Real Estate Booms and Price Bubbles: What Can Germany Learn from Other Countries?

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When speculative price bubbles on real estate markets burst, the effects for the real economy are often devastating taking the form of substantial losses in production and employment. This paper discusses the degree to which institutional frameworks can prevent speculative bubbles from emerging and expanding. Comparing experiences in different countries indicates that, in Germany, institutional regulations are more likely to counteract the risk of undesirable developments. Despite the recent substantial price increases, no speculative bubble can be identified in Germany so far—but the risk has increased. In times of the euro area debt crisis, real estate is regarded as a safe investment, which boosts demand. And although a reintroduction of the former subsidy for owner-occupied home purchases would create new housing space, it could also lead to price hikes in the property market. A particular problem is the banks' recent tendency to grant mortgages to households on the basis of lower and lower equity capital.

When real estate is vastly overvalued over a prolonged time period, this is referred to as a speculative real estate bubble: the actual purchase price is significantly lower than the intrinsic value that would be justifiable based on economic factors. At the same time, buyers are confident that there will be further price increases and thus expect to be able to sell their property at a profit in the future. There is less risk aversion. Liquidity restrictions become less binding, as credit is becoming more readily available.

Real estate prices that are inflated through speculation can stimulate demand for goods in the short and medium term, thereby causing inflation risks. Moreover, this development also leads to an inefficient allocation of scarce resources. This applies to private households, which are living beyond their financial means, and also to firms. Inflated property valuations stimulate investment demand and contribute to the development of overcapacities. When the trend is reversed, the imbalances suddenly become apparent and may be accompanied by significant distortions in the real economy. This correlation was evident, for example, in the most recent financial crisis, triggered by the bursting of the US real estate bubble.

In order for economic policy to be able to play a preventive role, early identification of real estate bubbles is essential. This requires isolating the share of price formation attributed to speculation. With this in mind, the authors of the present paper have developed an early warning system.[1] According to this system, the probability of the speculative price increases goes up when an expansionary monetary policy makes it easier to grant credit. However, the formation of price bubbles is a complex process, which is determined by a multitude of factors. The institutional framework is particularly cruci-

1 See C. Dreger and K. Kholodilin, "An Early Warning System to Predict Speculative House Price Bubbles. Economics," Open Access, Open Assessment E-Journal 7 (2013).

al. It varies dramatically from country to country (see Table 1). Whether a price development is influenced by speculation or not, depends, largely, on the framework conditions in credit and mortgage markets and the existing regulations.

The institutional environment is often neglected in early warning systems since institutions only change gradually over time. However, they determine whether the specific orientation of a monetary or lending policy will result in a bubble or not. While the European Central Bank organizes its monetary policy for the entire euro area, there are only a few countries in the currency union where speculative price spirals have occurred. The present paper will analyze whether certain regulations reduce the probability of real estate bubbles occurring and can make the real economy more resilient against crises.

In order to better assess the development of the German real estate market, it is worth considering recent experiences in other countries.

Subprime Crisis in the US

In the US, particularly since 2001, a speculative bubble formed, which led to an increase in real estate prices of more than 50 percent. Even in the years preceding the crisis, rising property prices were recorded, albeit to a lesser extent (see Table 2). The bubble was fueled by an expansionary monetary policy, which ensured low financing costs. Financial innovations in the form of securitization, i.e., pooled credit agreements with a variety of liability obligations, also played a decisive role. This entailed mortgages being granted unconditionally, particularly to borrowers with poor creditworthiness on the subprime market. The banks frequently combined credit claims with high-quality titles, creating easily transferable bonds that were similar to securities and then sold them on, for example, to European and Asian banks.

Furthermore, the share of mortgages with variable interest rates increased to more than half, and remained as high as 45 to 50 percent in 2010. When the lending rates increased again, many households were unable to service their loans. Forced sales resulted in high capital losses for the banks. The banking crisis led to an economic crisis that spread worldwide as US imports fell and foreign banks were also involved in the US real estate market.

First and foremost, the crisis can be attributed to insufficient risk awareness among the key players. Risks can be assessed more accurately if banks maintain more long-term relationships with borrowers. Further, fixed mortgage rates also help to make a household's financial burden more transparent. In addition, a reliable check of the creditworthiness of households would probably have allowed to avoid undesirable developments.

