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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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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.

References

Bernanke B., Blinder A. (1988) Credit, money, and aggregate demand. *American Economic Review: Papers and Proceedings 78*:435–439

Google Scholar

Bernanke B., Gertler M. (1989) Agency costs, net worth, and business fluctuations. *American Economic Review 79*:14–31

Google Scholar

Bernanke B., Gertler M. (2001) Should central banks respond to movements in asset prices? *American Economic Review 91*:253–257

Google Scholar

Bernanke B., Gerlter M., Gilchrist S. (1999) The financial accelerator in a quantitative business cycle framework. In: Taylor J. B., Woodford M. (eds) *Handbook of macroeconomics, vol. 1*.. North-Holland, Amsterdam

Google Scholar

Bank for International Settlements (2001) *71st Annual Report*. Bank for International Settlements, Basel

Google Scholar

Borio C., Kennedy N., Prowse S. (1994) *Exploring aggregate asset price fluctuations across countries*. Bank for International Settlements, Basel BIS Economic Papers No. 40

Google Scholar

Borio C., Lowe P. (2002) *Asset prices, financial and monetary stability: exploring the nexus*. Bank for International Settlements, Basel BIS Working Papers, No. 114

Google Scholar

Brueckner J., Follain J. (1989) ARMs and the demand for housing. *Regional Science and Urban Economics 19*:163–187

Article Google Scholar

Calza A., Gartner C., Sousa J. (2003a) Modelling the demand for loans to the private sector in the euro area. *Applied Economics 35*:107–117

Article Google Scholar

Calza A., Manrique M., Sousa J. (2003b) *Aggregate loans to the euro area private sector*. ECB, Frankfurt Working Paper, No. 202

Google Scholar

Cecchetti S. G., Genberg H., Lipsky J., Wadhwani S. (2000) *Asset Prices and Central Bank Policy. Geneva Report on the World Economy 2*. International Centre for Monetary and Banking Studies, Geneva and Centre for Economic Policy Research, London

Google Scholar

Chambers, M. S., Garriga, C., Schlagenhauf, D. (2007) *Equilibrium mortgage choice and housing tenure decisions with refinancing*. Federal Reserve Bank of St. Louis, St.Louis Working Paper Series, No. 2007-049A

Google Scholar

Davis E. P., Zhu H. (2004) *Bank lending and commercial property cycles: some cross-country evidence*. Bank for International Settlements, Basel BIS Working Papers, No. 150

Google Scholar

Dickey D., Fuller W. (1981) Likelihood ratio statistics for autoregressive time series with a unit root. *Econometrica 49*:1057–1072

Article Google Scholar

Doms M., Krainer J. (2007) *Innovations in mortgage markets and increased spending on housing*. Federal Reserve Bank of San Francisco, San Francisco Working Paper Series, No. 2007–05

Google Scholar

Fase M. M. G. (1995) The demand for commercial bank loans and the lending rate. *European Economic Review 39*:99–115

Article Google Scholar

Fitzpatrick T., McQuinn K. (2004) *House prices and mortgage credit: empirical evidence for Ireland*. Central Bank and Financial Services Authority of Ireland, Dublin Research Technical Paper, No. 5/RT/04

Google Scholar

Follain J. (1990) Mortgage choice. *Real Estate Economics 18*:125–144

Article Google Scholar

Georgakopoulos, V., Nounis, C., Spanos, L. (2005) Housing and stock market in Greece during the period 1994–2004: overview and empirical evidence. *Proceedings of the 2nd International Conference in Applied Financial Economics*, Samos

Gerlach S., Peng W. (2005) Bank lending and property prices in Hong Kong. *Journal of Banking & Finance 29*:461–481

Article Google Scholar

Gimeno R., Martínez-Carrascal C. (2006) *The interaction between house prices and loans for house purchase. The Spanish case*. Banco de España, Madrid Documentos de Trabajo, No. 0605

Google Scholar

Girouard, N., Blöndal, S. (2001) *House prices and economic activity*. OECD, Paris Economics Department Working Papers, No. 279

Green, R., Wachter, S. (2007) *The housing finance revolution*. Paper presented at the Federal Reserve Bank of Kansas City 31st Economic Policy Symposium: Housing, Housing Finance and Monetary Policy, Jackson Hole, Wyoming

Greenslade J., Hall S., Henry S. G. B. (2002) On the identification of cointegrated systems in small samples: a modelling strategy with an application to UK wages and prices. *Journal of Economic Dynamics & Control 26*:1517–1537

Article Google Scholar

Harter-Dreiman M. (2004) Drawing inferences about housing supply elasticity from house price responses to income shocks. *Journal of Urban Economics 55*:316–337

Article Google Scholar

Himoniti-Terroviti S. (2005) *Recent Developments in the Greek Housing Market*. Centre of Planning and Economic Research, Athens Report No. 43 (in Greek)

Google Scholar

Hofmann B. (2001) *The determinants of private sector credit in industrialised countries: do property prices matter?*. Bank for International Settlements, Basel Working Papers, No. 108

Google Scholar

Hofmann B. (2004) The determinants of bank credit in industrialized countries: do property prices matter? *International Finance 7*:203–234

Article Google Scholar

Jacobson T., Jansson P., Vredin A., Warne A. (2001) Monetary policy analysis and inflation targeting in a small open economy: A VAR approach. *Journal of Applied Econometrics 16*:487–520

Article Google Scholar

Johansen S. (1988) Statistical analysis of cointegration vectors. *Journal of Economic Dynamics & Control 12*:231–254

Article Google Scholar

Johansen S. (1991) Estimation and hypothesis testing of cointegration vectors in Gaussian vector autoregressive models. *Econometrica 59*:1551–1581

Article Google Scholar

Johansen S. (1992) Cointegration in partial systems and the efficiency of single-equation analysis. *Journal of Econometrics 52*:389–402

Article Google Scholar

Johansen S. (1995) *Likelihood-Based Inference in Cointegrated Vector Autoregressive Models*. Oxford University Press, Oxford

Book Google Scholar

Kapopoulos P., Siokis F. (2005) Stock and real estate prices in Greece: wealth versus ‘credit-price’ effect. *Applied Economics Letters 12*:125–128

Article Google Scholar

Kindleberger C. (1996) *Manias, panics and crashes: A history of financial crises*, 3rd edn. Wiley, New York

Google Scholar

Kiyotaki N., Moore J. (1997) Credit cycles. *Journal of Political Economy 105*:211–248

Article Google Scholar

Mishkin, F. (2007) *Housing and the monetary transmission mechanism*. Paper presented at the Federal Reserve Bank of Kansas City 31st Economic Policy Symposium: Housing, Housing Finance and Monetary Policy, Jackson Hole, Wyoming

Pesaran H., Shin Y., Smith R. (2000) Structural analysis of vector error correction models with exogenous I(1) variables. *Journal of Econometrics 97*:293–343

Article Google Scholar

Urbain J. P. (1992) On weak exogeneity in error correction models. *Oxford Bulletin of Economics and Statistics 54*:187–207

Google Scholar

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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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