

Housing Cycles: Stylised Facts and Policy Challenges

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1. Seven years after the start of the global financial crisis (GFC), housing markets are slowly recovering in most OECD countries, albeit at a different pace. Nevertheless, the current state of housing systems creates serious policy challenges. The very low policy rates, which are necessary to stabilise the economy after the GFC, risk fuelling new bubbles. Low interest rates are pushing up household debt in countries where access to credit is relatively easy, raising concern about long-term sustainability and vulnerability to hikes in interest rates, decreases in income and asset prices or higher unemployment. Beyond credit risk, which is usually moderate on mortgages, funding structures involving important maturity or currency mismatches can prove fragile in financial turbulences. Furthermore, indebted households facing rising interest payments or unexpected losses in revenue are bound to reduce consumption, impacting economic activity, employment and possibly the financial system through second round effects. Financial authorities are increasingly turning to macro-prudential instruments to mitigate such risks. While these instruments are promising, they are still largely untested in OECD countries. Careful implementation and monitoring will be necessary to prevent future housing crises with destabilising effects on the wider economy and the financial system.
2. The deep economic downturn has heightened stress on housing systems. Construction has dropped sharply in most OECD countries, including some where there is a structural shortage of dwellings. Constrained government finances tend to restrict support for affordable housing. Shortages and high cost of housing are not only causing social hardship, weighing on household finances and possibly reducing labour mobility, they also tend to exacerbate housing price volatility. A holistic approach to housing issues is needed to achieve at the same time financial stability and decent housing conditions for all. The two dimensions are interrelated, as structural features of housing markets influence their resilience to shocks coming from the economy or the financial system.

¹ The views expressed in this paper are those of the author and do not necessarily reflect those of the OECD or its member countries.

Housing Markets Are Recovering in Most OECD Countries

3. Table 1 provides a snapshot of the most recent real housing price orientations across the OECD. Apart from Japan, where land prices have been declining for over two decades, ongoing housing price declines are concentrated in the euro area, notably its southern periphery.² Weak macroeconomic conditions and financial sector fragilities are weighing on housing demand in these countries, worsening the downturn where housing bubbles have burst (e.g. Greece, Spain) and triggering price falls even where housing price increases had remained moderate during the expansion (e. g. Italy, Portugal).
4. After spectacular tumbles, housing prices seem to have bottomed out in Denmark and most OECD countries of Central and Eastern Europe. Some of the countries which had experienced a housing market collapse are now seeing a fairly strong rebound in prices. They include Estonia, Iceland, Ireland and the United States. In New Zealand and the United Kingdom, where the fall had been less severe, real prices are now close to their pre-crisis levels.

*Table 1: Current Housing Price Orientation in OECD Countries
(as of September 2014)*

Continued fall	Greece (-42), Italy (-23), Spain (-38), Slovenia (-27)
Moderate fall	France (-6), Finland (-3), Japan (-9), Portugal (-10)
Broadly stable	Belgium (+3), Czech Republic (-11), Denmark (-27), Hungary (-34), Korea (-3), Luxembourg (+7), Mexico (-1), Netherlands (-24), Slovakia (-28)
Moderate increase	Austria (+22), Canada (+14), Germany (+18), Norway (+13), Sweden (+4), Switzerland (+26)
Firm recovery	Estonia (-34), United Kingdom (-9), Iceland (-27), Ireland (-44), New Zealand (+1), United States (-18)
Rapid increase	Australia (+8), Israel (+58)

In parenthesis, percentage change in real housing prices relative to peak in 2006-08.

Source: OECD and national sources.

5. In many countries, the global financial and economic crisis has not led to a sharp correction in housing prices. In countries with a solid financial system, low interest rates have supported prices, which are often high by historical standards. This is in particular the case of Australia, Canada and some Nordic countries. Prices are vulnerable to a normalisation of interest rates from their currently very low levels. Austria, Germany and Switzerland, which were not part of the global housing boom, now experience a steady expansion.

² Land prices are used as a proxy for Japan, as no long housing price series is available for the whole country.

