

Macroeconomic Implications of Housing Prices: The Case of Spain

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The Spanish experience

- The crisis has taught us that housing and the macroeconomy are interconnected
 - Housing is a key ingredient to understand the scope of the recent financial crisis
 - Housing was crucial to shape the recovery
- This statement is especially true in Spain, where the housing market experimented a very strong boom and bust as compared to many of its EMU partners

Importance of the Spanish housing market

- The housing market has been the main driver of the Spanish economy over the long expansionary cycle that ended in 2007
 - The construction sector had a very high weight over the total hours worked in Spain (13%) in the period 1996-2007
 - The weight of the sector was much lower in other EU economies (8%) or the US (7%).
- The sector, despite the crisis, has remained very important in the Spanish economy
 - 11% of the hours worked in the period 2008-2010

Idiosyncrasies of the Spanish housing market

- There were important idiosyncrasies of the Spanish housing market which were different to its EMU partners
 - Bank dominated economy
 - In Spain the vast majority of borrowers had variable-rate mortgages
 - The rental share was one of the lowest in the EU
- These characteristics made that changes in housing prices and interest rates had strong effects on the real economy

On the positive side...

- Spain was pioneer in the use of macroprudential policies among OECD countries
 - It implemented dynamic provisions in mid-2000, short after it joined the monetary union
 - Banks should build up a buffer in good times to be used in bad times to protect its solvency.

Modelling the Spanish Economy

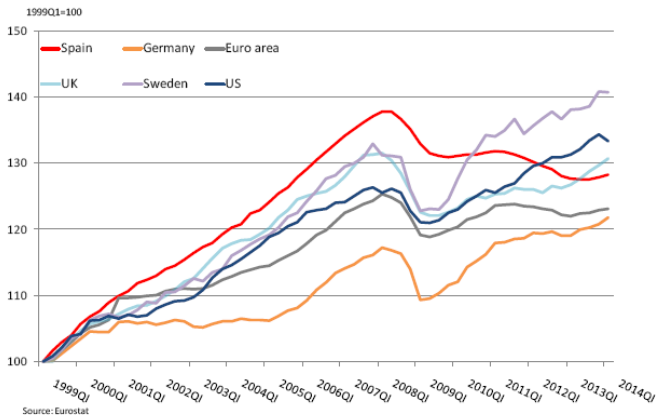
- Models can help us understand the macroeconomic implications of housing markets
 - DSGE model calibrated for the Spanish economy that considers both demand and supply aspects of housing markets
 - Interactions between financial and real variables
 - Borrowers and savers
 - Collateral constraints, wealth effects
 - Fixed and variable-rate mortgages
 - Rental markets
 - Macroprudential policies

The housing boom in Spain

- The Spanish economy registered a remarkable output growth during fourteen consecutive years before the Great Recession
- At the same time, Spain experienced one of the most important housing booms among developed economies
- In fact, the housing boom was one of the main engines for economic growth in Spain
 - During the period 2002–2006 the growth of the construction sector explained around 20 % of GDP growth
 - During many years, the production of new dwellings in Spain was higher than the sum of the new dwellings in Germany, France and Italy

Real GDP evolution

Figure 1. Real GDP evolution in selected countries



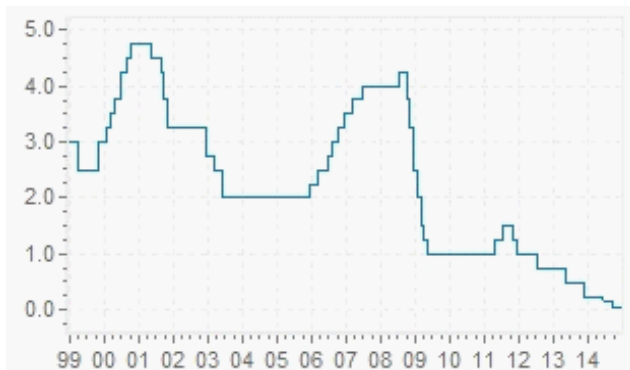
Causes of the boom

- Cheap and abundant financing and intensive immigration flows gave rise to an overdevelopment of the residential construction sector
 - Between 1999 and 2007 the weight of banking credit to the construction and real estate sector increased by 30 percentage points
 - The proportion of employment in those sectors increased from 5% to 13%
 - Housing prices in real terms rose by 168% on a cumulative basis

