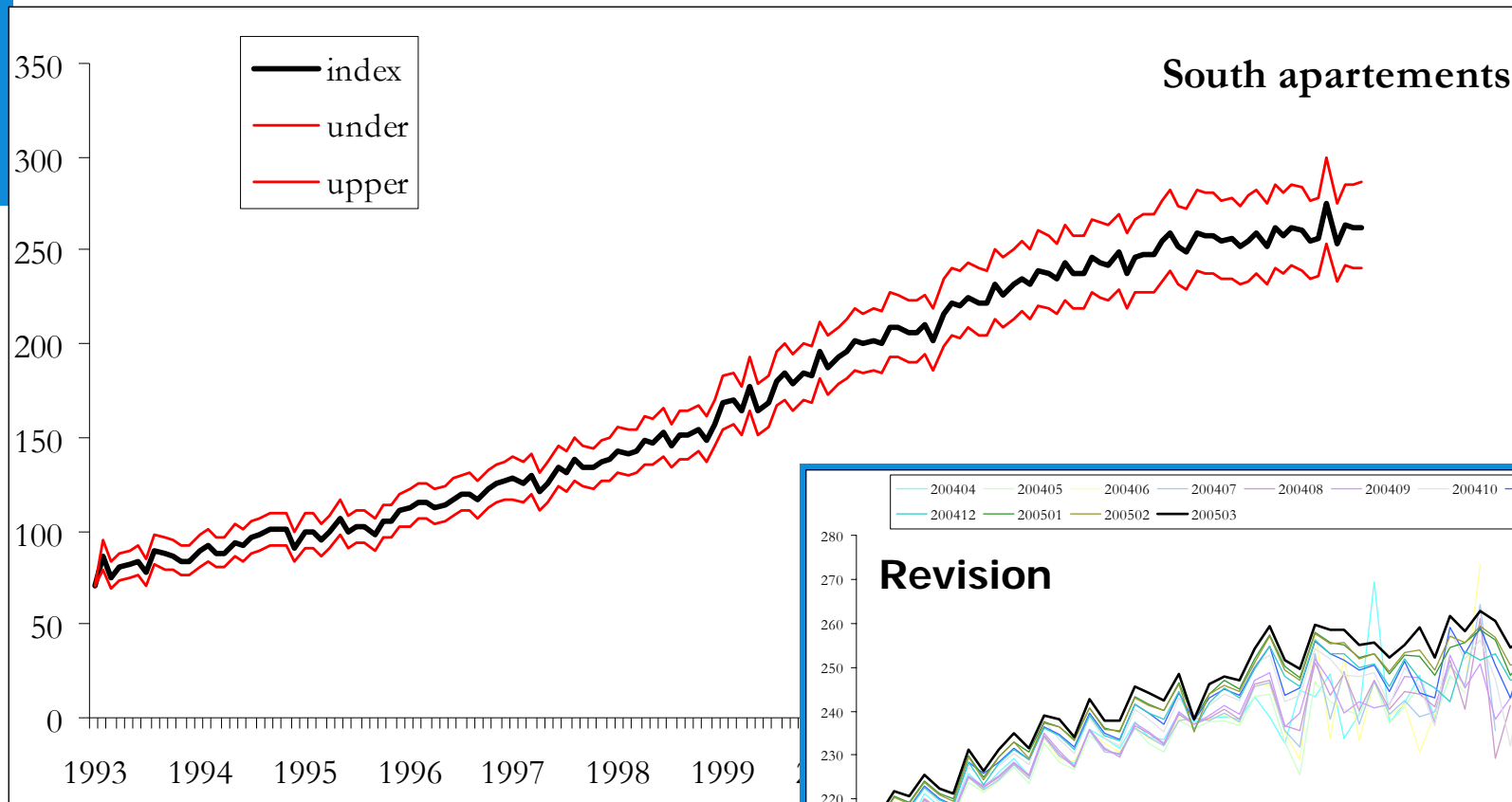
Impression Data



Results



Results



2008
Sales Price Appraisal Ratio

Background

- Owner-occupied housing currently excluded from HICP
- Eurostat pilot study



Sale Price Appraisal Ratio method

Bourassa et al. (Journal of Housing Economics, 2006)