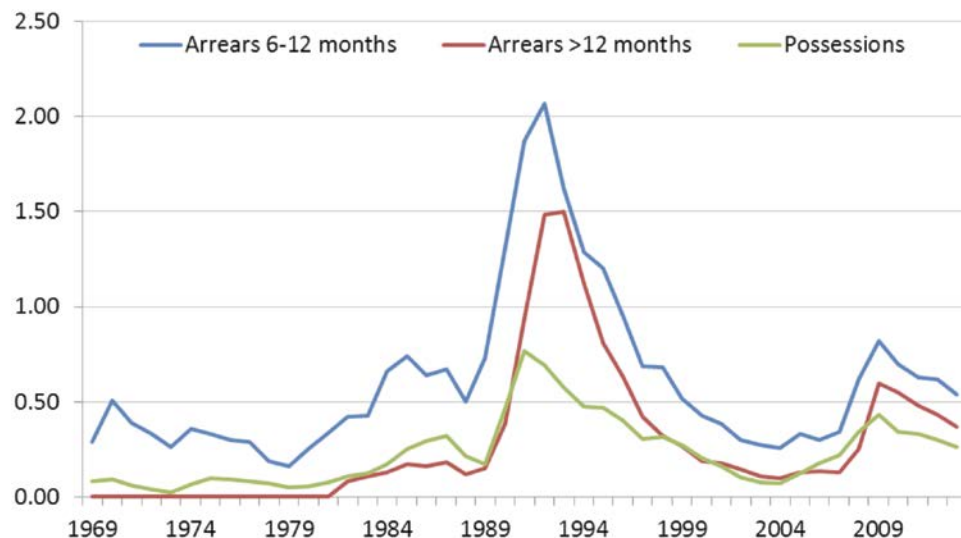
6. In the countries where a construction boom had created large over-supply, residential investment fell spectacularly. The fall has been even more spectacular in residential investment than in housing prices. But residential investment also contracted in countries where housing supply was already fairly tight, like the Netherlands and the United Kingdom, worsening structural housing shortages. Unsurprisingly, the pick-up in housing demand as mortgage market conditions improved in the United Kingdom was met by rapid price increases.

Mortgage Delinquencies Reflect Lending Practices and Economic Conditions

7. In the run up to the GFC, mortgage lending increased spectacularly in most OECD countries. In many cases, the expansion was supported by overly optimistic expectations about future economic and housing price developments. The crisis resulted in rising arrears, although with large differences across countries. Foreclosures rose sharply in the United States, but much less in other countries, partly as a result of institutional differences, state interventions and lender forbearance. Variations in mortgage delinquencies across OECD countries reflect lending practices during the boom, institutional settings, housing price developments and the financial situation of indebted households. Defaults early into the crisis result mainly from lax underwriting standards, in particular “equity lending” where the ability to repay is contingent on rising housing prices (e.g. US subprime), or the prevalence of mortgages tied to volatile measures such as inflation (e.g. Iceland) or foreign currencies (e.g. Hungary, Iceland). As the crisis deepened, falling income and rising unemployment generated defaults in more countries (e.g. Italy, Portugal).
8. In many countries, the share of non-performing mortgages has only risen modestly. A general factor which has helped prevent larger increases in mortgage delinquencies is low interest rates. The transmission of lower policy rates to mortgages is especially strong in countries where variable rates are prevalent. The United Kingdom provides an illustration. During the downturn of the early 1990s, arrears and possessions increased markedly, as high interest rates pushed up the loan servicing burden. During the latest recession, low interest rates contained the increase in arrears, although a smaller increase in unemployment also contributed (chart 1).

Chart 1: Arrears and Possessions in the United Kingdom

% of outstanding mortgages



Source: Council of Mortgage Lenders.

Non-Performing Loans to Construction and Real Estate Developers Weigh Heavily in Some Countries

9. In most downturns associated with tumbling housing prices, financial institution losses related to commercial property mortgages and loans to developers are much higher than those on residential mortgages. In countries where construction was booming before the crisis, notably Ireland and Spain, non-performing loans have weighed heavily on the banking sector and public finances, as governments stepped in to rescue distressed financial institutions. In Ireland, the government set up in late 2009 the National Asset Management Agency (NAMA), a state bank restructuring agency, which acquired 11,500 property development-related loans, with a nominal value of EUR 72.3 billion (46% of GDP) at an average haircut of 58%. Subsequent capital injections added to the gross direct fiscal cost of the banking crisis, which has been estimated at over 40% of GDP (OECD, 2011). Spain launched SAREB (Sociedad de Gestión de Activos Procedentes de la Reestructuración Bancaria) in July 2012 to remove distressed real estate assets from the balance sheets of troubled financial institutions. SAREB, which is owned for 55% by the private sector and for 45% by the government

(through the FROB, Fondo de Reestructuración Bancaria) received nearly 200,000 assets for an amount of EUR 50.7 billion euros (about 5% of GDP), of which 80% are financial assets and 20% property. Although NAMA and SAREB are likely to recoup part of the losses over time, final fiscal costs are bound to be high.

