Some Issues on House Price Indexes

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May 20, 2011

DRAFT
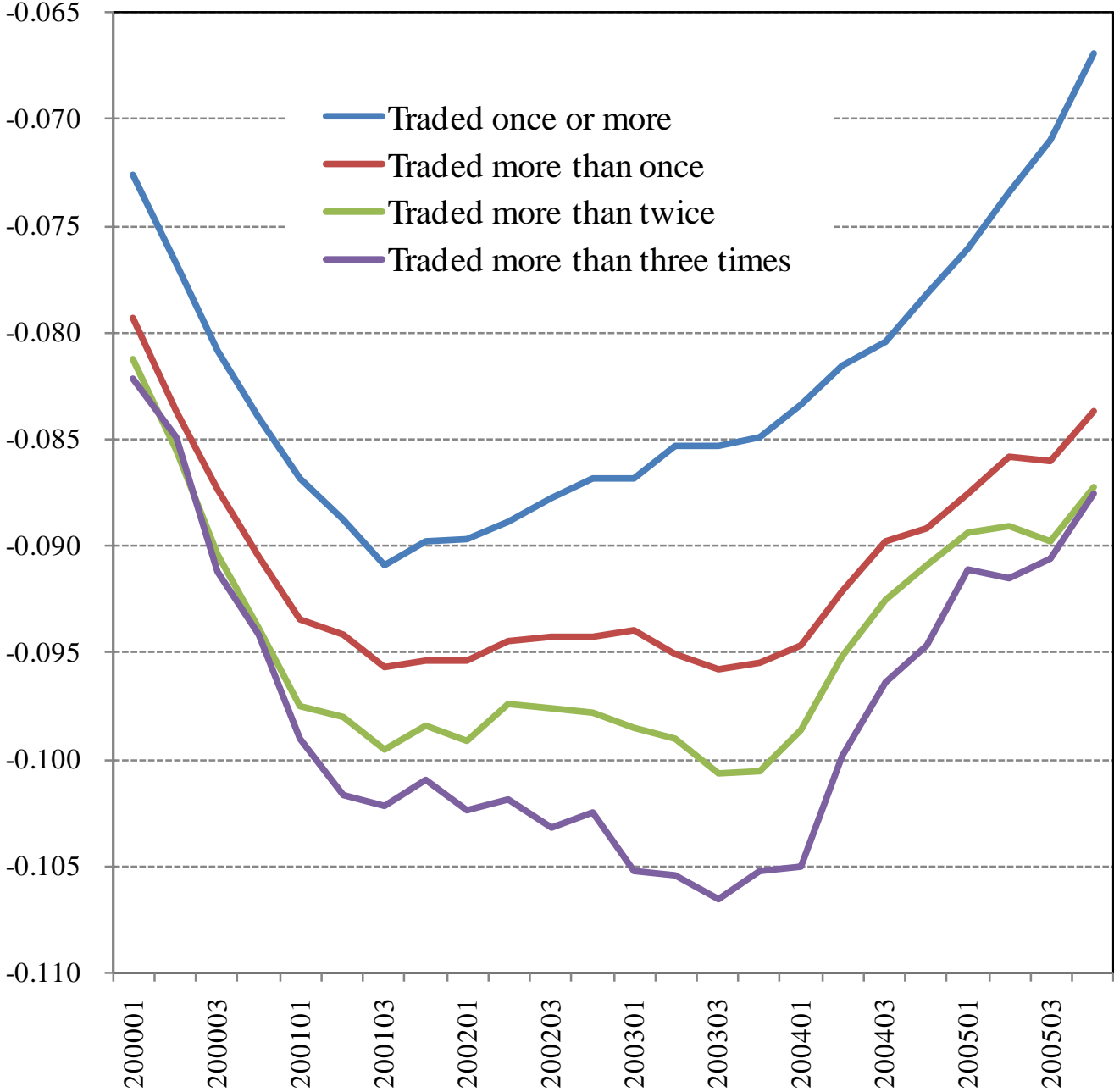# HANDBOOK ON RESIDENTIAL PROPERTY PRICE INDICES

Hedonic vs. Repeat-sales measures

- Houses have particularity with few equivalents. The key issue is how to make quality adjustments.