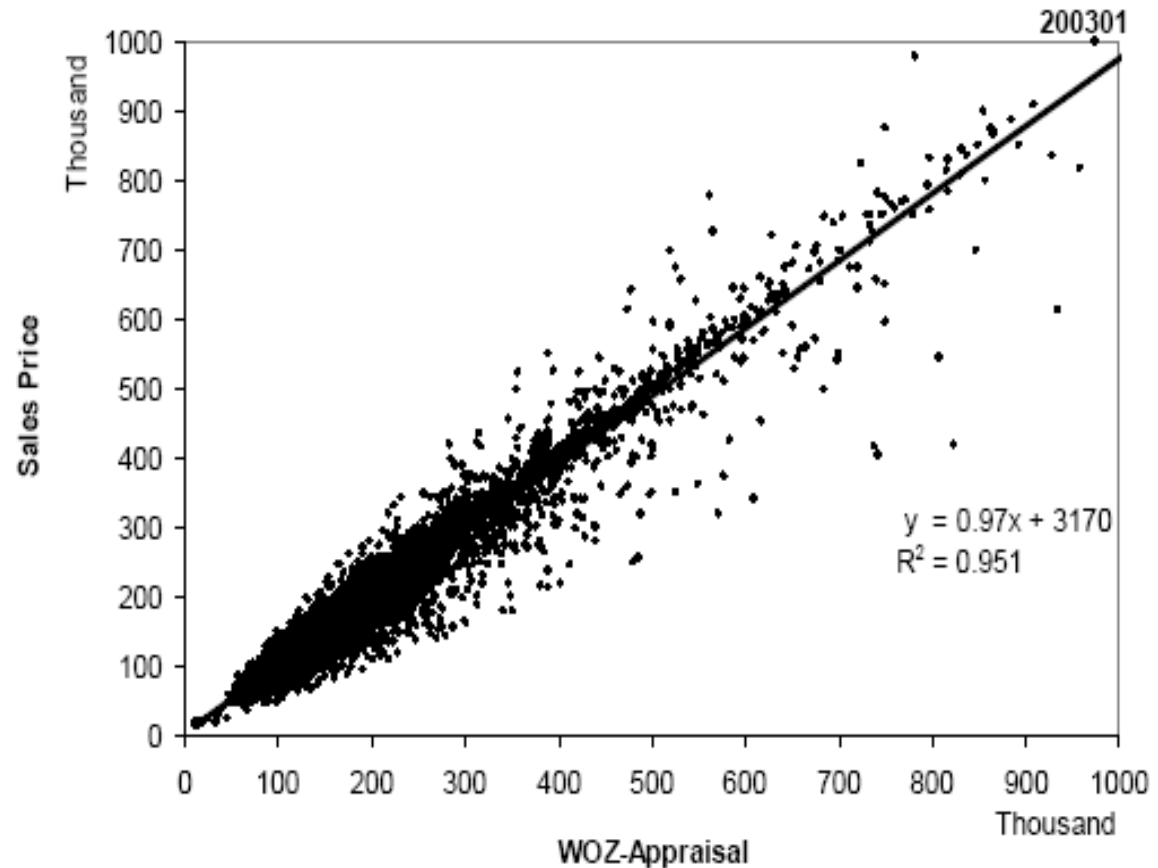
- " *the advantages and the relatively limited drawbacks of the SPAR method make it an ideal candidate for use by government agencies in developing house price indexes.*"
- Used in new Zealand since early 1960s; also in Sweden and Denmark
- Promising results in Australia (Rossini and Kershaw, 2006)
- Based on (land registry's) sale prices p and official government appraisals a
- Model-based approach using appraisals

