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- Sectoral implications of external rebalancing
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II.4. House price imbalances and structural features of housing markets

House prices and housing markets feature prominently in the monitoring of macroeconomic imbalances in the euro area. The recently adopted Excessive Imbalance Procedure (EIP) will involve regular reviews of housing markets in Member States. ([56]) The EIP will be based on a scoreboard comprising a concise set of key macroeconomic variables, aimed at capturing external imbalances, differences in competitiveness, and internal imbalances. These variables will also include real house prices. ([57])

This section reviews the linkages between house prices and the rest of the economy and discusses a number of structural features of the housing and mortgage markets which are important for the stability of housing markets and of the broader macroeconomy.

Why should macroeconomists care about housing markets?

House prices are of interest for macroeconomic policy makers essentially for three reasons. First, fluctuations in house prices may have broader macroeconomic consequences, as house prices impact on the rest of the economy via wealth effects, fluctuations in residential construction, and the effects of those fluctuations on bank balance sheets and credit supply (see Box 1 for more details). Second, housing markets are essentially asset markets and can therefore be susceptible to speculation, periods of "irrational exuberance" and patterns of "boom and bust". Third, the structural features of housing markets (e.g. in terms of home ownership, mortgage market regulation and taxation) remain quite heterogeneous across euro-area Member States. This could be an important cause of differences in business cycle fluctuations across countries.

There is ample evidence of the strong cyclicality of house prices. In the OECD countries, during the period 1970-1995, the typical housing cycle featured 6 years of booming prices (with a cumulated growth of 40%) and around 5 years of correction (with a cumulated adjustment of 25%).

The most recent house price cycle has been particularly pronounced, with an average length of 9 years of price increases in the period preceding the global economic and financial recession. All euro-area countries except Germany, Austria, Portugal and Cyprus (due to the short period available) witnessed a cumulated growth in prices of over 40% during the expansion phase (see Table 1). However, the length and the speed of this expansion has shown significantly variations across countries, reflecting large differences in the structure of housing and mortgage markets, as well in macroeconomic conditions.

Since the second half of 2007, euro-area housing markets have clearly entered a phase of retrenchment, with an adjustment taking place in most Member States and cumulated falls in house prices in double-digit territory in some of them (IE, ES, CY, SK, EE). Again, big differences between Member State in the speed and strength of the downturn were a noticeable feature.

The large swings in house prices observed during the past years point to the existence of significant imbalances in the housing markets of some Member States in the years preceding the crisis. Measuring the magnitude of such imbalances is technically challenging. Housing imbalances can be defined in several ways, including in terms of (i) pronounced deviations of house prices from their fundamental values, or (ii) excessive house price volatility. While the latter can be observed directly, estimating the equilibrium house price is a more challenging task, because distinguishing between fundamental and non-fundamental sources of house price movements in real time is not straightforward. House price changes are driven by current, and expected future, "fundamentals" (e.g. demographic factors, improved productivity) or by deviations from the fundamentals (e.g. due to excessive credit provision). ([58])

([56]) On 15 March 2011, the (ECOFIN) Council reached a "general approach" on the Commission's proposal for a Regulation on the prevention and correction of macroeconomic imbalances : this paved the way for the trialogue discussions with the European Parliament under the co-decision procedure.

([57]) The indicator included in the scoreboard is the year-on-year change in real house prices. Although data on house price indices are provided by various institutions, the real estate market lacks a harmonized indicator fit for cross-country comparison. The only harmonised index is the Eurostat experimental house price index (HPI) which measures price developments of all residential properties purchased by households, both new and existing, independently of their final use and their previous owners. Only market prices are considered and the land component is included. The HPI currently covers the period 2005Q1-2010Q3 and 17 EU Member States. A recent Regulation on House Price Indices requires EU Member States to provide HPI data starting from 2012Q2.

([58]) Fundamentals can also deviate from their long-term or equilibrium values.

Box II.4.1: **Housing markets and the real economy**

This box reviews the three main channels through which house prices can affect the macroeconomy and economic growth.