- Hedonic measures:
  - Researchers estimate the price of each attribute of a house
  - Detailed information about the attributes of a house is required
  - Some important attribute variables may be omitted in hedonic regression (i.e. omitted variable problem)

- Repeat-sales measures:
  - Researchers focus on houses that are traded multiple times (put differently, researchers ignore houses that are traded only once)
  - Relatively easy to estimate, so probably more practical
  - **Houses that are repeatedly traded may not be a representative house (i.e. sample selection bias)**

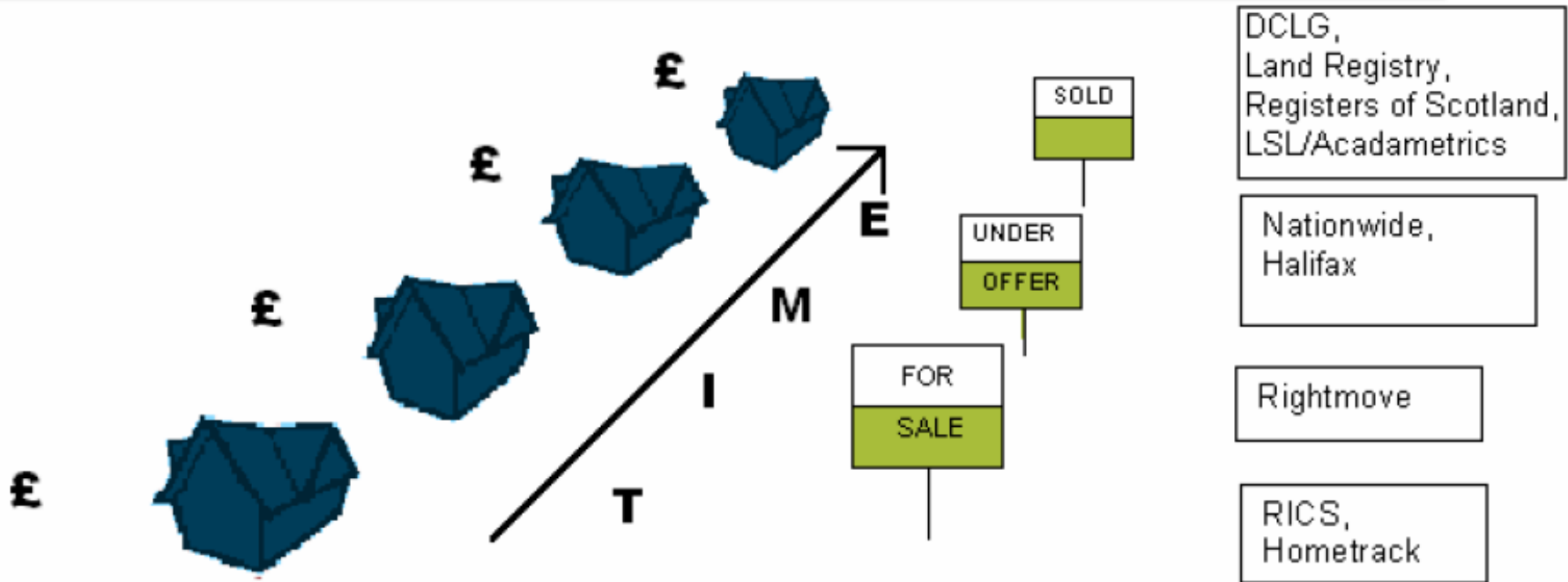# Five indexes for condominiums in the Greater Tokyo Area
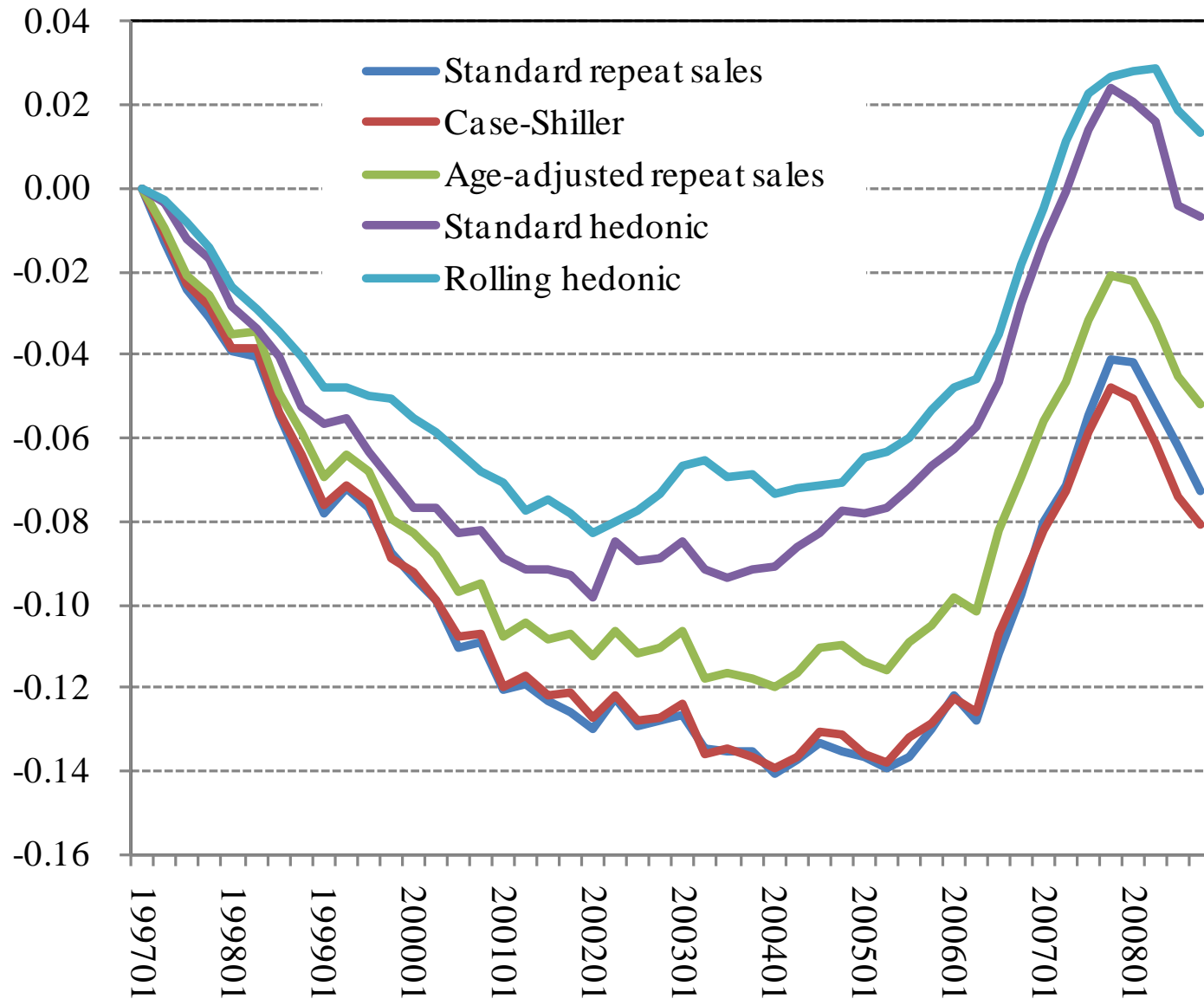
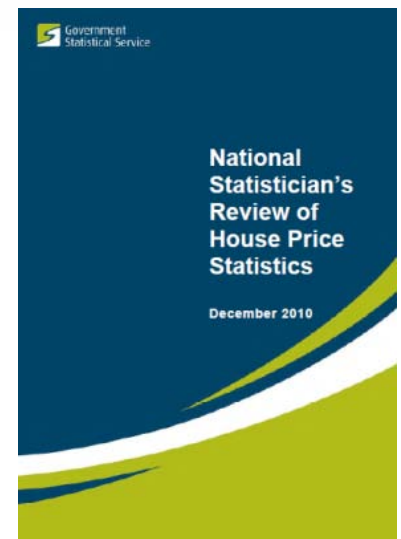# Hedonic indexes estimated using repeat-sales samples