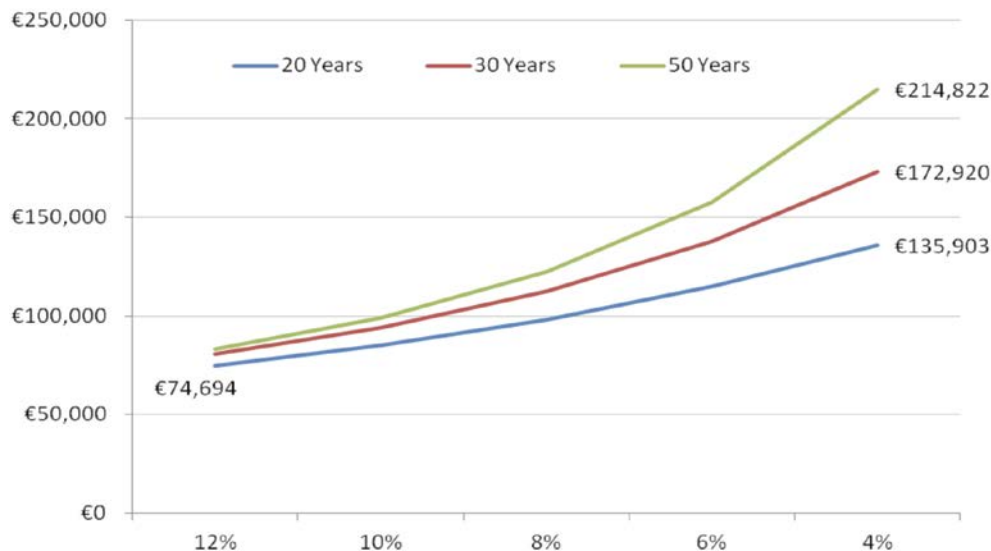
What Is Driving the Housing Cycle?

10. Cyclicalitv is a well-known feature of housing markets. Demand for housing is strongly influenced by business and financial cycles. The inertia of supply resulting from construction lags and backward-looking expectations generate hog-type cycles. Over the past two decades, interest rates, which are among the main drivers of housing prices, have declined markedly across the OECD. As inflation receded, nominal interest rates declined even more than real rates. Lower nominal rates ease borrowing constraints, as repayments become less frontloaded (Engelhardt, 1996). The creation of the euro area in 1999 led to a convergence towards German interest rates, which contributed to fuelling housing booms in peripheral countries.
11. The impact of lower interest rates was compounded by financial innovation, which took a variety of forms. To give a few examples seen in various countries, the maturity of loans lengthened, the share of adjustable-rate mortgages increased, caps on loan-to-value ratios were raised and deferred amortisation loans became more common. It is worth noting that the impact of financial innovations may vary with interest rates in a non-linear way. For example, the impact of lengthening the loan duration on borrowing capacity increases, all else equal, as interest rates decline (chart 2). A loan-to-value cap would increase the deposit required for larger loans, limiting the borrowing capacity of many, especially first-time buyers. However, during the boom, limits on loan-to-value ratios were often relaxed. This simple example illustrates how low interest rates and different types of financial innovations can combine to increase borrowing capacity significantly.³

³ For an evaluation of the impact of credit conditions on price-to-rent ratios in the United States, see Duca et al. (2011).

Chart 2: Borrowing Capacity for Various Interest Rates and Maturities

Capital corresponding to a EUR 10,000 annuity



Source: Author's calculations.

- While lower interest rates and easing of credit conditions can be seen as largely global drivers of the housing cycle, dwelling prices are also affected by a number of local factors, including on the demand side developments in household real disposable income, unemployment, demographics, taxation, housing price expectations and foreign demand, and on the supply side the profitability of construction, housing and land price expectations, planning and zoning regulations and infrastructure.