1) Rising real estate prices can affect household consumption spending through a wealth effect, in the form of real estate valuations. Some empirical analyses suggest the impact of a significant fall in real estate prices may even be more important than an equivalent decline in stock prices, [1] though this finding is not unchallenged. [2]

2) Rising real estate prices relative to construction costs can stimulate housing construction through higher profitability. The reverse is true for falling house prices. A sudden decline in property prices renders investment less attractive and reduces the profitability of the construction sector. As a result, investment may dry up and contribute to an economic slowdown. This process is also often associated with an intersectoral substitution effect that leads to a re-allocation of resources between the tradable and the non-tradable construction sector. In a boom period, higher returns in the housing sector relative to the tradable sector attract production factors from the tradable sector and thereby limit the supply of tradable products. In a bust period, economic adjustment towards higher production in the tradable sector is required, and this is often associated with low growth and high unemployment during the transition period. Recent analysis by the European Commission supports this view of the importance of intersectoral substitution effects.[3]

3) Booms and busts in real estate markets are often correlated with large movements in monetary and credit aggregates with possible implications for macroeconomic imbalances and financial stability. Higher house prices (and therefore higher valued household collateral) reduce the influence of asymmetric information between borrower and lender and improve lending conditions. As lenders' willingness to supply credit increases, investment and consumer durable expenditure increases, often reinforcing the cycle through further rises in house prices and stronger growth in credit. Over the past decade in the euro area, this process was facilitated by international capital flows whereby corporations as well as the household sector in several deficit countries were financing themselves abroad by attracting financial resources from Member States with lower investment returns. Conversely, in the bust period, the drop in house prices reduces household collateral, contributing to write-downs and/or write-offs by banks, and leading to a sharp deceleration of credit flows in the economy.

[1] Case, K., R. J. Shiller and J. M. Quigley (2001), "Comparing wealth effects: The stock market versus the housing market", *NBER Working Papers 8606*, National Bureau of Economic Research.
[2] Buiter, W. H. (2010), "Housing wealth isn't wealth", Economics — The Open-Access, Open-Assessment E-Journal, Kiel Institute for the World Economy, vol. 4(22), pp. 1-29.
[3] European Commission (2009), "Competitiveness developments in the euro area", in: Quarterly Report on the Euro Area, European Commission, DG ECFIN, Brussels, Vol. 8, No 1.

Estimates of equilibrium house prices are usually accompanied by a high degree of uncertainty, mainly due to major endogeneity problems linked to identifying the contributions of supply and demand to the equilibrium prices. However, when they are interpreted with caution, estimates of equilibrium house prices can provide an indication of the magnitude of over/under-shooting, and thereby of the magnitude of the potential adjustment ahead. Bearing this in mind, previous analytical work undertaken by the Commission has found that a number of euro-area Member States entered the global economic crisis with overvalued house prices, but that much of the misalignment now seems to have been corrected in the euro area. ([59]) However, other variables such as the price-to-income (affordability) ratio and price-to-rent ratio may point to a higher misalignment when current levels are compared to the long-term averages.

Over the past decade, EMU and financial integration have resulted in greater synchronisation of euro-area national real estate markets. Nevertheless, there are still large cross-country differences with regard to the structure of housing and mortgage markets, reflecting the diversity of regulatory, institutional, fiscal and financial frameworks.

([59]) See for instance: European Commission (2010), 'House price imbalances in the euro area', Quarterly Report on the Euro Area, Vol. 9 (3).