Legend:
- Traded once or more
- Traded more than once
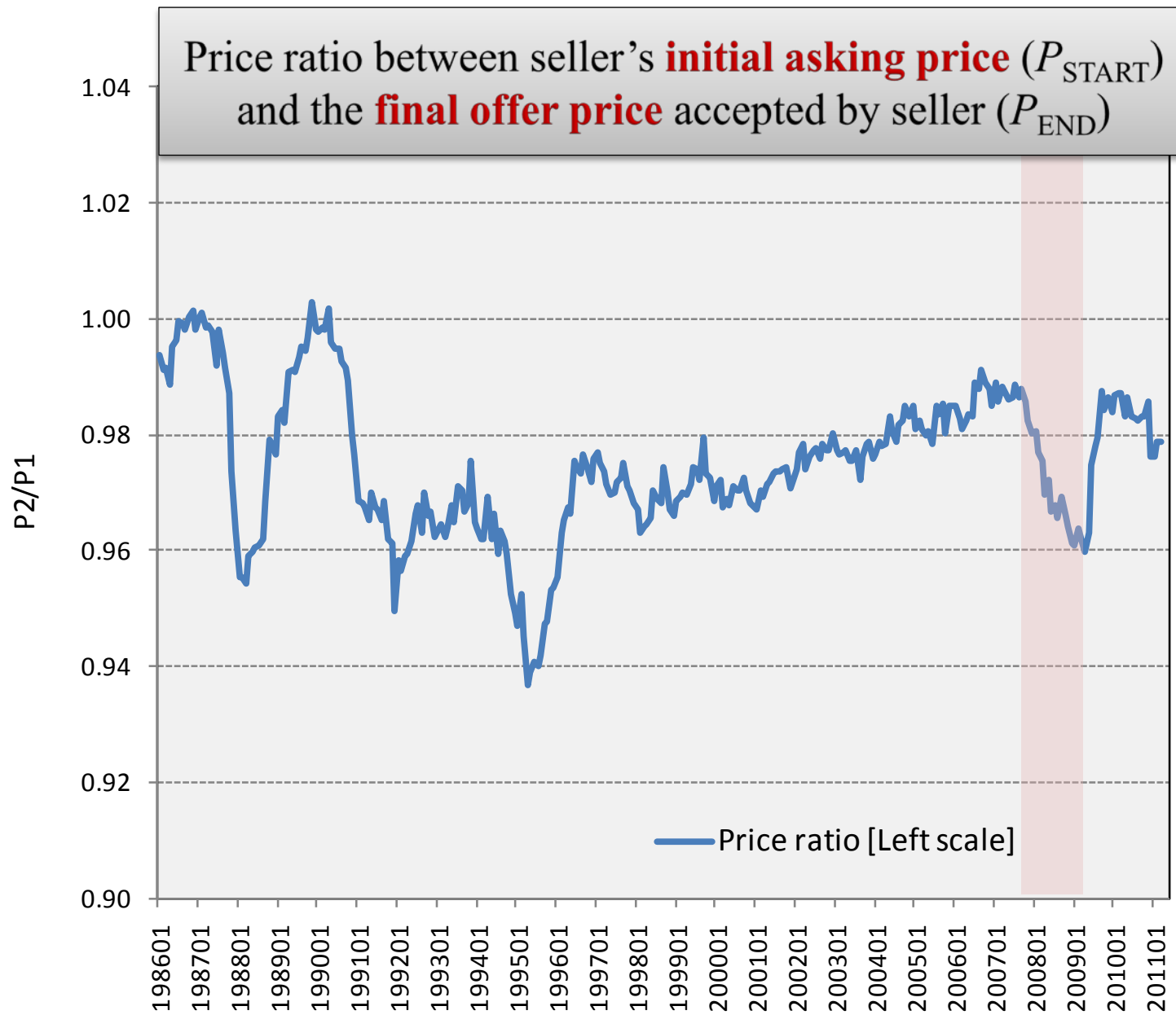- Traded more than twice
- Traded more than three times

"Although a natural starting point for constructing an index, **the repeat sales method is not preferred above the hedonic method for constructing a constant quality residential property price index**. However, it can offer a solution where there is limited or no information on housing characteristics and there are a relatively large number of repeat transactions to provide enough data points for the required types of residences and **where sample selection bias is not considered a problem**. It is not recommended when a distinction needs to be made between the price of the structure and the price of the land."

