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The Interaction between Mortgage Financing and Housing Prices in Greece

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Abstract

Although the close empirical relationship between the evolution of mortgage lending and housing prices is well established in the literature, the direction of causation is less clear from a theoretical standpoint. We apply multivariate cointegration techniques in order to address this issue empirically for the Greek economy. Our results, based on a cointegration relationship that we identify as a mortgage loan demand equation, indicate that housing prices do not adjust to disequilibria in the market for housing loans. This suggests that in the long run the causation does not run from mortgage lending to housing prices. In the short run we find evidence of a contemporaneous bi-directional dependence.

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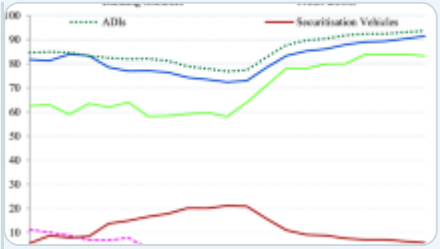

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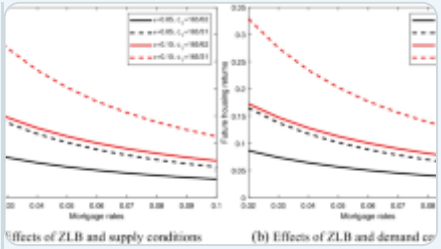

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Notes

1. The role of credit developments in driving asset prices has been stressed, for example, by Kindleberger (1996).

2. For a discussion of the role of housing in the monetary policy transmission mechanism, see Mishkin (2007).

3. See, for example, Bernanke and Gertler (2001) and Cecchetti et al. (2000) for two representative, opposite views on this issue.

4. A more detailed analysis of developments in the Greek housing market during this period is provided in “The Markets for Housing Loans and Housing in Greece: Stylized Facts” section.

5. See, for example, Himoniti-Terroviti (2005).

6. See also, Hofmann (2004).

7. The specialised credit institutions engaged in mortgage lending at the time were the Deposits and Loans Fund, the National Mortgage Bank of Greece, the National Housing Bank of Greece, the Postal Savings Bank and Aspis Bank.

8. For a discussion of the deregulation of housing finance from an international perspective, see Girouard and Blöndal (2001) and Green and Wachter (2007).

9. To the extent that property developers in turn financed themselves through bank loans, this practice in effect amounted to indirect bank lending to housing purchasers.

10. This relates to housing loans with a floating interest rate or a rate fixed for a period of less than 1 year. Such loans represent the majority of housing loans in Greece.

11. See Follain (1990) for a review of the literature on mortgage choice prior to 1990.

12. Examples of such innovative mortgage loan products include “accordion” loans (loans where the duration is adjusted so as to maintain a constant monthly repayment in the face of interest rate changes), grace period loans, loans with capped interest rates, etc. For an analysis of the impact of mortgage innovations on homeownership, see Doms and Krainer (2007) and Chambers, Garriga, and Schlagenhauf (2007).

13. The increase in the homeownership rate, however, is far from commensurate to the increase in mortgage indebtedness. This suggests that the growth in mortgage lending was mainly related to a switch in house purchase financing patterns e.g. from savings and transfers from family members, to bank loans.

14. With the exception of the year 2000, which was possibly related to the aftermath of the bust in the stock prices listed on the Athens Exchange, following the peak observed in 1999. On the interaction between stock price and housing price developments in Greece, see Georgakopoulos et al. (2005) and Kapopoulos and Siokis (2005).

15. The building permits series appears to lead residential investment significantly, since there is often a considerable lag between obtaining the building permit and actually incurring the building costs.

16. In our empirical analysis we also considered variables that were thought to be relevant for the housing market (e.g. construction costs, measures of construction activity). However, we were not able to establish the existence of a second cointegration relationship, capturing the long-run equilibrium of the housing market. These variables were also considered in the short-run analysis, again without yielding significant results. Hence, these variables are not discussed in this section. For a cointegration analysis of the housing market, see for example Harter-Dreiman (2004).

17. Residential property prices are based on a housing price index that is not

"constant quality" i.e. does not distinguish genuine price appreciation from improvements in housing quality. However, an alternative residential property price index with sufficient history is not available. Given the relatively short time period spanned by the sample available improvements in quality are not likely to be large and as a result we do not expect this shortcoming to have a serious effect on our results.

18. For this series, data prior to 1993:Q4 are not available.

19. We revisit this assumption and test it statistically using the conditional model, i.e. the model where the existence of one cointegration vector is imposed. The assumption is clearly not rejected (p-value of 0.765).

20. In the case of only one cointegration relationship, α and β are in fact a column and a row vector, respectively.

21. Although the individual equations easily pass the tests for autocorrelation, the VAR fails the vector autocorrelation test. This conflicting result may be due to the overparameterisation of the vector test, which results in low power of the test, given the small size of our sample. Under small sample sizes Jacobson et al. (2001) show that the asymptotic reference values used for such specification tests are poor approximations to the actual small sample distributions that would be required to draw reliable conclusions.

22. The estimated elasticities are not strictly comparable to the those reported in Gimeno and Martínez-Carrascal (2006), as the latter use the credit aggregate in per household terms.

23. With the exception of Canada (0.23) and Spain (0.04 but not significant), Hofmann also reports a negative coefficient for property prices in the case of Germany.

24. The estimation results at this stage are not reported for brevity.

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Appendix

Data used for the empirical analysis

l: Outstanding amount of total housing loans, including securitized loans. Seasonally adjusted using the X12 ARIMA module of the OxMetrics econometrics suite. Deflated using the CPI and expressed in logs. Source: Bank of Greece.

hp: Housing prices. Weighted index of housing prices in Greek urban areas, defined as cities with a population of over 500,000 (Athens and Thessaloniki). Seasonally adjusted using the X12 ARIMA module of the OxMetrics econometrics suite. Deflated using the CPI and expressed in logs. Source: Bank of Greece.

y: real GDP. Seasonally adjusted using the X12 ARIMA module of the OxMetrics econometrics suite. Expressed in logs. Source: National Statistical Service of Greece.

r: interest rate on housing loans with variable rate or rate fixed for a period of less than 1 year. Expressed in real terms by subtracting from the nominal rate the annual growth rate of the CPI. Source: Georgakopoulos et al. 2005 (1993:Q4–1998:Q4) and Bank of Greece (1999:Q1–2005:Q2).

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