

Comments on “Residential Property Price Indexes for Tokyo”

by Erwin Diewert and Chihiro Shimizu
University of British Columbia and Reitaku University

Discussant Yongheng Deng
National University of Singapore

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Decompose the price of a house into land and structure components

- Using a hedonic model and specify the constant quality price index for residential property by separating its land component and structure component
- Basic (nonlinear) hedonic model is specified by
 - The land area of the property, L
 - The livable floor space area of the structure, S
 - The age of structure, A
 - The location of the property, W
 - NB, WL, TW, TT
- Why this is important?

Estimating Land Prices



Estimating Land Prices

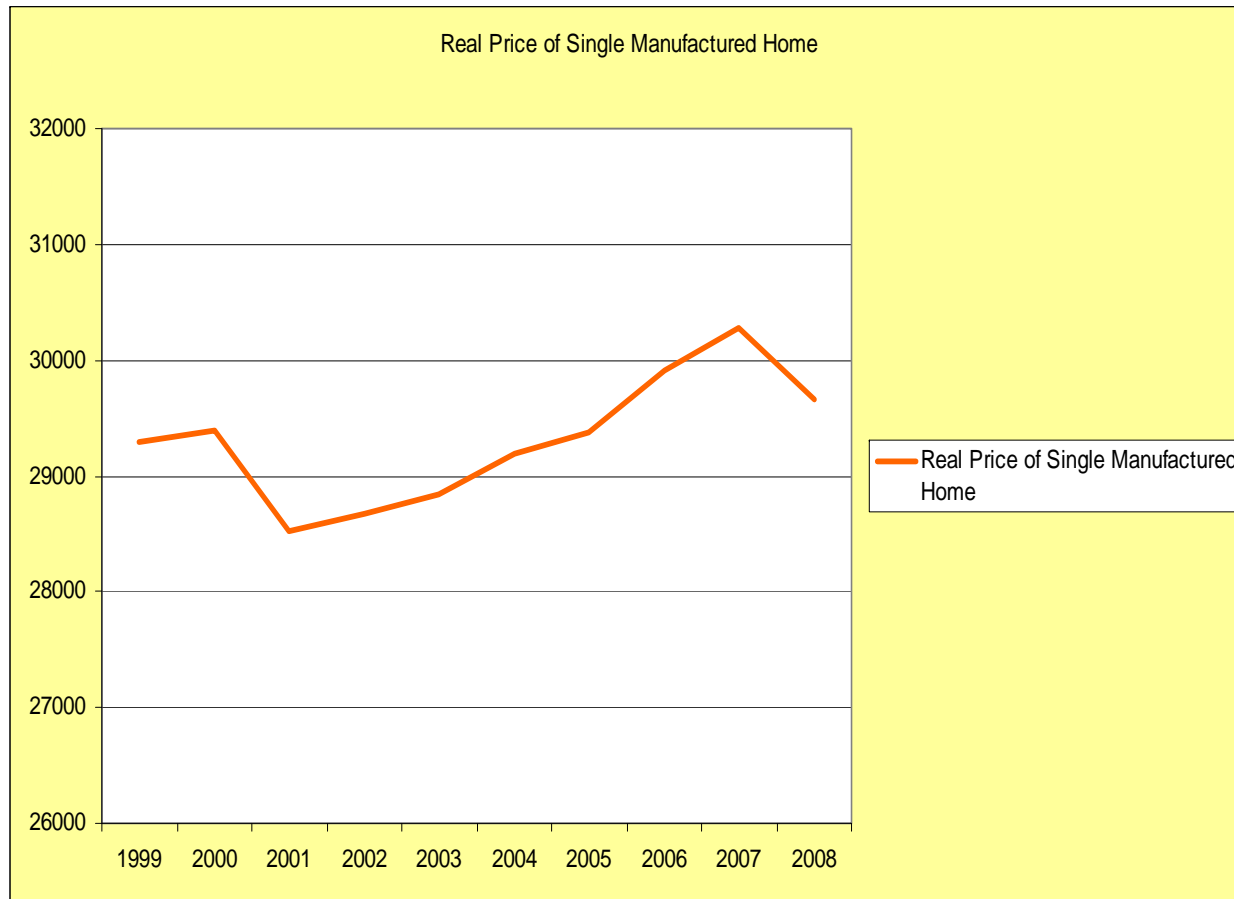


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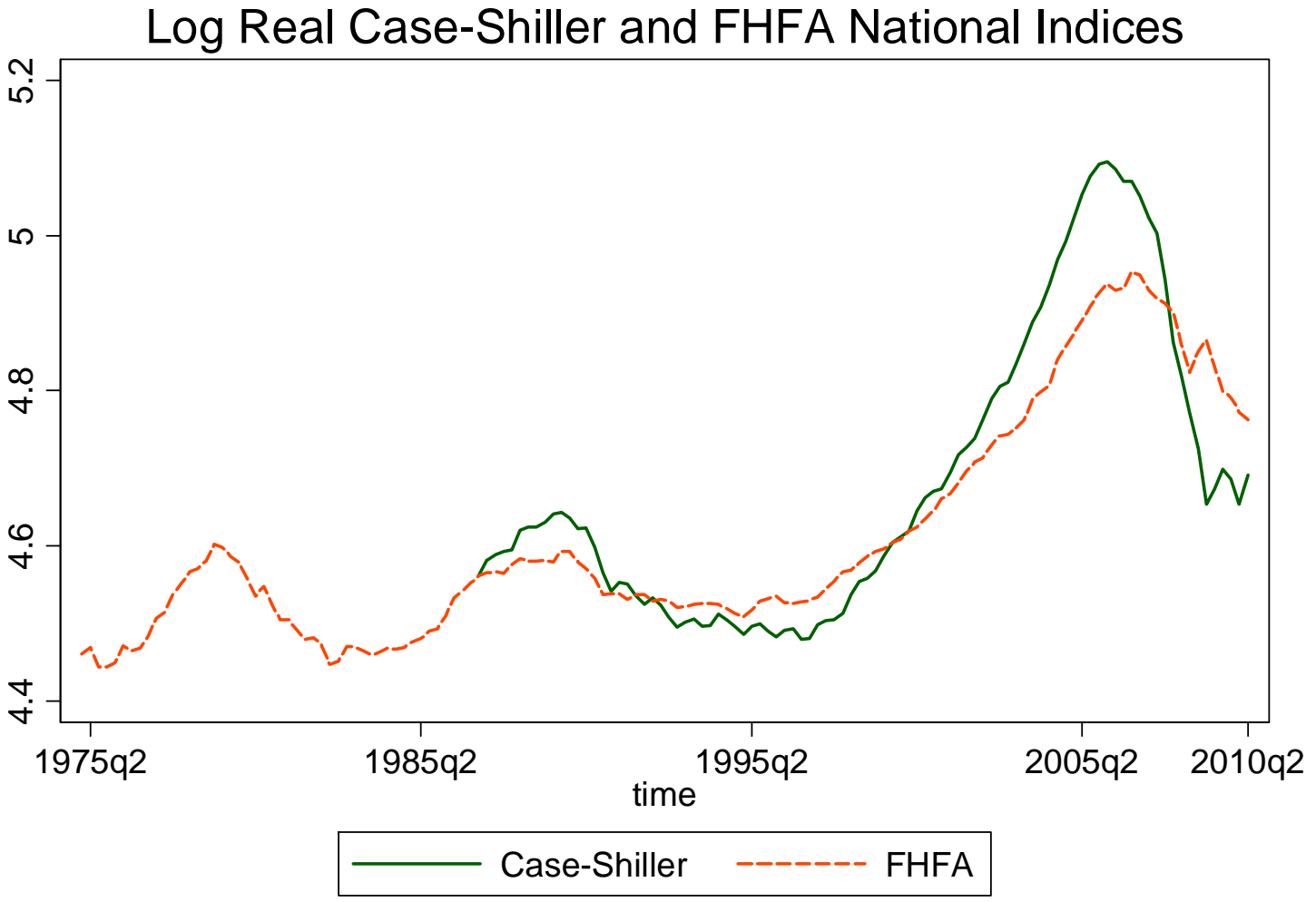
Manufactured Homes