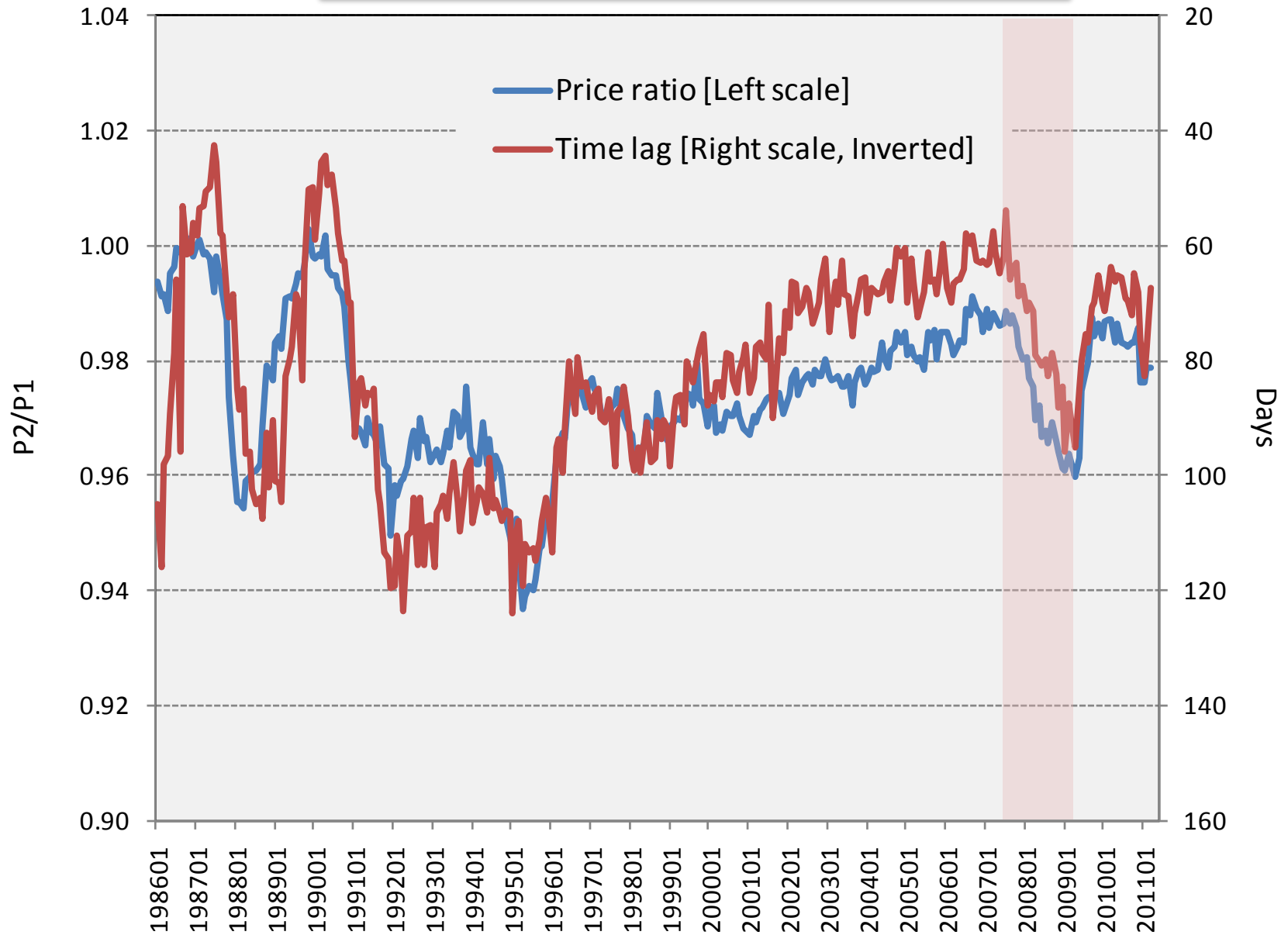House prices at different stages of the buying/selling process