Real Estate Crises in the UK and Ireland

In the UK and Ireland, price bubbles in real estate markets started as early as the mid-1990s and continued up until the beginning of the financial crisis. In the UK, real price increases of almost 170 percent were recorded, and in Ireland as high as 250 percent.

Among the catalysts of the speculative bubbles in both countries were low interest rates, which reduced the costs of financing property ownership. The trend towards urbanization brought further price increases in its wake, particularly in Ireland. At the same time, increasing income and high employment rates led to a growing demand for real estate. However, this development can only be partially explained by fundamental data. The high growth rates of the real economy were also a consequence of the real estate bubble, which stimulated consumer expenditure of private households through putative capital gains.[2] Higher real estate prices result in an increase in the value of securities that households can borrow against in order to be eligible for new loans.

The price bubble led to a massive expansion of the mortgage portfolio, which now constitutes the most important component of private debt. Variable interest rates predominate here. With regard to loans with fixed interest rates, these interest rates are usually fixed for short periods of up to two years. Presently, house prices in Ireland are at half of the record values documented before the financial crisis, and in the UK, they are 20 percent below. Thus, it is possible that the market may cool off again in future. However, prices in London, the country's main conurbation, have already begun to rise again, predominantly due to growth in foreign demand.

Real Estate Crisis in Spain

The Spanish real estate market is characterized by high ownership rates. The proportion of people who live in their own home is 83 percent. In Germany, this figure is only 53 percent. Mortgages with variable interest rates are more readily available than in Germany. Furthermore,

2 See C. Dreger and H-E Reimers, "The long run relationship between private consumption and wealth. Common and idiosyncratic effects," Portuguese Economic Journal 11 (2012): 21–34.

Table 1

Selected Real Estate Market Characteristics

In percent

	Home ownership rate 2010	Loan-to-value ratio 2007	Share of loans with variable interest rate,[1] 2010	Share of securitized loans in total property loans 2008	Share of interest-only loans 2009–2010
Germany	53.2	70	15	9.1	
US	66.5	80	45–50	98.8	
UK	70.0	92		41.3	43
Ireland	73.4	83	67	42.4	10
Spain	83.0	73	91	34.8	
Denmark	67.1	75–80		2.2	50
Norway	82.9	75			
Sweden	70.8	75	51–53	0.3	
Netherlands	67.2	101	18	53.9	79

1 New and existing loans.

Sources: Eurostat; US Census Bureau; ECB; European Mortgage Federation; Research Institute for Housing America; calculations of DIW Berlin.

A high loan-to-value ratio, variable interest rates, and poor repayment performance increase the probability of a price bubble occurring.

the securitization of receivables was widespread, which increased the willingness of banks to extend credit.

The real estate boom in the years preceding the financial crisis was fostered by two main factors. On the one hand, strong population growth led to shortages of housing space: since the creation of the euro area, more than five million people have immigrated to Spain. On the other hand, the European Central Bank followed an expansionary monetary policy. Low nominal interest rates in conjunction with rather high inflation resulted in negative real interest rates that stimulated real estate demand. At the same time, the elimination of currency risks led to large foreign capital inflows, which were often invested in property. As a consequence of this development, the number of new properties by far exceeded demand. For a short time, more properties were being constructed in Spain than in Germany, France, and Italy combined. At the same time, the government liberalized land use, allowing agricultural land to be converted into building land more easily.

Under these circumstances, real property prices almost doubled over a period of 10 years (see Figure 1). When interest rates eventually increased, many households were no longer able to repay their loans, which meant that the commercial banks and savings banks had to cope with massive bad debt losses. Investment in real estate was no longer profitable. Since then, the construction share in aggregated economic output has tailed off. The value of real estate has depreciated by approximately a third.

Real Estate Crisis in the Netherlands

The Netherlands has not yet recovered from its real estate bubble. A few months ago, the government nationalized SNS Reaal, one of the country's biggest banks, in order to prevent it going bankrupt due to bad real estate loans. This indicates that the banking sector is still in an extremely fragile state. It was not possible to bring private investors on board quickly enough. Although the financial sector is contributing to the economic recovery, the government is still heading for a higher budget deficit. This, in turn, means that the country is in risk of being excluded from the diminishing group of countries with triple-A credit rating.