Reliability of Appraisals

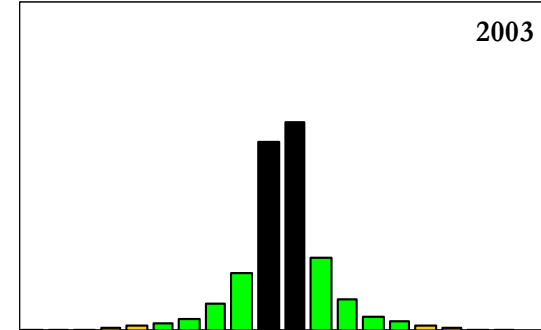
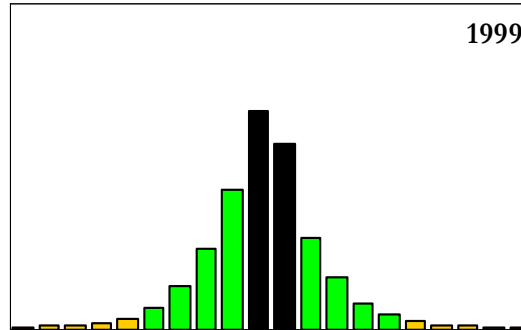
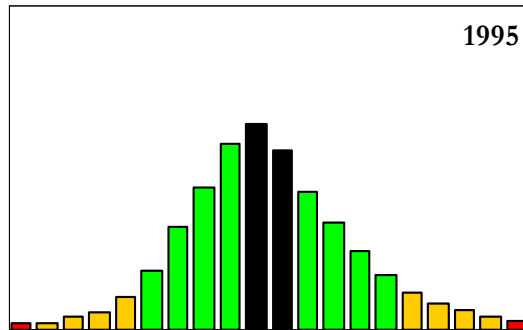
R²