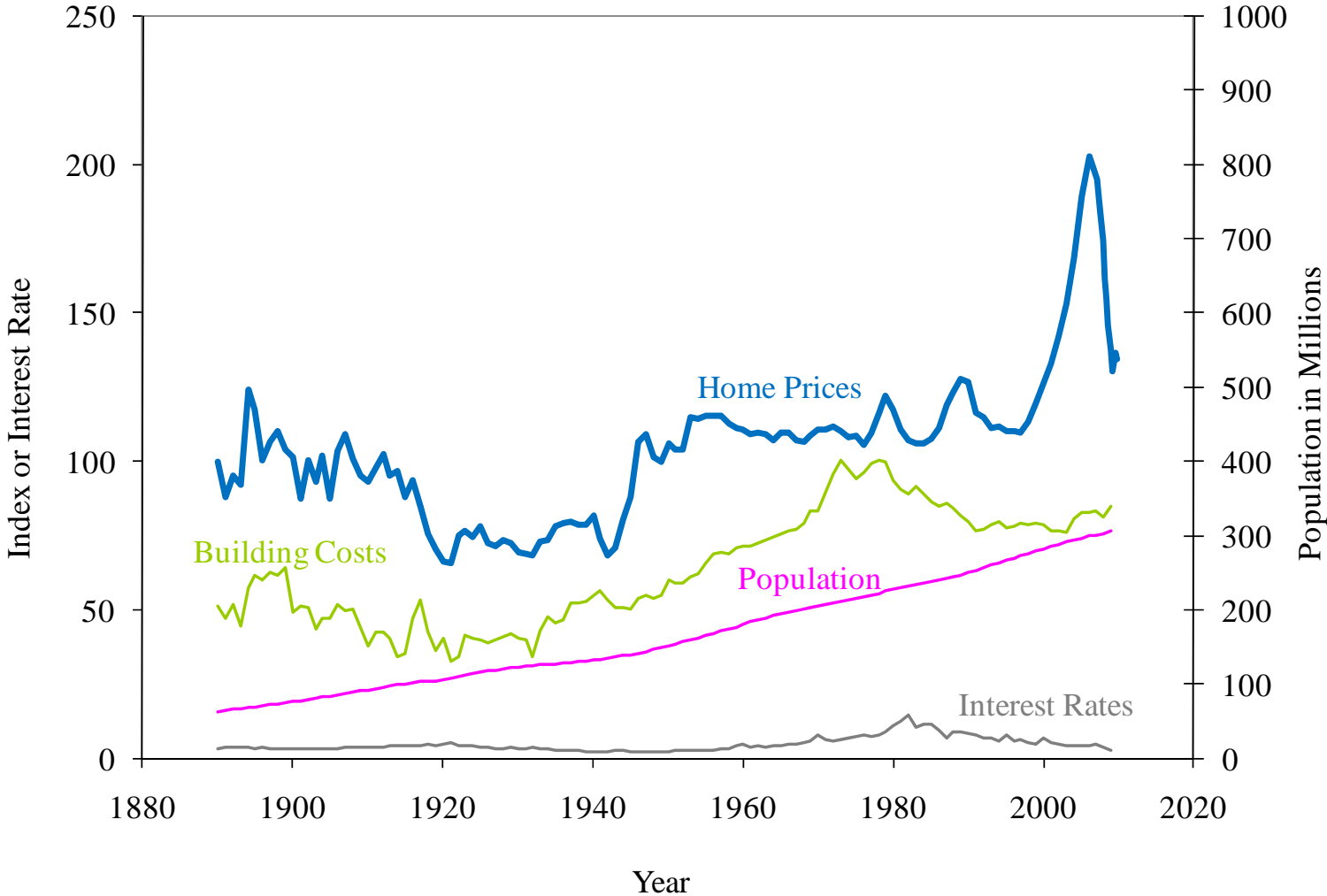
Real Prices of Single Manufactured Homes (Albert Saiz, 2012)