The property boom in the Netherlands was, above all, fueled by tax incentives. Mortgage interest is tax deductible, which costs the treasury almost ten billion euros every year. What was actually intended to serve as a financial aid for home builders ended up as an incentive to pile up even more debt.[3] A large number of Dutch citizens not only took out loans to purchase real estate but also used housing as security to enable them to increase their consumer spending and benefitted from loan subsidies. Furthermore, mortgages can be paid off over very long periods—in fact, in the first few years, it is common that only interest payments are made. Currently, mortgage debt, measured against economic output, is the highest in the world (see Figure 2) with each citizen owing an average of 38,000 euros. In Germany,

3 At the time of the crisis, the ratio of real estate debt to GDP was over 100 percent.

Table 2

Phases of Increasing and Falling Real Property Prices

	Start	End	Duration	Change	Average annual change
			In years	In percent	
Expansion phase					
Germany	3rd quarter 2008	4th quarter 2012	4 ½	8.6	1.8
US	3rd quarter 1992	2nd quarter 2006	14	62.2	3.5
UK	2nd quarter 1995	3rd quarter 2007	12 ½	165.8	8.1
Ireland	1st quarter 1993	2nd quarter 2007	14 ½	247.7	9.0
Spain	1st quarter 1996	2nd quarter 2007	11 ½	116.6	6.9
Denmark	4th quarter 1992	2nd quarter 2007	14 ¾	169.3	6.9
Norway	4th quarter 1992	1st quarter 2008	15 ½	186.7	7.0
Norway	4th quarter 2008	4th quarter 2012	4 ¼	29.0	6.2
Sweden	3rd quarter 1995	1st quarter 2011	15 ¾	141.8	5.8
Sweden	3rd quarter 2012	4th quarter 2012	½	1.2	2.3
Netherlands	4th quarter 1984	2nd quarter 2008	23 ¾	205.0	4.8
Contraction phase					
Germany	4th quarter 1994	3rd quarter 2008	14	-22.1	-1.8
US	2nd quarter 2006	4th quarter 2011	5 ¾	-27.2	-5.4
UK	3rd quarter 2007	4th quarter 2012	5 ½	-16.7	-3.3
Ireland	2nd quarter 2007	4th quarter 2012	5 ¾	-47.9	-10.7
Spain	2nd quarter 2007	4th quarter 2012	5 ¾	-33.9	-6.9
Denmark	2nd quarter 2007	3rd quarter 2012	5 ½	-28.3	-5.9
Norway	1st quarter 2008	4th quarter 2008	1	-9.9	-9.9
Sweden	1st quarter 2011	3rd quarter 2012	1 ¾	-4.7	-2.7
Netherlands	2nd quarter 2008	4th quarter 2012	4 ¾	-20.2	-4.6

Source: calculations of DIW Berlin.

Price bubbles develop over a prolonged period of time.

the corresponding figure is 14,000 euros and the EU average is even lower.

Furthermore, before the financial crisis, loans were extended to a level of 100 and 120 percent of the property value. Over the last four years, real property prices, that had previously skyrocketed by 200 percent, dropped by 20 percent. Up to date, the downturn has been relatively moderate, which means that there is a real risk of a further slump in real estate prices. A large number of private households, which bought property shortly before the onset of the crisis, are now burdened with significant debt.

Presently, many citizens want to sell their houses but there are hardly any buyers, particularly as the country has once again slipped into recession. Unemployment is on the rise and mortgage interest payments can frequently no longer be met. This may result in a higher number of forced sales in the future. The downturn on the property market also has consequences for the construction industry, which, in turn, has a negative impact on the real economy. The falling house prices jeopardize mortgage-backed securities and could lead to massive loan defaults.