Table II.4.1: **Real House Price growth (in %) (1)**

	Year-on-year				Cumulative Growth		Average growth rate	Cumulative Adjustment		Data source
	2007	2008	2009	2010	Trough to peak (2)			Peak to latest data		
BE	4.5	0.5	-1.0	0.6	[95Q2-07Q3]	84	5.0	[07Q3-10Q4]	-1	ESTAT/ECB
DE	-0.4	-1.0	0.0	0.7	[08Q4-97Q1]	3	2.7	[08Q4-10Q4]	-15	OECD
IE	4.1	-10.1	-16.0	-9.9	[97Q2-07Q1]	172	10.1	[07Q1-11Q1]	-38	ESTAT/OECD
EL	1.7	0.6	0.3	-5.9	[00Q1-07Q3]	61	6.4	[07Q3-11Q1]	-14	ESTAT/OECD
ES	6.4	-4.9	-7.2	-4.2	[95Q4-07Q3]	155	8.0	[07Q3-11Q1]	-22	ESTAT/OECD
FR	4.5	-1.3	-7.2	5.0	[96Q2-07Q4]	110	6.5	[07Q4-11Q1]	-1	OECD
IT	3.1	-0.6	-1.0	-1.3	[99Q4-07Q3]	43	4.7	[99Q4-07Q3]	-10	ECB
CY	9.4	1.1	-7.3	-7.5	[05Q2-08Q1]	27	8.9	[08Q1-10Q4]	-21	ESTAT/ECB
LU	6.9	0.2	-3.6	2.7	[95Q2-08Q2]	129	6.4	[08Q2-10Q4]	-2	ESTAT/ECB
MT	19.3	7.0	-6.4	-1.5	[01Q2-08Q3]	157	13.2	[08Q3-10Q3]	-11	ESTAT/ECB
NL	2.7	0.2	-4.9	-2.9	[90Q4-08Q3]	152	5.3	[08Q3-11Q1]	-11	ESTAT/OECD
AT	1.5	-1.3	3.4	0.7	[04Q3-07Q2]	11	3.9	[07Q2-11Q1]	1	ESTAT/ECB
PT	-1.6	1.3	1.7	0.7	[07Q4-10Q1]	7	3.1	[10Q1-11Q1]	-2	ECB
SI	18.5	-2.3	-8.7	0.7	[03Q2-08Q1]	76	12.0	[08Q1-11Q1]	-10	ECB
SK	14.1	5.6	-16.0	-4.5	[05Q1-08Q1]	43	12.1	[08Q1-11Q1]	-29	ESTAT/ECB
FI	1.8	-1.8	-2.1	7.0	[01Q3-08Q2]	34	4.4	[08Q2-11Q1]	2	ESTAT/OECD
BG	18.6	15.2	-23.1	-10.8	[02Q2-08Q3]	225	17.3	[08Q3-11Q1]	-39	ESTAT/BIS
CZ	6.6	-4.8	1.3	-8.5	[05Q4-09Q1]	13	3.7	[09Q1-10Q3]	-17	ESTAT/BIS
DK	0.8	-8.2	-13.9	0.4	[93Q2-06Q3]	176	7.7	[06Q3-10Q4]	-22	ESTAT/OECD
EE	5.3	-21.6	-34.8	-1.1	[03Q3-07Q2]	153	25.5	[07Q2-11Q1]	-54	ECB
LV	34.0	-30.6	-30.3	-4.8	[06Q1-07Q4]	81	35.4	[07Q4-11Q1]	-53	BIS
LT	28.0	0.2	-32.9	-13.0	[00Q3-08Q1]	417	22.5	[08Q1-11Q1]	-46	BIS
HU	-8.8	-3.2	10.7	-7.8	[02Q4-09Q1]	19	2.8	[09Q1-11Q1]	-15	ESTAT/BIS
PL	126.3	-44.2	114.2		[08Q3-09Q4]	174	89.4	[09Q4-09Q4]		BIS
SE	7.8	3.9	10.9	-4.7	[96Q3-09Q4]	172	7.6	[09Q4-11Q1]	-12	ESTAT/OECD
UK	8.3	11	2	-0.1	[98Q1-09Q4]	162	8.3	[09Q4-11Q1]	-9	ESTAT/OECD

(1) For 2010, the latest available quarterly data point provided by Eurostat is Q3. First data point: 2001 (MT, AT), 2004 (SI), 2005 (EE), 2006 (CY). The deflator used is the consumer deflator: Household and NPISH final consumption expenditure (P31_S14_S15).
(2) The peaks and troughs identification is done following a [-6, +6] quarters window, following Rousová and Van den Noord (2011), "Predicting Peaks and Troughs in Real House Prices", OECD Economics Department Working Papers, No. 882.
Source: Commission services.