Case-Shiller and FHFA House Price Indices



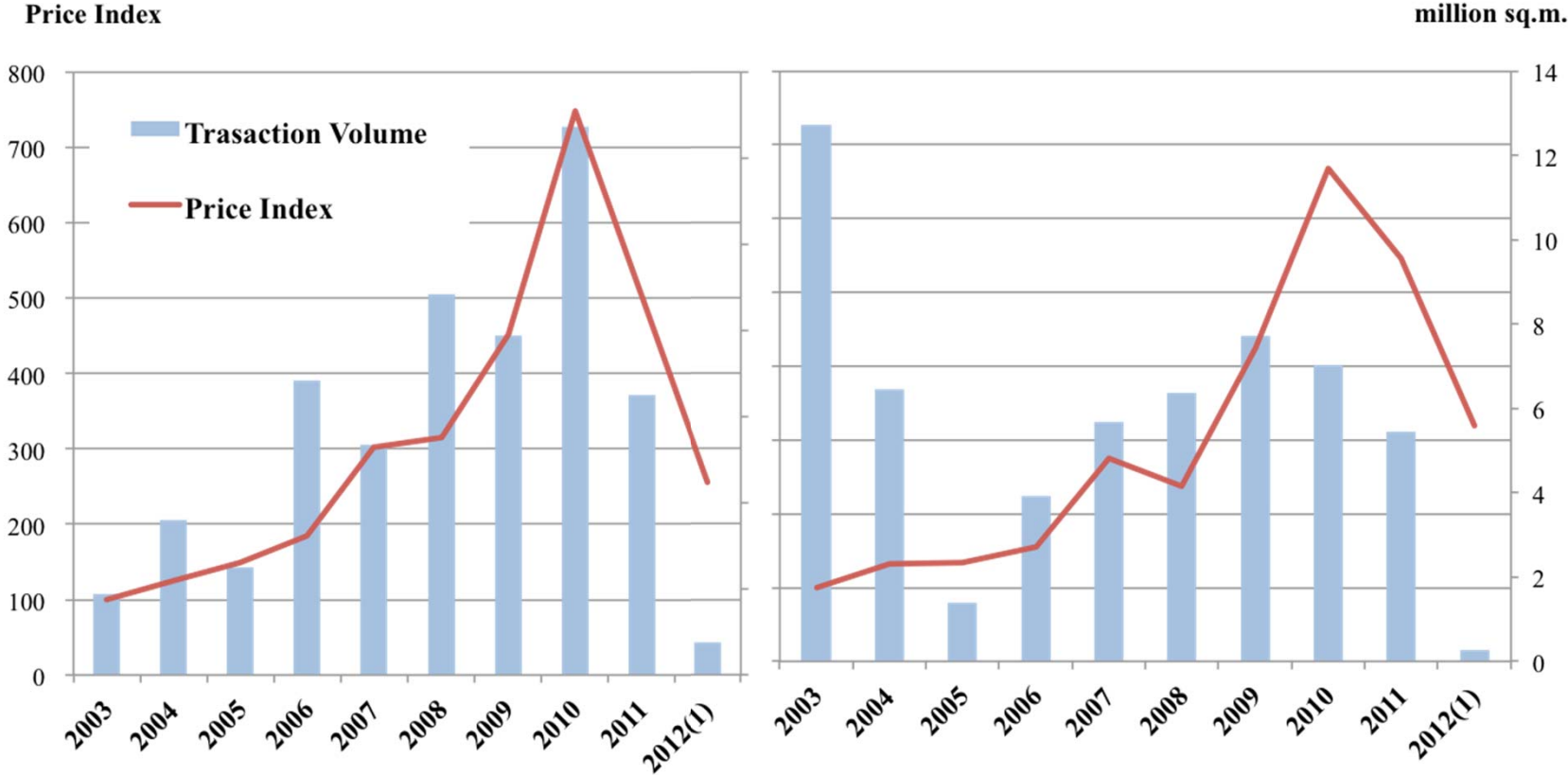
Case-Shiller and FHFA House Price Indices



Recent Boom-Bust in Chinese Residential Land Markets

(A) Beijing

(B) Shanghai



Diewert and Shimizu Decomposition

$$V_{tn} = \alpha_t L_{tn} + \beta_t S_{tn} + \varepsilon_{tn}$$

$$V_{tn} = \alpha_t \left\{ \sum_{j=1}^{21} \omega_j D_{W,tn,j} \right\} f_F \{L_{tn}\} f_M \{M_{tn}\} f_T \{T_{tn}\} \\ + \beta p c_t g_A (A_{tn}) g_B (B_{tn}) S_{tn} + \varepsilon_{tn}$$

Challenges in Identification

ε_{tn} is iid over t and n stacking over

L_{tn} and S_{tn} can be corelated

Omitted demand driven characteristic

may lead ε_{tn} to be correlated to α_t and β_t

α_t and β_t can be inter-dependent

More Detailed Comments

- Supply side specification based on builder's model vs more general equilibrium specification using both demand and supply information
 - Building age can be a function of S/L ratio (HK case)
 - Demand driven β can be a function of S/L ratio (Beijing Land sale case)
- Test the assumption of the builder's model that production functions for S and L are independent
 - Apply Albert Saiz supply elasticity (QJE) to test the hypothesis using treatment sample (markets with inelastic land supply) and control sample (those markets with elastic land supply)
 - Using exogenous shock (government policy intervention, etc.)