Mortgage rates

- Spanish financial institutions offered the lowest mortgage rates of the Euro area
 - During the period 2003–06 the average mortgage rate in the Euro area was 4.51 while the average in Spain was 3.71
 - The average Euro area mortgage rate was 21 % higher than the Spanish counterpart
- Given this small loan spread in Spain, the competition took place through massive origination of mortgage loan principals
- This competitive pressure implied that managers of financial institutions could only increase profits drastically by originating a large number of new mortgages

Mortgage rates (2)



Interest rates in Spain (Source Bank of Spain)

Macroeconomic effects

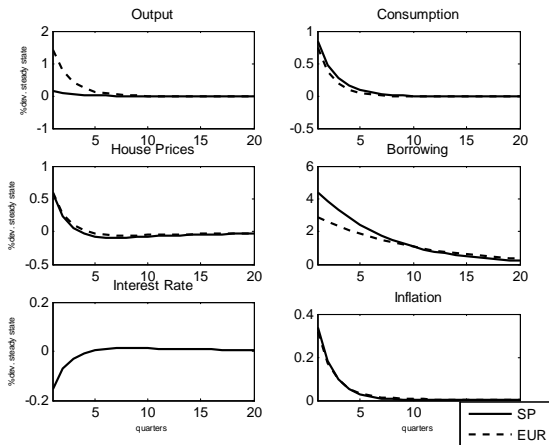


Figure: Impulse Responses to an Interest rate shock in the Euro area. Spain versus rest of the Euro zone.

The crisis

- In the summer of 2007 the economies of the United States and Western Europe experienced serious real estate problems, which were followed by a severe banking crisis
- In Spain, activity and employment in the construction sector started to diminish by the end of 2007
- At the turn of 2008, the decline in housing activity spread to the rest of the economy
- The international financial crisis and a strong deleveraging process resulted in the important cumulative reduction in GDP and a significant employment destruction.

Credit growth

Figure 10. Credit growth in the construction and real estate activities



And dynamic provisioning?

- Dynamic provisions helped banks to survive the crisis but they were not enough for some banks given the size of the shock
- A macroprudential tool like dynamic provisions should have been accompanied probably by other countercyclical tools

Macroprudential policy effects

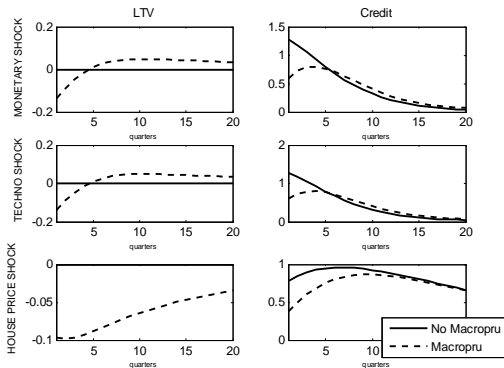


Figure: Impulse Responses to Monetary, Technology and Housing Demand Shocks. LTV and Credit in Spain. Macroprudential versus no macroprudential policy.

Policy response

- Initially, an expansionary fiscal policy was adopted and the financial sector was supported with liquidity measures
- Later on, with the emergence of the Euro area sovereign crisis, fiscal policy turned restrictive
- The accommodative monetary policy was counteracted by the segmentation of the financial markets in the Euro area

Policies aimed at enhancing rental markets

- Well developed and deep rental markets reduce the probability of housing bubbles
- In July 2012, the VAT rate on the purchase of new housing increase from 4% to 10%
- In January 2013 the 15% deduction in the income tax for house purchase was eliminated
- Some steps in order to improve the protection of landlords in Spain have also been taken