- 1995: 0,90
- 1999: 0,94
- 2003: 0,95

- Appraisal reasonably useful for SPAR



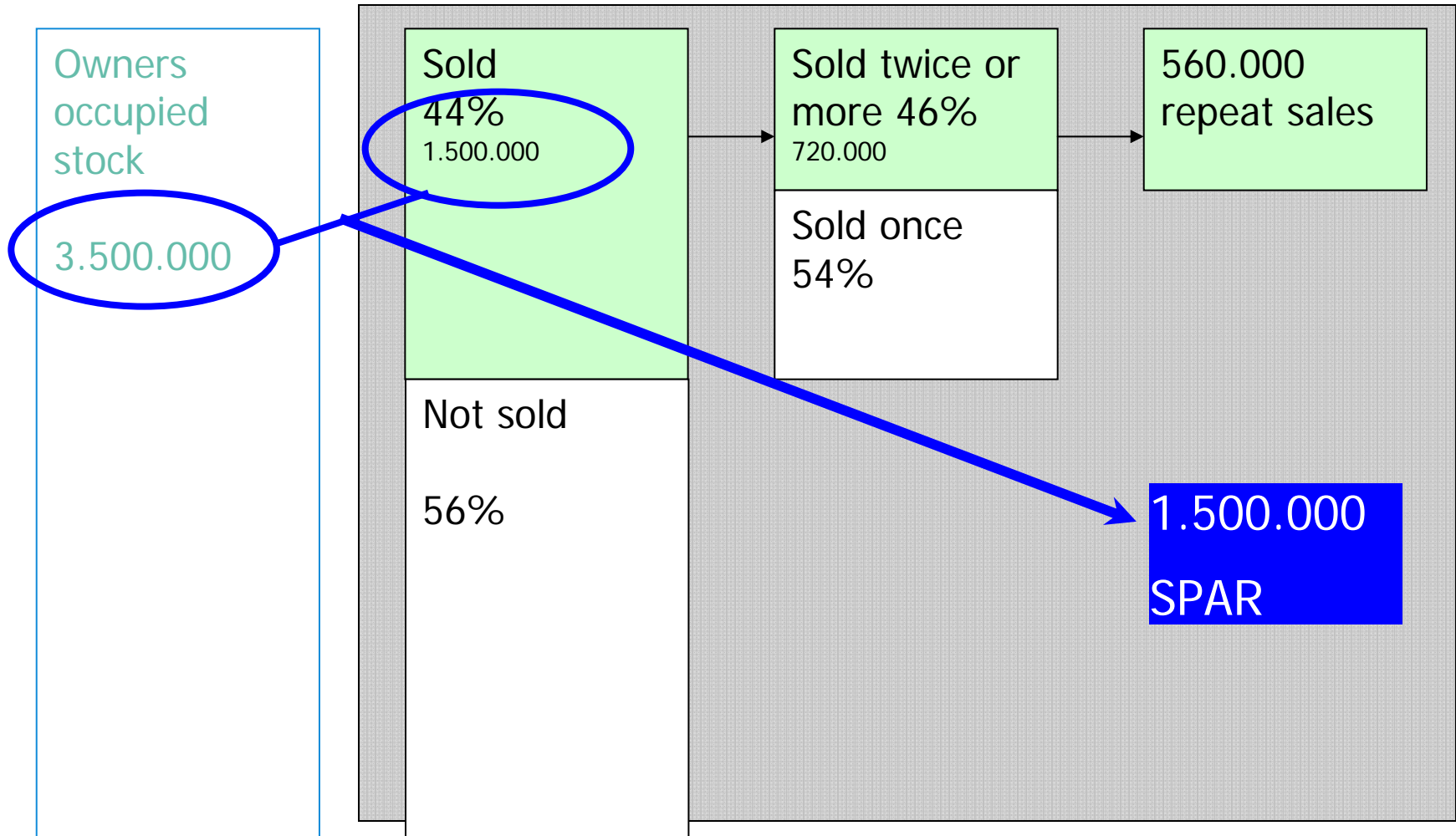
Distribution: $A_{jt} / S_{jt} \sim 1$



Black bars: 0,95 – 1,00
