Comments on "Land Prices and Fundamentals" by Koji Nakamura and Yumi Saita

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This paper ...

- exmamines long-run relationship between macro economic fundamentals and the weighted-average land price indicators, which are supposed to be appropriate indicators in the context of the macro economic analysis.

- cointegration between the land price and DPV.

  $\Rightarrow$ explosive 'bubble' doesn not exist, although the actual land prices can be deviate the theoretical land prices.

- error-correction analysis:

  convergence of actual land prices to the long-term equilibrium level

My comments:

1. Fundamentals

   'myopic expectations of the future income'

   $\Rightarrow$ (defensible specification?) Economic fundamentals fluctuate dramatically!!

2. Empirical Approach

3. Are weighted-average land price indicators really appropriate in the context of the macro economic analysis?

Comment 1: Fundamentals

- Discouted Presented Value (DPV) of Land Price

$$P_t = \frac{Y_t + E_t P_{t+1}}{1 + r_t}, \quad \text{and } r_t = i_t + \tau_t + RP_t$$

$$\Rightarrow P_t = \frac{Y_t}{i_t - g_t^e + \tau_t + RP_t} \qquad (6)$$

- Authors use the estimation specifications in line with the theory of land price determination. However, I think that the theoretical values obtained by authors has some problems, although authors point out in p. 40.

- g_t^e: constant growth rate (static expectation for future income growth)

  growth rate of the quarterly nominal GDP **filtered by HP filter** ($\lambda = \mathbf{100}$ instead of $\lambda = \mathbf{1600}$)

  $\Leftarrow$ Is people's expectation really myopic?

  Can you use HP filter as the proxie? Are there some persuasive reasons and/or previous studies?

  smoothing parameter $\lambda = 100$?

- cf. Campbell and Siller (1987, JPE) estimate DPV based on the VAR model.

- Risk Premium: $RP_t = RP = 6\% \Leftarrow$ Constant !!