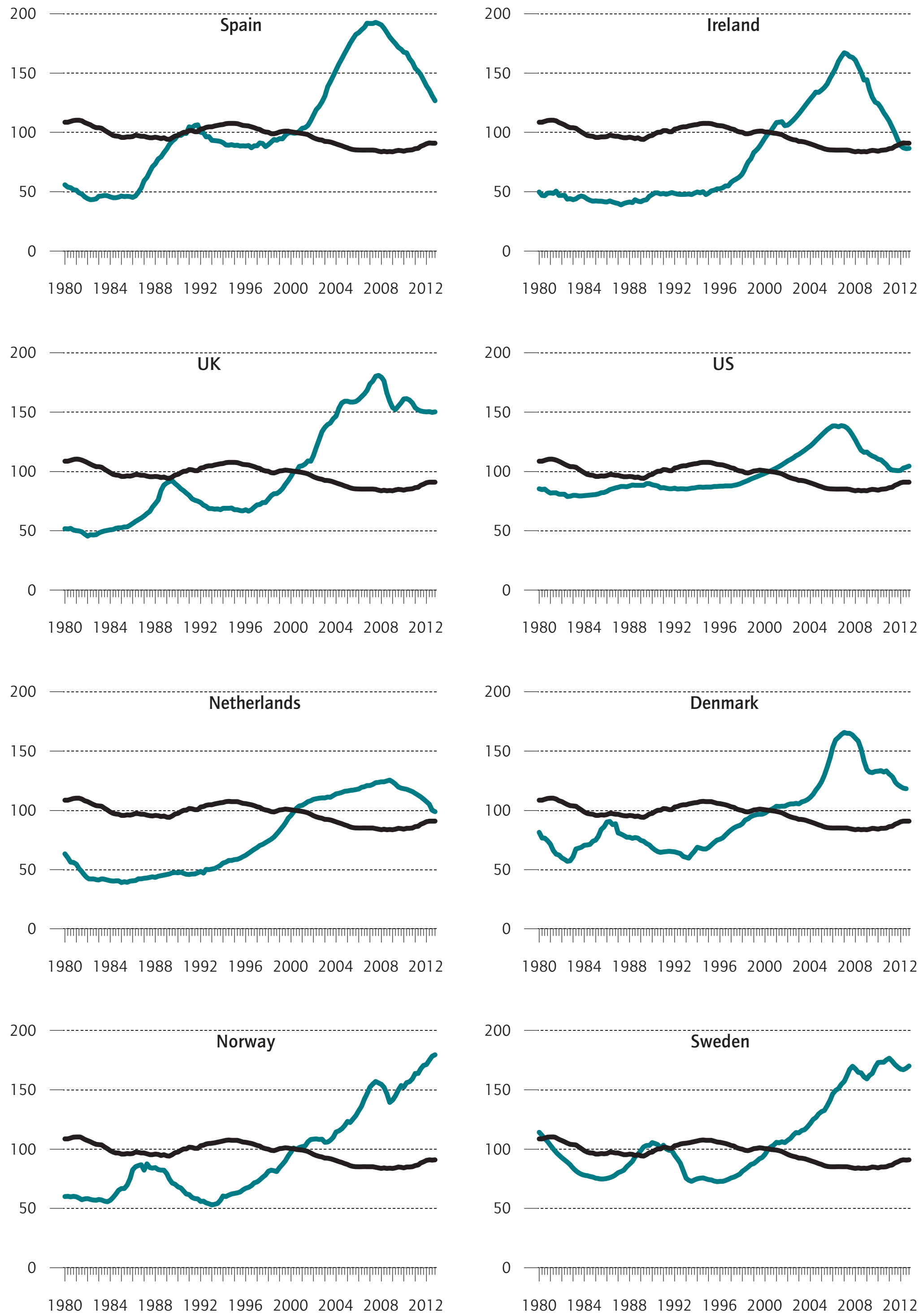
Real Estate Boom in Scandinavia

Sweden and Norway are now regarded by international investors as a safe haven for investment, especially compared with the crisis-hit euro area. Norway in particular is profiting from consolidated public finances, a sovereign wealth fund of 435 billion euros, and an abundance of raw material reserves. However, as a result of capital inflows, local currencies are under strong pressure to appreciate, which increases the price of exports. Therefore, the central banks are attempting to maintain the exchange rate parities by lowering interest rates. For instance, Denmark has been experimenting with negative money market interest rates for some time now. According to figures provided by the Danish National Bank, the deposit rate is currently at minus 0.1 percent, in order to reduce the attractiveness of the national currency for international investors. Hence, investors are paying a premium to the state in order to be able to lend money.