Housing Market Dynamics: a Stylised Representation

- Housing markets are characterised by delays in supply responses and backward-looking expectations. The model of the hog cycle, or cobweb model, offers a fairly good stylised description of housing market dynamics. Chart 3 and 4 illustrate housing price and quantity dynamics in the case of respectively low and high supply elasticities. In both cases, prices jump (from P₀ to P₁) as a result of a demand shock – which could result, for example, from a loosening of credit conditions – as supply is fixed in the short term. In the next period, quantities adjust in response to higher prices. At this point (P₁, Q₁), both prices and quantities overshoot their equilibrium level, but by a much wider margin

Chart 3: Housing Market Dynamics: Low Supply Elasticity

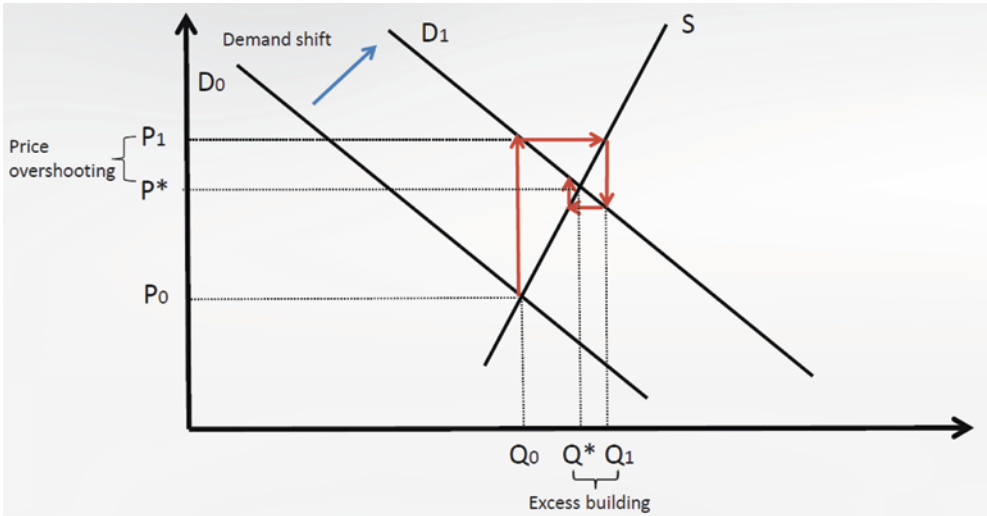
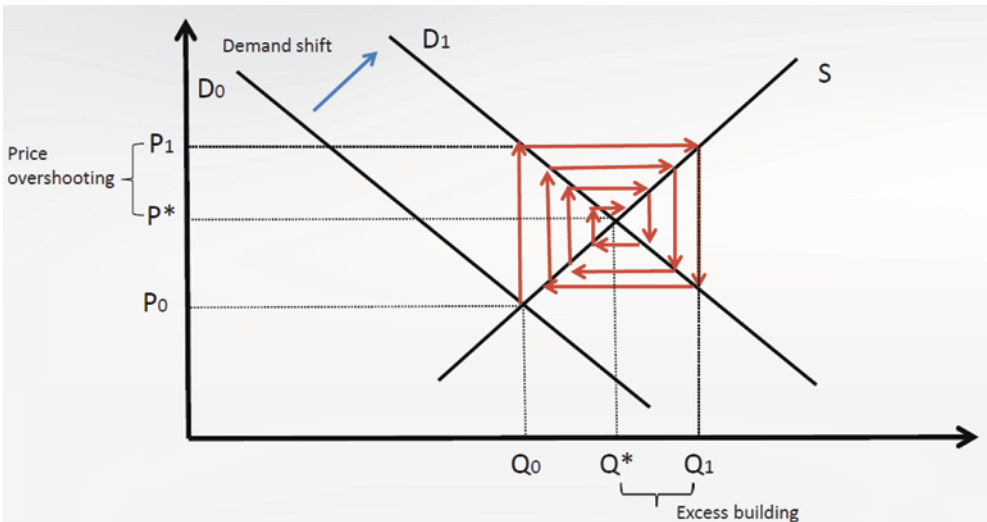