  bubble: low

  before and after bubble: high

$$g_t^e$$
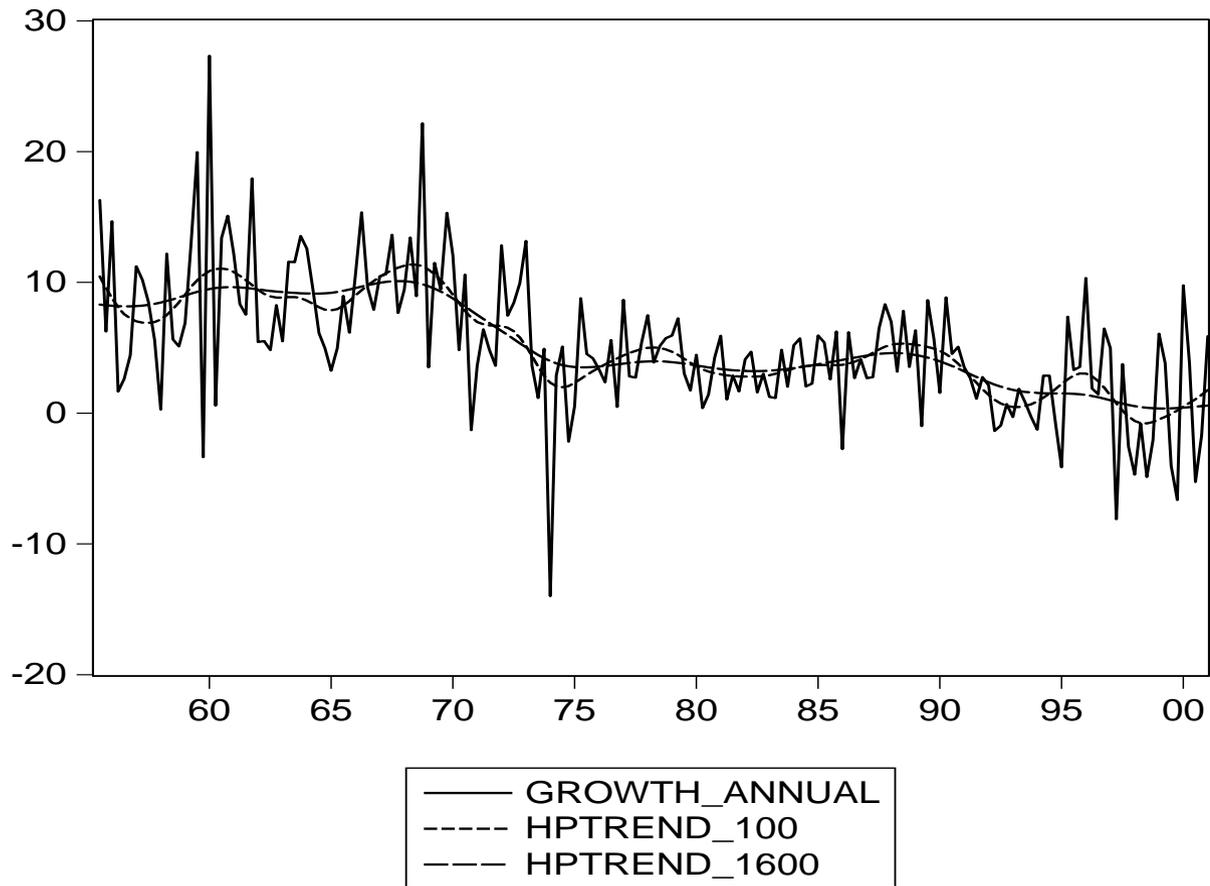
$$g_t^e$$
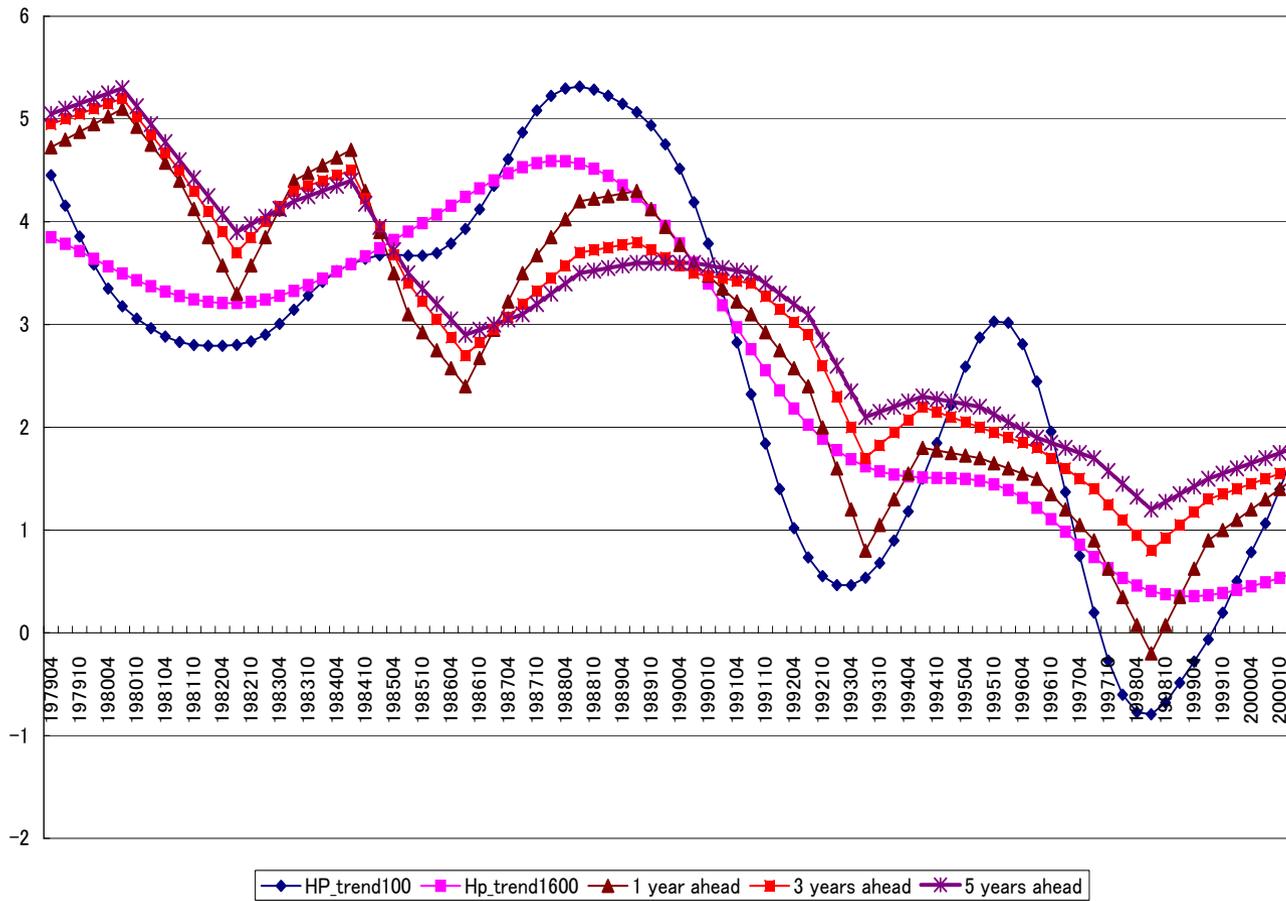
Comment 2: Empirical Approach

- Specification of the Cointegration Regression 3,4 (p.26)

$$p_t = \beta_0 + \beta_1 Trend_t + \beta_2 NPV_t + e_t \qquad (15)$$

Economic interpretation that you relax the restriction on the coefficient of the DPV of land of one ?