Figure 1

Real property prices in selected countries—Compared to Germany

Index 2000 = 100



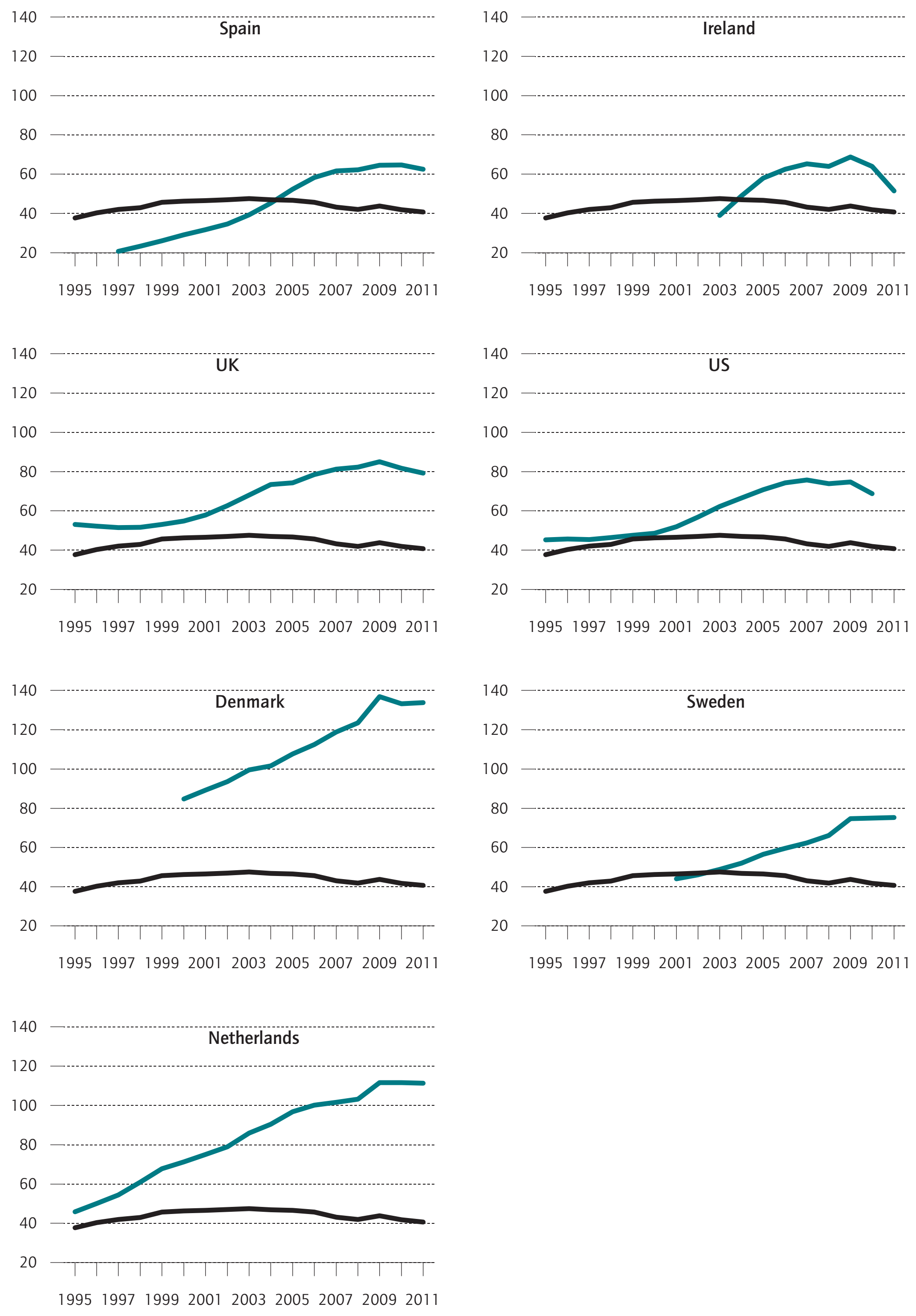
Source: calculations of DIW Berlin.

Real property prices in Germany used to show a lack of dynamic growth.