Work on the impact of these structural differences on housing cycles and housing imbalances remains limited. The rest of this section looks at three structural features of housing and mortgage markets that have been identified in a recent study by the Centre for European Economic Research (ZEW) funded by the European Commission, as being critical for the stability of housing markets. ([60]) These are: the structure of home ownership, the structure of taxation, and mortgage market and housing supply responses. This analysis is a continuation of the work being done by the Commission on regulatory and supervisory tools to limit financial instability risks associated with housing bubbles. ([61])

Home ownership and rental markets

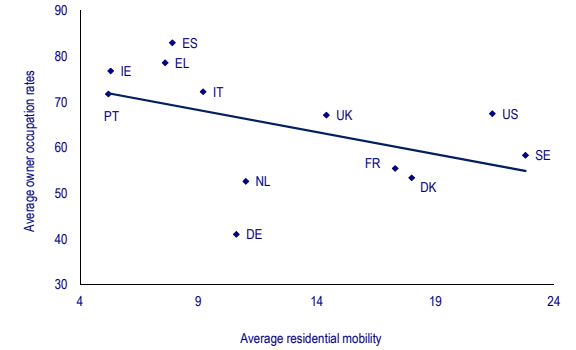
Ownership structures differ widely between euro-area countries. Home ownership rates are particularly high in Spain, Ireland, Greece, and Italy and comparatively low in Germany. An increase in home ownership rates can be observed in most euro-area countries, and this increase is particularly pronounced in Spain. Andrews *et al.* (2011) find that the increase in the share of owner occupied housing during the past few decades in most OECD countries is only partially explained by changes in household characteristics, such as population ageing. ([62]) They further find that policy factors such as taxation incentives and rental regulation have played a role in influencing households' choice of tenure.

The empirical analysis in the aforementioned ZEW study finds that the change in the

([60]) ZEW Study on "Housing markets and intra-euro area macroeconomic imbalances: Identifying policy instruments", mimeo.
([61]) See for instance: European Commission (2010), "Regulatory changes in the financial sector and the prevention of housing bubbles", Quarterly Report on the Euro Area, Vol. 9 No. 4.
([62]) Andrews, D., A. Caldera Sanchez and A. Johansson (2011), "Housing markets and structural policies in OECD countries", *OECD Economics Department Working papers*, No. 836, OECD Publishing.

homeownership rate is a key variable in explaining the volatility of house prices. Increases in the homeownership rate have a strong positive effect on the volatility of house prices. Given this result, the often-expressed political goal of increasing home ownership rates might conflict with the goal of stable housing markets characterised by low price volatility. Reasoning along these lines, subsidies or tax incentives for home owners may come at the cost of lower market stability.

Graph II.4.1: **Residential mobility vs. owner occupation rates (in %, 2007) (1)**

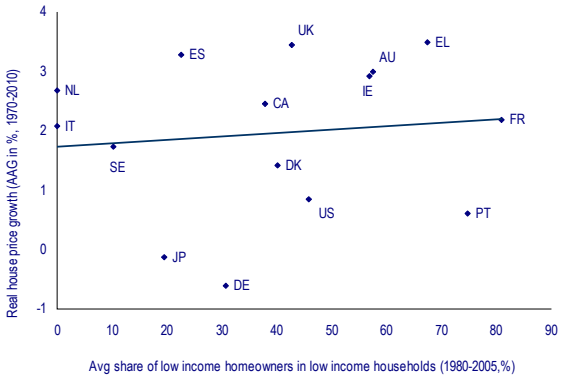


(1) Residential mobility is measured by the share of households that moved within the year.
Source: ZEW.

