Hitotsubashi-RIETI International Workshop

Demography, Credits and Property Prices:
Evidence from a Panel of Diverse Economies

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Overview 1/2

Economic Theory

- Mankiw-Weil(1989)+Regional Science and Urban Economics (1991)

  Expectations are "Rational" or Perfect Foresight on the Average

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  Supply of the Assets Is Elastic

  ⇒Change in demography does not affect on the assets' price.

  - In the case of supply of the asset is inelastic (Land),

  ⇒Long-term trends are explained (Very long run portfolio choice model). However, insufficient for explaining the medium term or the business cycle.

  - Are people's long-run forecasts such as those about demography are "Rational" Expectations (or Perfect Foresight on Average)?

    - The answer is not rational.

      ⇒

      Demography makes a difference even in a short run. (Nishimura 2016)

Overview

- The purpose of the study
  - Examination to hypothesis "demography matters on short-run property prices" for diverse economies/countries?

  (1)How will the changes in population makeup (whether population bonus or onus) affect the property prices?

  (2) What is the interaction between demographic factors and credit conditions?

  (3) Is there a confounding cyclical component in property prices?

- Data
  - Using panel data from 20 economies for the period 1971-2015 (Five Asia-Pacific, Twelve European, Two North American, One African)

Findings

①Demographic composition has significant impacts on residential property prices.

- The young dependency ratio has strong positive and the old dependency ratio has strong negative.

②When demographic bonus is coupled with easy credit, RPPI are substantially higher than otherwise.

③In the short-run movement of RPPI, a sizable effect of cyclical factors is found, in addition to the effect of the change in long run fundamentals.

Comments

- Conditions of Mankiw-Weil(1989)

 Demographic dynamics has no effects on asset prices:
  - Expectations are "Rational" or Perfect Foresight on the Average
  - ＋
  - Supply of the Assets Is Elastic

- There are many situations where these conditions are violated.
  - Immigration
    It is difficult to predict the change of immigrants.
    - Schengen Agreement（1995～）
  - Change of policy system
    - German unification, Return of Hong Kong
  - Change of regulation in land use

  ⇒These factors may have large influences on results of the study.

Questions 1/4

Structural Changes

- These factors cause structural changes in effects of demography on property prices each country.
    - EX）German unification probably brought about rapid changes in population composition and land supply.

- Overview of demographic and property price trend each country.
    - Whether countries are properly selected in this study?
- Check Robustness
    - Try some regression only using short term data. ex) after 1990.
    - In the current study, only three patterns :1973-2015, 1974-2015 and 1975-2015.
    - But restrictions on data size maybe severe.

- Check Data making process
    - For example, in German case, is the handling of RPPI data appropriate? According to explanation in the end of the document, the study used West Germany data before the unification and whole Germany data after the unification.

Questions

Specification problems

- Among the countries that agreed to the Schengen agreement, people can move freely.

- In this situation, what is the meaning of data on population composition by country?

Questions

Specification problem

- Cross-sectionally correlation
  - In addition to geographical proximity, the Schengen agreement may have strengthened cross-section correlation among EU countries.
  - O'Connell（1998）shows that there is a large bias in unit root test with cross-sectionally correlation.

  ⇒In this study the problem is resolved by CIPS test.

  - How about in the cointegration analysis ?
    - In weighed FMOLS and weighed DOLS, only heterogeneities are considered individually.
  - Gengenbach, Palm and Urbain (2006) shows that Kao (1999) test and Pedroni (2004) test are not appropriate in the cases of cross-sectionally correlation.
  - For estimation of cointegration model, Bai and Kao(2006) and Bai, Kao and Ng(2009) are better.

Questions

Reverse causality problem

- Several micro data studies: Lovenheim and Mumford(2013), Dettling and Kearney(2014), Iwata and Naoi（2017）
  - An increase in housing wealth, driven by unexpected shocks to house prices, exerts a positive effect on the birthrates of homeowners.

- Need for Granger causality tests.

Another approach by micro-econometrics

- Examination of the relationship between change in house price and demography by using discontinuities:
  - Impact on the real estate market caused by sudden and unexpected changes in population composition
    - ✓ Schengen agreement
    - ✓ Change in immigration policy
    - ✓ Return of Hong Kong
  - Difference in elasticities of land supply.
    - ✓ land use restrictions
    - ✓ inhabitable land area

References

- Bai, Jushan, and Chihwa Kao. 2006. On the estimation and inference of a panel cointegration model with cross-sectional dependence. contributions to Economic Analysis 274: 3-30.

- Bai, Jushan, Chihwa Kao, and Serena Ng. 2009. Panel cointegration with global stochastic trends. Journal of Econometrics 149.1 (2009): 82-99.

- Dettling, Lisa J., and Melissa S. Kearney. 2014 House prices and birth rates: The impact of the real estate market on the decision to have a baby. Journal of Public Economics 110: 82-100.

- Gengenbach, Christian; Palm, Franz C.; Urbain, Jean-Pierre. 2006. Cointegration testing in panels with common factors. Oxford Bulletin of Economics and Statistics, 68.s1: 683-719.

- Iwata, Shinichiro, and Michio Naoi. 2017.The asymmetric housing wealth effect on childbirth. Review of Economics of the Household 15.4 : 1373-1397.

- Kao, Chinwa D. 1999. "Spurious Regression and Residual-Based Tests for Cointegration in Panel Data," Journal of Econometrics, 90, 1-44.

- Lovenheim, Michael F., and Kevin J. Mumford. 2013 Do family wealth shocks affect fertility choices? Evidence from the housing market. Review of Economics and Statistics 95.2: 464-475.

- Mankiw, N. Gregory, and David N. Weil. 1989. The baby boom, the baby bust, and the and the housing market. Regional Science and Urban Economics 19 (2): 235-58.

- Nishimura, Kiyohiko. G. 2016. Three "seismic shifts" in the global economy and the policy challenges they pose. International Finance 19 (2): 219-29.

References

- O'Connell, Paul GJ. 1998. The overvaluation of purchasing power parity. Journal of international economics, 44.1: 1-19.

- Pedroni, Peter. 2004. Panel Cointegration: Asymptotic and Finite Sample Properties of Pooled Time Series Tests with an Application to The PPP Hypothesis. Econometric Theory, Cambridge University Press, vol. 20(03), pages 597-625, June.