Figure 2

Real estate lending in selected countries—Compared to Germany

In relation to GDP in percent



Source: calculations of DIW Berlin.

Mortgage lending to private households in Germany has been running parallel to economic output for a long time now.

However, the low interest rates reduce the financing costs for real estate and are one of the causes of the current price increases. Real property prices in Norway have more or less tripled since the early 1990s and continue to rise, while in Sweden they have increased by 140 percent. The development is accompanied by a growing indebtedness of private households, which is currently at 200 percent of disposable income in Norway. The situation in Sweden is similar. The majority of loans are for real estate. The proportion of homeowners is between 70 and 80 percent, not least because of tax incentives. For instance, mortgage repayments are tax deductible, but rents are not.

Private households do not have a sufficient buffer to protect them from the impact of a collapse of housing prices, which could result in increased defaults on payments and exert pressure on the banks' balance sheets. If prices plummeted, households would see their main financial safety diminish. Denmark experienced this kind of development several years ago. In order to limit the risks, the loan-to-value ratios for home loans have been reduced from 90 to 85 percent. This did not heavily alter the price dynamics up to date. Since the hands of the central banks are largely tied, changes in taxation should be adequate to halt the development. One option would be to make it more difficult to deduct interest payments from taxable income.

Trend Reversal Following a Long Period of Stagnation in Germany

German reunification was followed by very large-scale investment in residential properties and office space in Eastern Germany. The government had provided tax incentives for the purchase of real estate. And investors expected high growth rates in Eastern Germany after a short transition period. They were also relying on growth impulses through the capital city effect of Berlin acting as a stimulus for growth. Their expectations were not met. The increase in real property prices ended in 1994, when East Germany's catch-up process faltered. Investment in construction fall in the following decade and this significantly hampered economic growth in Germany. Nominal purchase and rent prices stagnated at a low level, with real prices dropped by 22 percent overall by 2008. After more than a decade of stagnation, a trend reversal has been observed in the last years. Vacancy rates for residential properties have decreased considerably; in Leipzig they have halved in the past decade. Rents are rising perceptibly, especially in large cities. In Munich, new rents increased by 12 percent on average in nominal terms in the past five years, while in Berlin the corresponding figure was as high as 16 percent. However, the evolution is not dominated by speculative factors. The main reason seems to be a housing shortage. For instance, in the metropolitan regions, demand is mostly significantly higher than supply. For example, in the German capital, the number of private households increased at an average rate of 14,500 per year between 2005 and 2011, while the housing stock only grew by 3,500 per annum. Currently, the number of private households exceeds the number of housing units by 9,000. It is highly unlikely that this gap will be bridged in the near future.

Conclusion

In Germany, the institutional framework appears to be an obstacle to the emergence of price bubbles on the real estate market. Interest rates are often fixed for ten to twenty years, implying that the financial burden for private households is easier to calculate. With a general increase in interest rates over the next ten years borrowers could run into difficulties with variable interest rates. Moreover, the banks are still very cautious about mortgage lending. A high proportion of the purchase value is demanded as a down payment, frequently 30 percent. After all, the ownership rate on the German real estate market is extremely low by international standards.

The number of new mortgage loans to private households in Germany has been stable since 2003, while the ratio between the stock of mortgage loans and GDP has even decreased. In Germany, there is no hint of the explosive lending policy, which is characteristic in the countries with speculative price developments. In addition, financial innovations such as securitization, which ensured a sudden upsurge in lending, only play a peripheral role. Overall, German banks are behaving conservatively by international standards. This also counteracts a speculative bubble.

Although there is presently no evidence of a significant price bubble in Germany, some speculative factors could still have an impact, for example, the low real interest rates. Provided that the economy in Germany achieves a sustained higher growth path, speculative price increases are more likely. Furthermore, even in times of debt crisis in the euro area, real estate is regarded as a safe investment, which boosts demand. And although reintroducing the Germany's former subsidy for owner-occupied home purchases would create new housing space, it could also fuel price increases on the real estate markets. A particular problem is the banks' recent tendency to grant mortgages to households on the basis of lower and lower deposits. Experiences in other countries show that less restrictive lending practices can contribute to the development of bubbles.

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