Price volatility may not be the only negative consequence of high ownership rates. Given that home owners are less mobile than renters, high rates of ownership can also have major implications for residential and labour mobility. A home owner is estimated to be 11% less likely to move than a home renter. ([63]) Low residential mobility is typically found in countries where owner occupation rates are high, as owners typically face higher transactions costs for moving than households that live in rented houses. This can be clearly seen in Graph II.4.1, which shows a negative relationship between owner occupation rates and residential mobility, measured as the percentage of households that changed residence within the last two years.

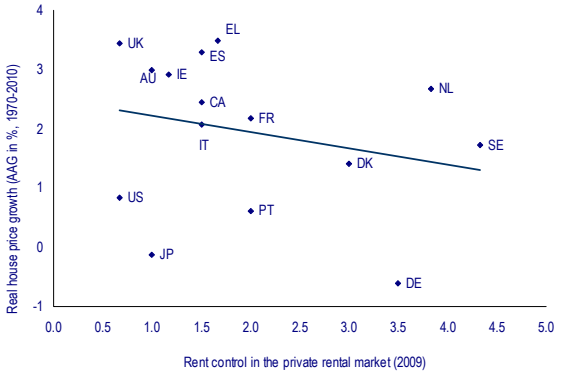
Another finding of the ZEW study is that ownership structures and the supply of social housing are important for macroeconomic stability. A higher share of low income homeowners is positively related to house price growth and the occurrence of house price imbalances, whereas the share of social housing has a negative relationship with imbalances. The possible policy implications of this finding depend on the drivers of homeownership among low income households. If low income households are more or less forced to become homeowners because of the lack of alternatives (i.e. the rental market is not well established and there are no adequate social housing opportunities), reducing the occurrence of housing imbalances involves fostering a stable and properly functioning rental market. However, if tax incentives and subsidies, as well as the availability of mortgages with variable interest rates, are the main driving forces for low income households to become homeowners, the policy response should involve changes in the taxation system as well as mortgage market conditions.

Graph II.4.2: **Low income owners and real house price growth**



Source: ZEW.

Graph II.4.3: **Rent control and real house price growth (1)**



(1) Rent control is measured with an OECD composite indicator combining data on the extent of rent controls, on how increases in rents are determined and on the permitted cost pass-through onto rents.
Source: ZEW.

([63]) Andrews et al. (2011), op. cit.

Mortgage market structures and tax incentives

ZEW's analysis also shows that both house prices and credit volumes are higher in countries where variable interest rates are common (e.g. ES, UK) compared to countries where mortgage contracts with fixed interest rates prevail (e.g. DE). Moreover, the impact of credit growth on house price growth seems to be amplified in countries with variable interest rate settings and/or where mortgage interest is tax deductible. Also, housing markets are more volatile if mortgages with variable interest rates are dominant. This could provide an additional argument for housing policy to support long-term finance with fixed rates, particularly so as to avoid myopic behaviour of households which might lead to repayment difficulties further down the line.

These results are in keeping with those of a number of previous studies which have identified some key structural sources of housing instability. Almeida *et al.* (2006) find that the sensitivity of house prices and mortgage demand to income shocks is higher in countries where loan-to-value ratios are higher, i.e. in countries where households are on average less credit-constrained. ([64]) Similarly, Calza *et al.* (2009) conclude that more developed mortgage markets tend to magnify the impact of monetary policy shocks on house prices, residential investment and consumption. ([65])

Personal income and property taxation systems may also provide incentives or deterrents to potential homebuyers. The difference between the market interest rate and the financing cost of housing, also known as the tax wedge, has a strong positive correlation with house price volatility (Van Den Noord, 2005). ([66]) A high inflation environment also tends to reduce real after-tax mortgage interest rates.

Taxes and subsidies consist of a wide range of different types of taxes and subsidies, the main ones being: mortgage rate deductibility, tax on imputed rents, capital gains tax, recurrent taxes on land and buildings, wealth taxes, inheritance tax, value added tax (VAT), and stamp duties. Subsidies are often limited to first-time buyers and depend on income or the value of the house.