Source: National Statistician's Review of House Price Statistics, Government Statistical Services, December 2010
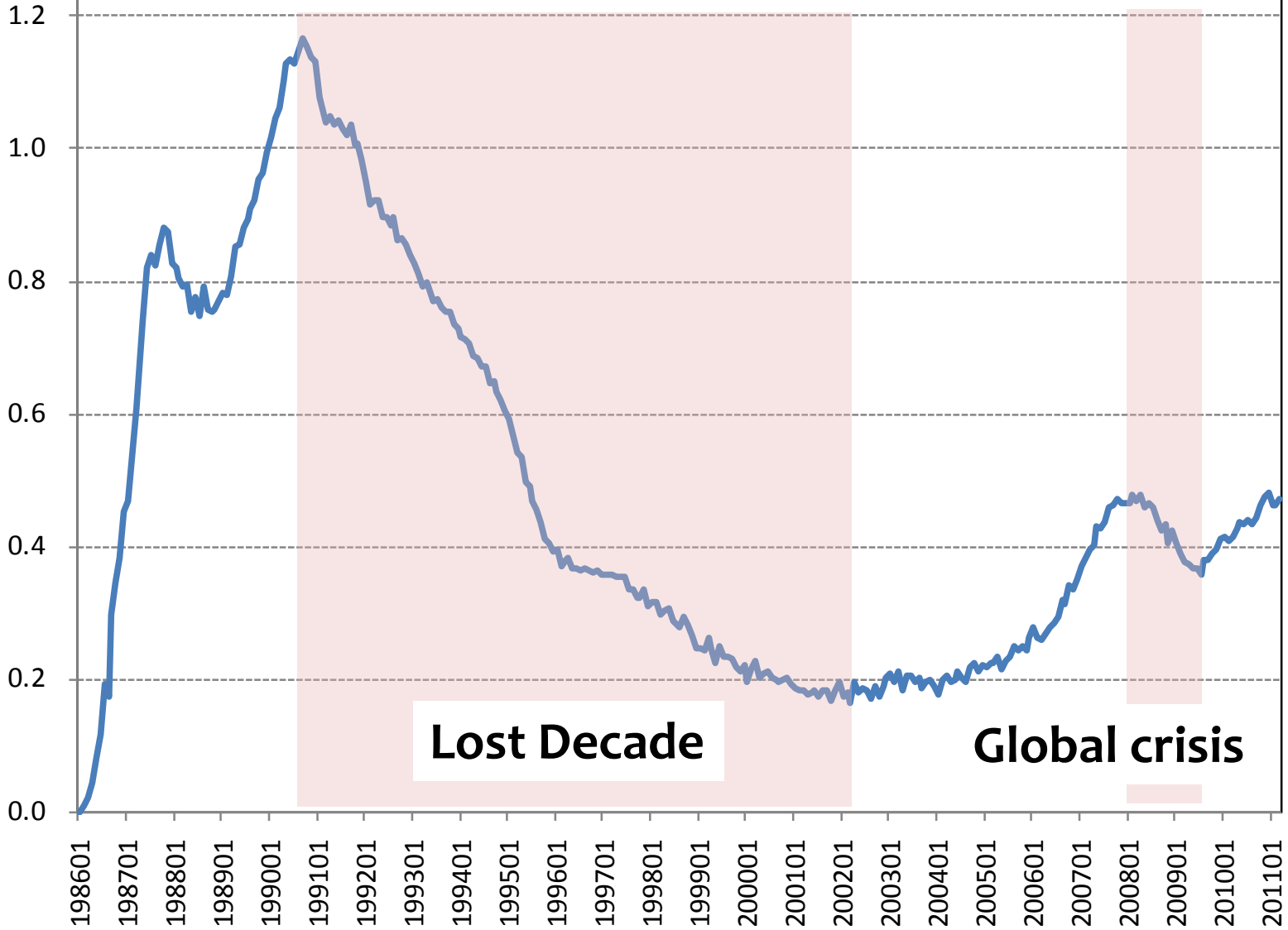
Price ratio between seller's **initial asking price** (P_{START}) and the **final offer price** accepted by seller (P_{END})

Time lag between P_{START} and P_{END}

Price ratio [Left scale]

Time lag [Right scale, Inverted]