$\beta_2 = 1$ imply Equation (6).

$\beta_2 > 1$, $\beta_2 < 1$???

- Should test whether or not the coefficient of the DPV is one (instead of 0). (In fact, its coefficient is significantly defferent from one in many case.)

- Can the trend term represent the structural decline in demand for lands due to the changes in the economic structure?

  deterministic? I think that this is represented by the stochastic.

- Estimation of Cointegrating Vectors

  p.30 "DOLS is the ordinary least squares method with leads and lags of the dependent variables" or   p.29
          ???

  $\Rightarrow$ the OLS method with **leads** and lags of **the first difference** of the **regressors**!!
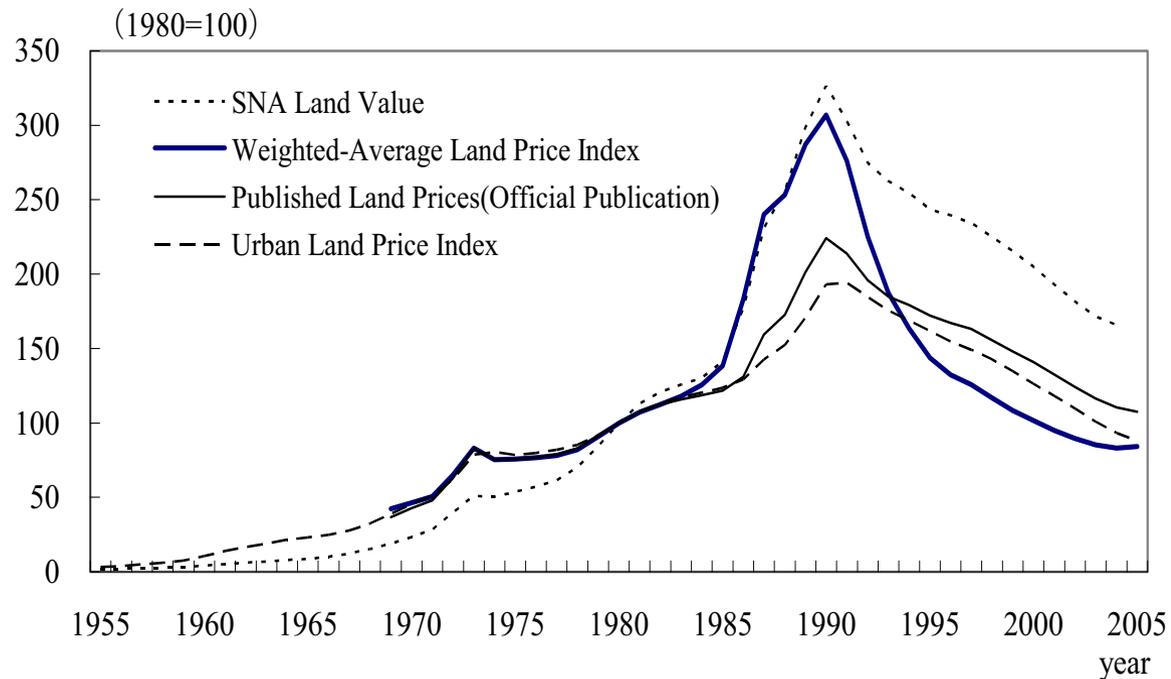
- **Estimation of Error-Correction Models**

$$\Delta p_t = \beta_0 + \beta_1 EC_{t-1} + \beta_2 \Delta NPV_t + \beta_3 \Delta pop_t + \beta_4 \Delta c_t + \epsilon_t$$

I recomend IV estimation, instead of OLS (because ΔNPV_t etc is not exogenous), or OLS estimation including some lags of Δpop_t, ΔNPV_t and Δc_t instead of $\Delta NPV_t, \Delta pop_t$, and Δc_t.

Comment 3: Are the weighted-average land price really appropriate?

(Figure 1) Long-Term Trends of Land Price Indicators[5]

Sources: Cabinet Office, "National Accounts"; Ministry of Land, Infrastructure and Transportation,
"Published Land Prices,"; Japan Real Estate Institute, "Urban Land Price Index."

- "If we used the official land price indicators, we would underestimate the impact of the land price fluctuations for high land price areas $\cdots$"

$\Leftarrow$ I think that, if we used the weighted-average land price indicators, we would underestimate the impact of the land price fluctuations for low land price areas, and overestimate the impact of the land price fluctuations for high land price areas. I think that this is arbitrary.

Is it a problem so much that the weights of the official land price indicators are in line with the population weights?