1,00 – 1,05



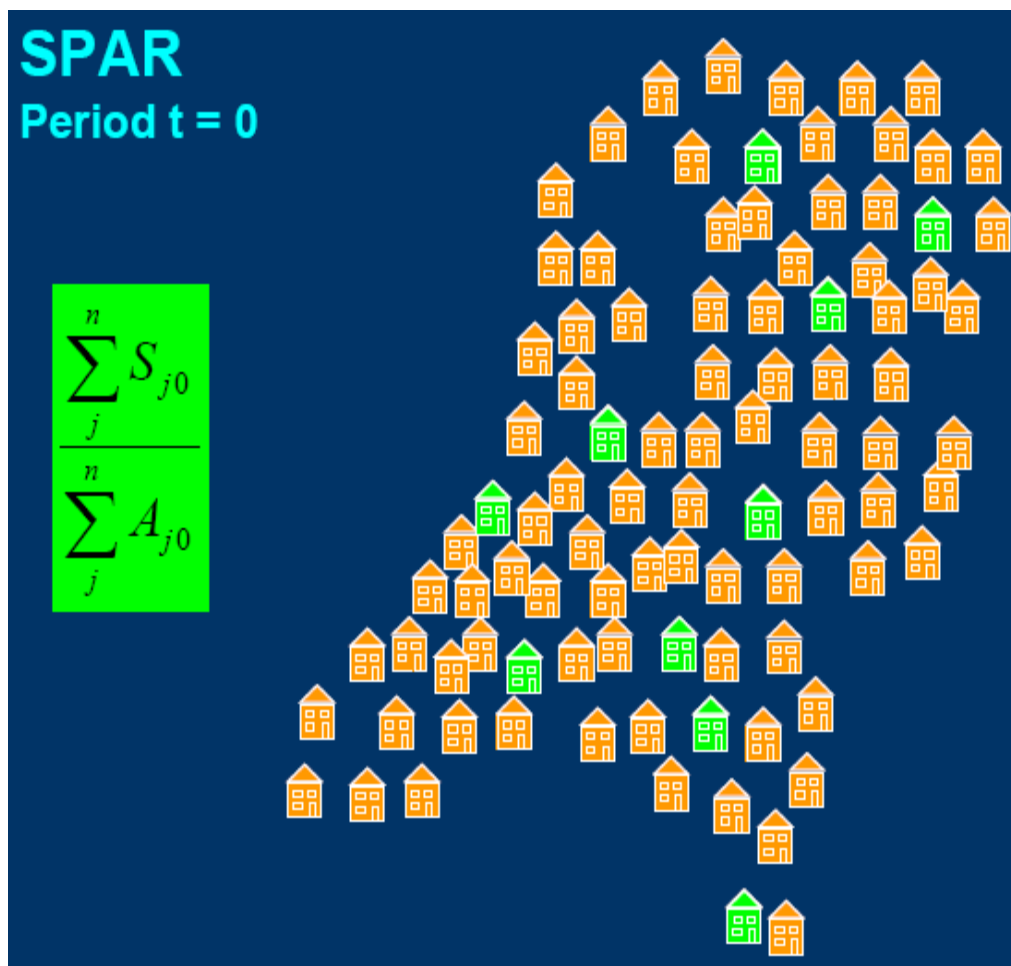
Housing stock and transactions



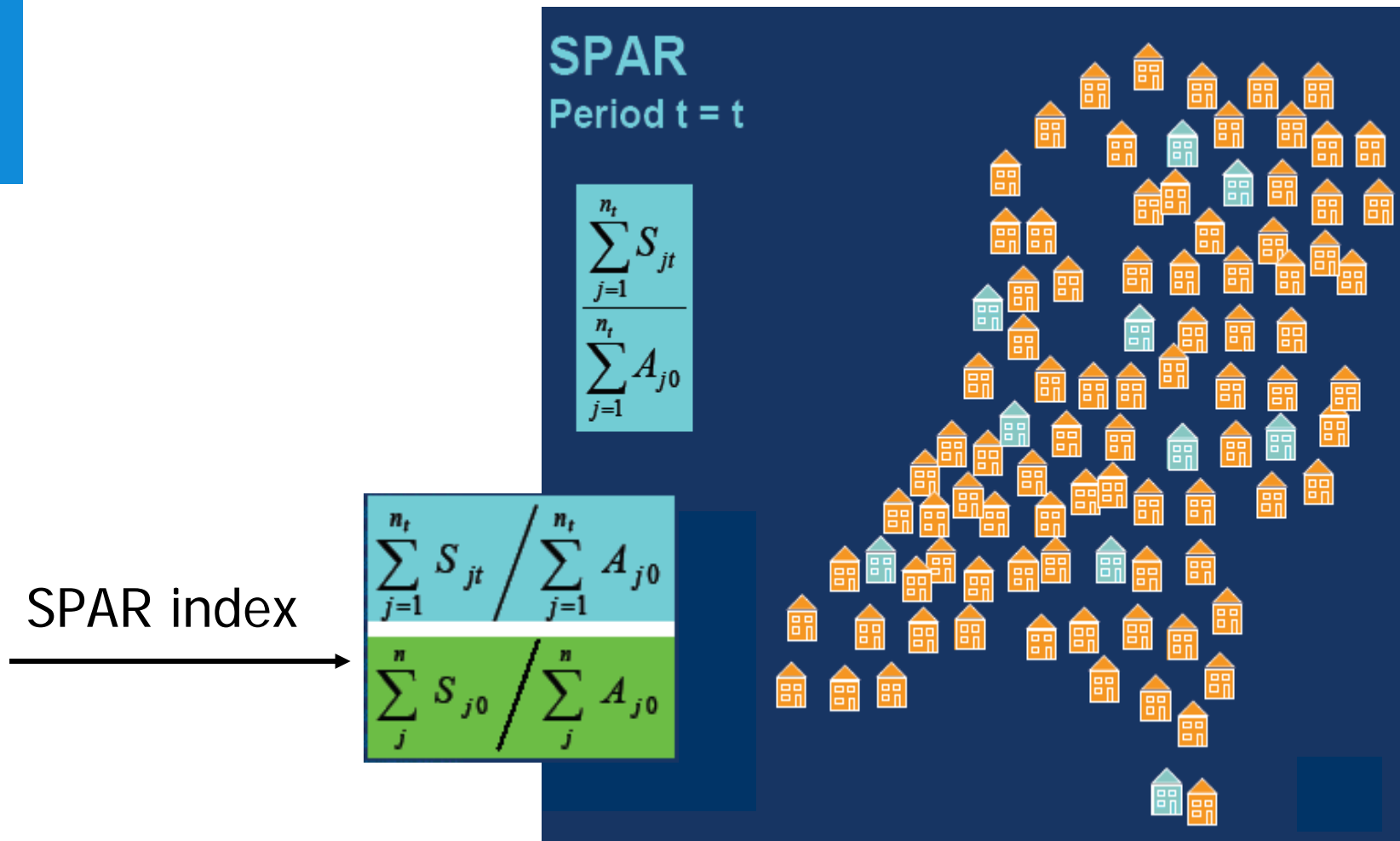
Sale Price Appraisal Ratio (SPAR)