P2/P1

Days

Hedonic price index for condominiums in the Greater Tokyo Area

Lost Decade

Global crisis

Weekly hedonic index for condominiums in the Greater Tokyo Area

March 11, 2011
Earthquake
Tsunami
Fukushima
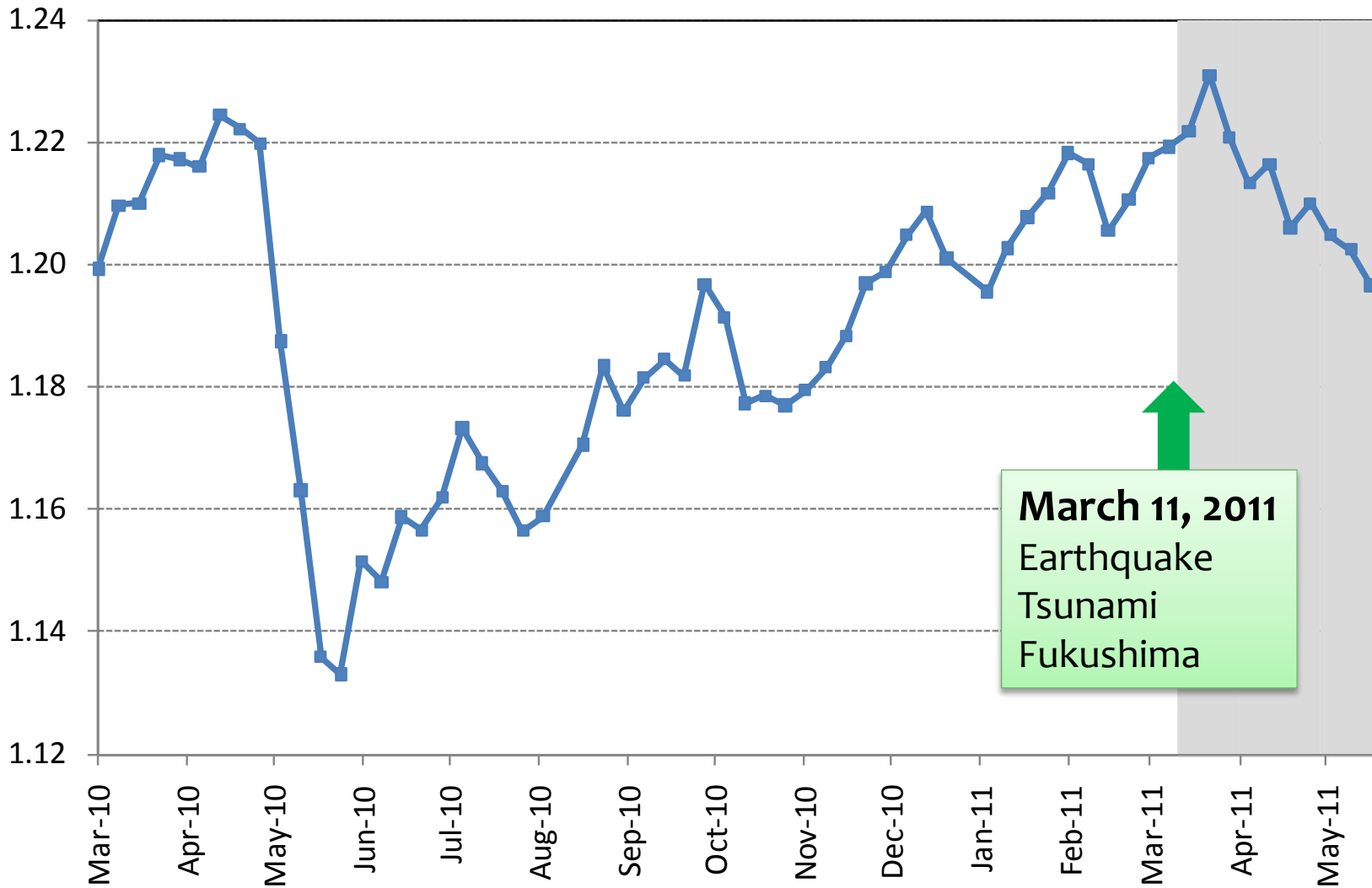
Commuters unable to get home
March 11, 2011