Chart 4: Housing Market Dynamics: High Supply Elasticity



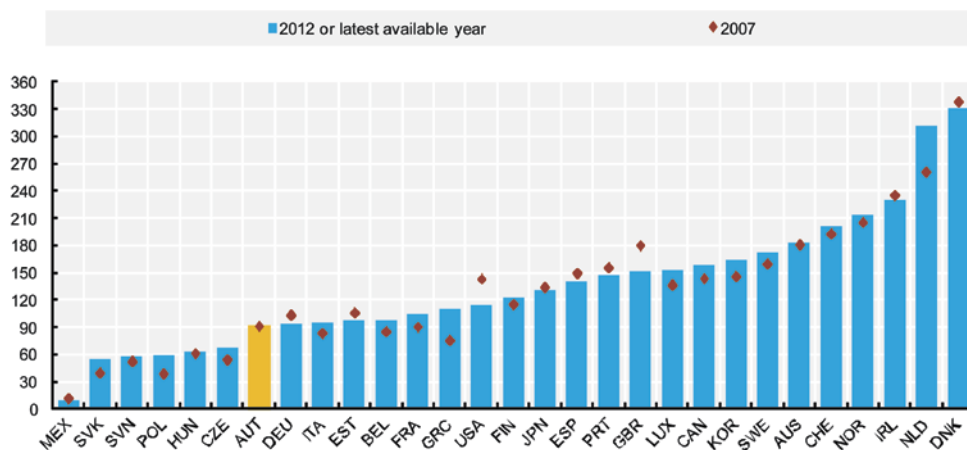
when supply is more elastic. While this example is very simplistic, it broadly illustrates developments over the latest cycle in countries where supply is tight (e.g. the United Kingdom), where prices eventually stabilised at a high level, and in countries which experienced building booms followed by a collapse in prices and construction (e.g. Ireland and Spain). The model explains fairly well how demand shocks can lead to instability when supply elasticity is high. This is of particular relevance from a financial stability point of view, as loans to developers have often been a source of significant losses for financial institutions. However, high supply elasticity results in a lower equilibrium price (P^*) and hence better affordability in the long run.

Policy Challenges

14. In many countries, housing prices remain high by historical standards relative to income. With a few exceptions, gross household debt has continued to increase faster than disposable income since the GFC and is mainly used to finance housing (chart 5). A high level of gross household debt is not in itself an indicator of financial risk, in particular because vulnerabilities depend both on the amount of assets and on the distribution of liabilities and assets across households. However, high debt may entail risks for households, the financial system and the wider economy. Credit risk on mortgages is generally moderate, although risky lending can generate substantial losses, as with US subprime mortgages and foreign currency loans in Hungary and Iceland. Micro-prudential regulators should remain vigilant about underwriting quality. Credit losses often follow a sharp deterioration in income and employment or an increase in interest rates. Maturity and currency mismatch in the funding of mortgages may create additional risks, as evidenced by the failure of several mortgage lenders using such funding structures during the GFC. Rapid debt expansion can create macroeconomic risk. The probability of recession increases as household debt rises above its trend and recessions associated with high debt tend to be deeper and more protracted than those where debt is lower (Sutherland et al., 2012). Macro-prudential tools, such as caps on loan-to-value ratios or risk weights on mortgages are the most promising instruments to prevent housing bubbles. However, they are largely untested in OECD countries and designing effective macro-prudential policy is one of the main challenges currently facing policymakers. Although monetary policy may be used in some cases to slow household debt accumulation, it is a very crude instrument for this purpose.

Chart 5: Gross Household Debt

as a percentage of net disposable income



Source: OECD National Accounts Statistics.

- Finally, housing challenges do not end with financial stability. Ensuring access to decent housing for all is also essential. Moreover, the stability of housing markets is not independent from their structural features, which are affected by a wide range of policies, including taxation, land-use planning, infrastructure, welfare, social housing and rental market regulations. Hence policymakers should adopt a holistic approach to housing issues.

Bibliography

- Duca, J. V., J. Muellbauer and A. Murphy (2011), House Prices and Credit Constraints: Making Sense of the US Experience, *Economic Journal*, Royal Economic Society, vol. 121(552), pp. 533–551.
- Engelhardt, G.V. (1996), Consumption, Down Payments, and Liquidity Constraints, *Journal of Money, Credit and Banking*, Vol. 28, No. 2, pp. 255–271, Ohio State University Press.
- OECD (2011), *OECD Economic Surveys: Ireland*, OECD Publishing.
- Sutherland, D., P. Hoeller, R. Merola and V. Ziemann (2012), Debt and Macroeconomic Stability, *OECD Economics Department Working Papers*, No. 1003, OECD Publishing.