principle

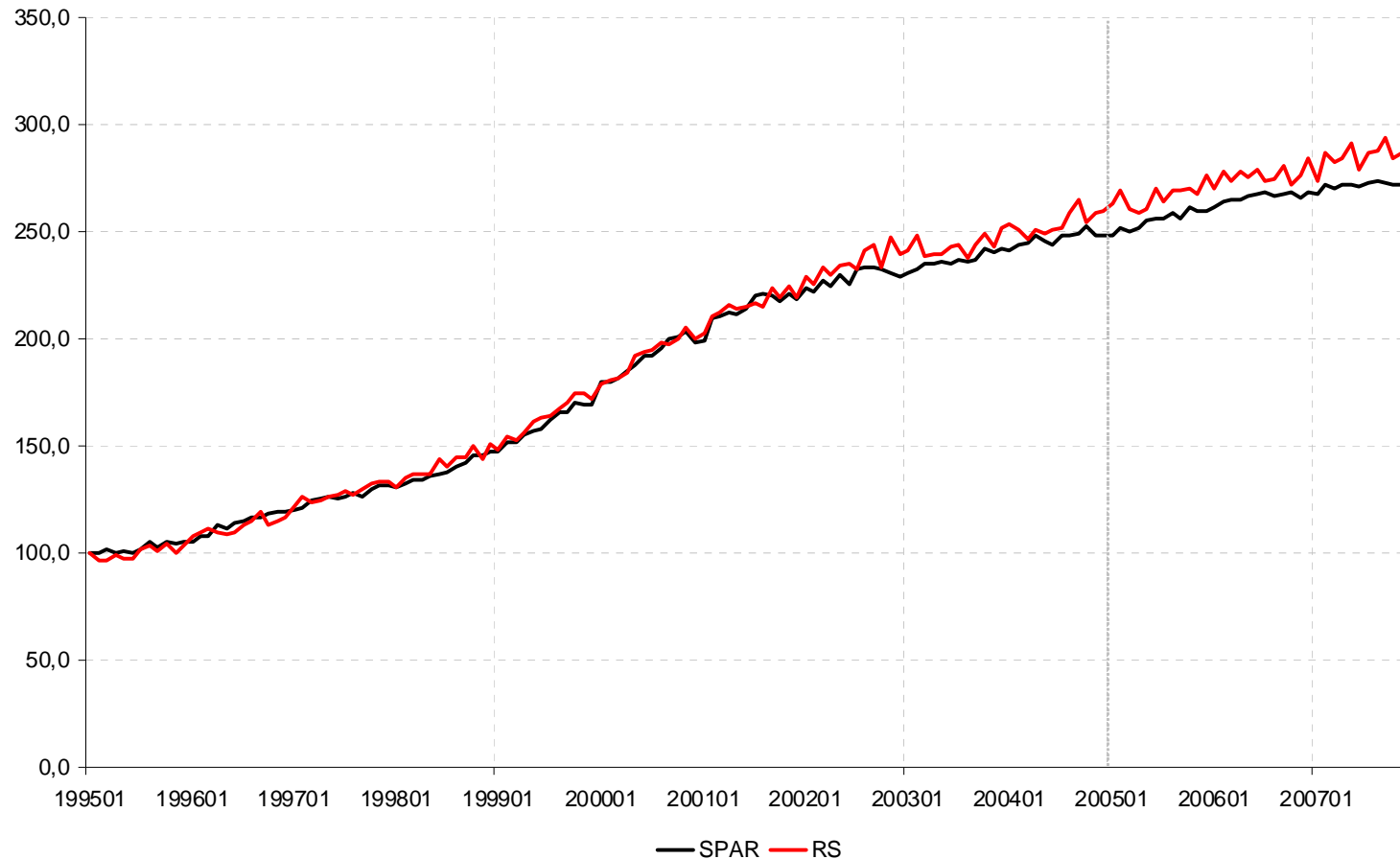
Ratio of Sum Sale Prices (S_{jt}) in current period and sum Appraisals (A_{j0}) in base period
divide by
ratio of Sum Sale Prices (S_{j0}) and sum Appraisals (A_{j0}) in base period