Supply responses

A third important structural feature that affects housing market imbalances is the flexibility/price elasticity of housing supply. The responsiveness of supply to changes in prices plays an important role in shaping house price developments. A responsive housing supply reduces house price volatility, but potentially at the expense of greater fluctuations in residential investment, with the net impact on overall economic activity being unclear. ([67]) Thus, it seems that during boom periods, inelastic housing supply reinforces house price overvaluation, while high supply elasticity coupled with expectations of future housing price rises may lead to overshooting in construction activity.

Both cases raise specific policy problems in both the upswing phase and the adjustment phase. Under inelastic supply, house prices may increase more in the boom period, involving a drop in affordability with negative distributional effects. During the downturn, less adjustment is needed on the supply side as shifts in labour resources from the rest of the economy to the construction sector were limited during the boom period. At the same time, in a rigid supply environment, price decreases may be more dramatic, with potential strong spillover effects on private consumption (via wealth effects) as well as on bank balance sheets (via reduced collateral values and higher rates of delinquency).

Under elastic supply, demand pressures on prices tend to be more cushioned in the upswing. ([68]) However, a strong response by supply during boom years may raise serious issues both in terms of diverting productive resources from the tradable sector and by leaving a large excess housing stock in the early stage of the downturn.

Even though supply is rather inelastic in the short term, it is fairly elastic in the longer term, but with big differences across EU Member States related

([64]) Almeida, H., M. Campello and C. Liu (2006), "The financial accelerator: Evidence from the international housing markets" *Review of Finance 10* (3), pp 321–352.

([65]) Calza, A., Monacelli, T. and L. Stracca (2009): "Housing finance and monetary policy", *ECB Working Paper No. 1069.*

([66]) Van Den Noord, P. (2005), "Tax Incentives and house price volatility in the euro area: Theory and evidence", *Économie Internationale*, Vol. 101 (2005), pp. 29-45.

([67]) Andrews, D., A. Caldera Sanchez and A. Johansson (2011), "Housing markets and structural policies in OECD countries", OECD Economics Department Working papers, No. 836.

([68]) While new housing units may well be built in order to take advantage of profit opportunities during a demand boom, it would seem entirely irrational for housing units to be destroyed due to price falls. Non-residential land use is the main alternative use, but land prices tend to follow house prices. Furthermore, there is no market for second-hand building materials.

in part to planning restrictions. ([69]) Therefore, the adjustment needs that follow protracted boom phases tend to be greater, as the adjustment to a large oversupply in the housing stock is likely to be painful both for real estate companies and for construction workers who need to find a job in another sector.

Conclusion

The financial crisis has revealed the need to reconsider policy objectives for housing markets. Guaranteeing a socially acceptable minimum standard of housing for all, addressing market failures and ensuring that housing markets do not lead to a build-up of imbalances with detrimental consequences for macroeconomic stability might prove to be challenging and sometimes contradictory objectives.

Several considerations are to be assessed against the specificity of national housing market systems. First, because of their potentially negative impact on house price stability, it is important to weigh carefully incentives for increased housing ownership, especially for low-income households. Establishing well-functioning rental markets as well as other housing opportunities (e.g. shared ownership) for lower income households may prove to be a viable alternative. Secondly, variable mortgage interest rates, high loan-to-value ratios and tax incentives for house purchase seem to increase the risk of imbalances in housing markets. Finally, more analysis is needed on the supply side of housing in order to better understand the overall impact of supply flexibility on macroeconomic stability.

([69]) The main issues surrounding housing supply dynamics are explored using the example of the UK in Kuenzel, R. and B. Bjørnbak (2008), "The UK Housing market: Anatomy of a house price boom", *ECFIN Country Focus* Vol. 5 Issue 11: http://ec.europa.eu/economy_finance/publications/publication13282_en.pdf