Commercial property rents in the central business district of Tokyo
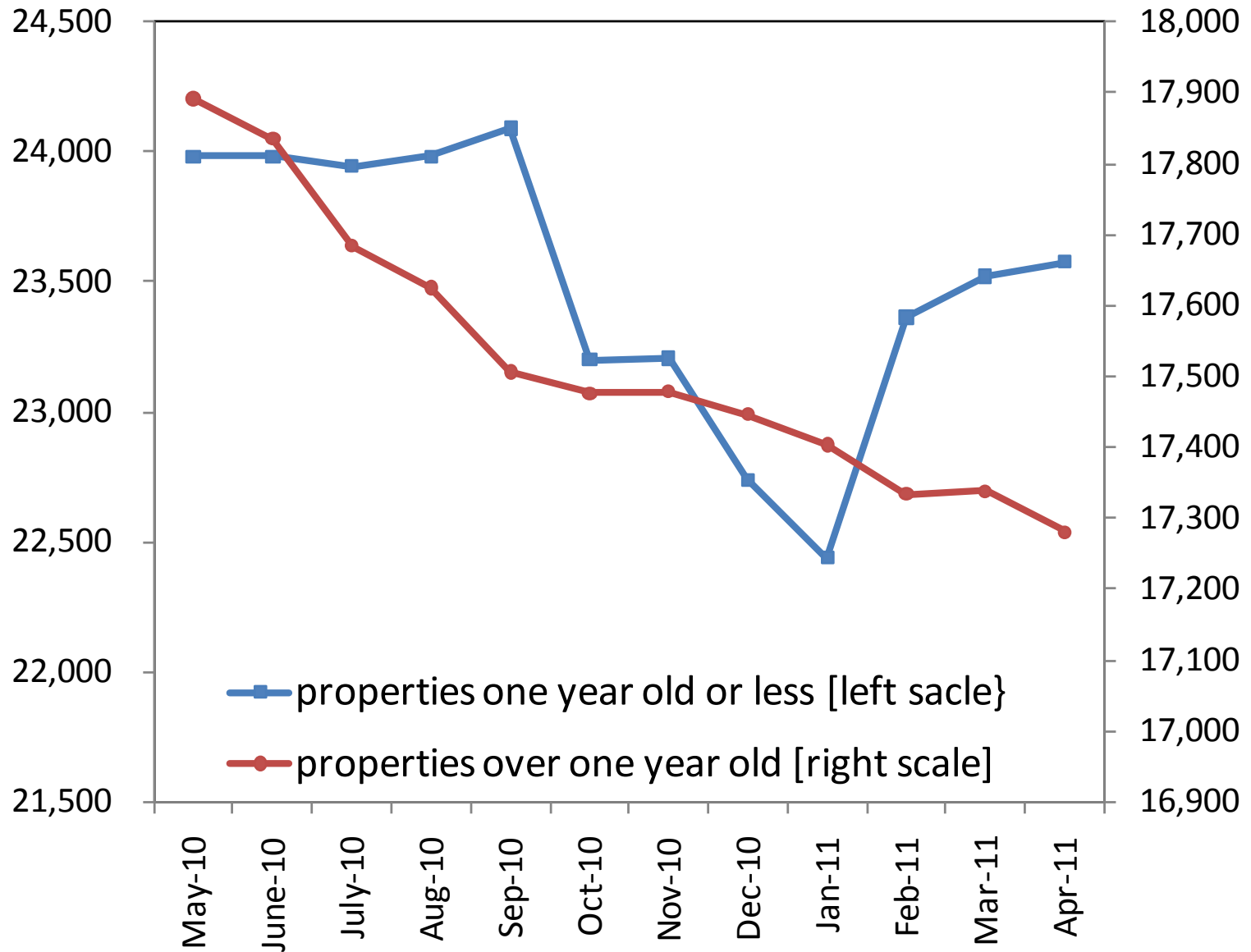
This presentation is based on the following papers:

- Shimizu, C., K. G. Nishimura, and T. Watanabe, "Housing Prices in Tokyo: A Comparison of Hedonic and Repeat-Sales Measures," *Journal of Economics and Statistics*, Volume 230, Issue 6, December 2010, 792-813.

- Shimizu, C., K. G. Nishimura, and T. Watanabe, "House Prices at Different Stages of the Buying/Selling Process," Research Center for Price Dynamics Working Paper Series No. 69, February 2011.

- Ohnishi, T., T. Mizuno, C. Shimizu, and T. Watanabe, "On the Evolution of the House Price Distribution," Research Center for Price Dynamics Working Paper Series No. 61, August 2010.