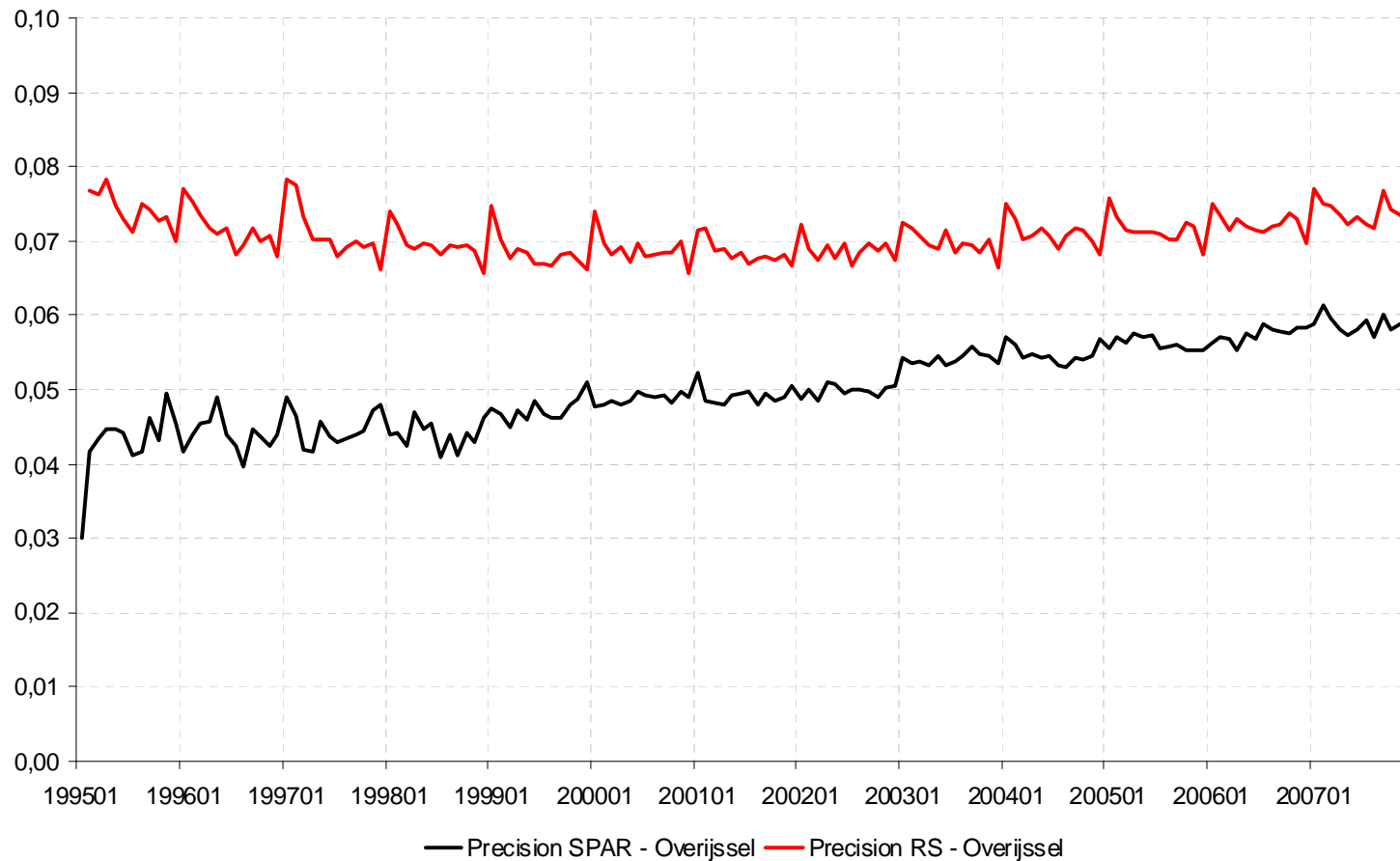
Sale Price Appraisal Ratio (SPAR)



SPAR <> Repeat Sales (development)



SPAR <>Repeat Sales: precision



Conclusion

- The Repeat Sales Index is a efficient model
- Drawback RSI: revision
- SPAR Method most precise index
- Appraisals (in the Netherlands) are reliable
- We uses the SPAR Model



Finish



De bocht van de Herengracht (1671-72) Gerrit Berckheyde