Effects of Fiscal Policies

SS effects of removing subsidy to housing purchases

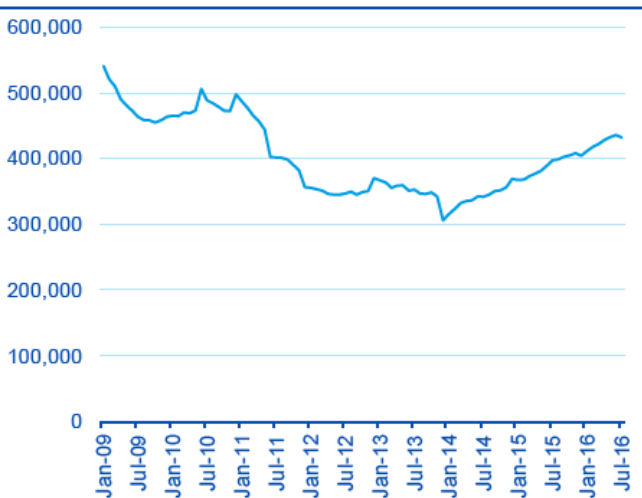
	$\tau_h = 0.15$	$\tau_h = 0$	Change
GDP	2.771	2.722	-1.80 %
House prices	0.490	0.450	-8.10 %
Labor	2.982	2.929	-1.78 %
Rental Share	0.116	0.166	5.0 p.p.
Share of housing w/ mortg	0.344	0.290	-5.35 p.p.
Rental over housing price	0.012	0.012	0.0 p.p.
Residential inv. over GDP	0.073	0.062	-1.06 p.p.
Constr. labor share	0.138	0.128	-1.1 p.p.
Domestic cons. over total	0.663	0.663	0.0 p.p.

Recovery

- In 2015 the Spanish economy consolidated the recovery begun in mid-2013
- The volume of new loans to households for home acquisition has continued to grow in 2016
- Housing starts and employment in the construction sector is evolving positively
- The positive forecasts of economic growth and the loose monetary policy of the European Central Bank enhance this positive trend
- The recovery in demand is reflected in a recovery in house prices

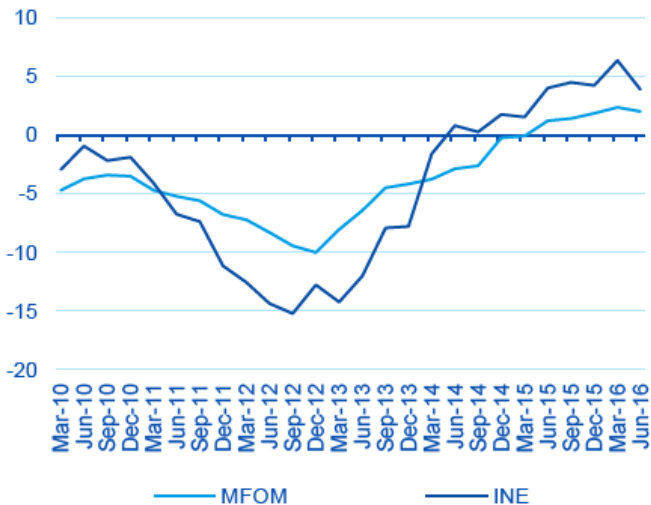
Sale of residential properties

Spain: sale of residential properties (12-month cumulative)



House prices

Spain: housing prices (% change YoY)



Towards a new boom?

- The construction sector has still a strong weight in the Spanish economy
- Improved price expectations will give a new boost to demand and this improvement should gradually be transmitted to pricing in the sector
 - Expectations of price appreciation are also a clear incentive to investment
 - Alternative assets offer relatively unattractive risk-adjusted returns
 - The current low interest rates and high volatility of financial markets are making alternatives less attractive.
- No macroprudential policies in place

Has anything changed with respect to the previous boom?

- The trend in the past few months shows some downward resistance, possibly due to the increasing weight of fixed rate mortgage loans
 - In 2012 fewer than 3.5% of mortgage loans were at fixed interest rates
 - In the second half of 2015 they have increased to an average of 10%
- The rental market size has increased due to policy measures

Wrapping up...

- Housing markets were the main engine for economic growth in Spain
- Spanish housing markets suffered a very strong boom and bust
- Variable rates and a low rental share made Spanish housing markets more prone to housing bubbles
- Dynamic provisioning provided some help but was not enough to avoid the crisis
- Policies aimed at enhancing the rental market and an increased proportion of fixed-rate mortgages may have improved the situation
- However, low interest rates, lack of macroprudential policies and expectations about increasing housing prices may bring another housing boom