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Advantages and future challenges

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1 Management summary

The new financial market regulations that have been drawn up in the wake of the financial market crisis will drastically alter lending conditions for banks. The key aim is to make the financial system less susceptible to crisis and to avoid future state intervention due to the insolvency of banks that can affect the whole system. This is an understandable aim. Basel III and Solvency II will be able to help ensure that banks and insurance companies become more robust in future. However, questions are increasingly being asked as to whether banks will stay as efficient in future, and in particular whether they will still be able to fulfil their economic functions. Their ability to offer long-term lending seems particularly at risk, for example as shown in the European Commission's green paper on long-term financing. The European Commission is therefore proposing that long-term financing should in future be shifted increasingly to other financial intermediaries, such as insurance companies and funds.

This constitutes the starting point for the following analysis, which will focus mainly on three important questions:

- What is the importance of long-term financing to the real economy?
- Can alternative financial intermediaries replace banks in long-term financing?
- What will long-term financing by banks look like under the new rules and what adjustments must be made to regulations to ensure that banks can still function?

Section 3 looks at the importance of long-term financing to the real economy. It is based on the housing market, which is not only extremely important in terms of volumes, but also provides sufficient data for an international comparison. As we will see, there are considerable differences in how housing markets are financed in different countries. For example, while long-term fixed interest rates prevail in Germany, most loans in the United Kingdom are subject to variable interest rates. These differences have a significant impact on the stability of the housing markets. Markets that are dominated by long-term financing experience considerably lower price volatility than other markets. This is because interest-rate volatility has less of an impact on demand. Such correlations can in principle also be applied to other markets although variations in corporate financing, for example, are much greater even within the same country. The fact that the advantages of long-term financing in terms of macroeconomic stability are not being exploited every-

where is due to its costs, which are largely determined by the regulatory framework and economies of scale when providing financing, and also by individual preferences. Short-term loans are often particularly prevalent in countries with lower savings ratios, in part because households and companies want to retain a degree of flexibility.

Section 4 discusses which financial intermediaries are able to offer long-term loans. It looks firstly at banks, whose economic functions involve bringing together savers and investors and maturity transformation. Banks also have a broad mix of funding available to them, which opens up the option of long-term lending in a special way. Long-term loans can generally be funded through deposits, bonds or asset-backed securities (ABS). These types of funding are available in all the countries analysed, although the weightings vary. If a corresponding demand arises, banks can thus grant long-term loans in all countries. However, historical analysis also shows that long-term financing must first become established, i.e. it requires market participants to have appropriate experience.

Banks have structural advantages over other financial intermediaries when it comes to long-term financing. The size of their loan portfolios makes it easier for them to transform lot sizes and balance differences in maturities, which means that they can, on average, offer loans at more favourable conditions. They also specialise in credit checks and risk monitoring. Although insurance companies can also provide loans, lending is only ever one of numerous investments for them, as their aim is to diversify their portfolio. Insurance companies therefore generally cooperate with banks when they provide loans. Essentially this also applies to credit funds and other alternative providers whose size puts them at a disadvantage compared with banks. Furthermore, funds generally lack long-term capital providers, which are necessary for long-term financing. All things considered, alternative financial intermediaries will not be able to replace banks, but will mainly be able to complement them. In particular, they can improve banks' funding by purchasing covered bonds or ABS while simultaneously playing a part in the risk-return profile for lending.

Nevertheless, the level of lending by alternative providers of financing is likely to increase in future. This is due to regulations, which favour these providers over classic financing providers. Section 5 focuses on this. The unweighted leverage ratio and net stable funding ratio (NSFR) agreed as part of CRD IV (Capital Requirements Directive) have proved to be an impediment to long-term financing by banks. The unweighted leverage ratio constitutes a restriction on volumes that particularly affects specialist lenders

focusing on low-risk, long-term financing for real estate and regional authorities. Margins are much lower in this area of business than in investment banking, which is why it is difficult to attract additional providers of capital under the current conditions. These institutions are reducing their balance sheets as a result, which also weakens long-term financing. The NSFR also offers incentives to reduce loan maturities. Furthermore, the new international accounting standards (IFRS 9) issued by the International Accounting Standards Board will increase the provisioning required for long-term lending. Solvency II will also reduce demand for long-term bonds among insurance companies, making long-term funding more difficult.

Other financial intermediaries are less tightly regulated. This offers incentives for a shift in lending, but also leads to new risks. The stability of the financial system will ultimately not increase if banks become more stable but new risks arise in less regulated areas. On the contrary, while there is a wealth of experience in assessing incipient banking crises, the situation in the shadow banking sector is much more difficult to assess.

What is needed is therefore a uniform level playing field, i.e. a standardised framework for financial intermediaries. The application of Basel III must also be reviewed. Both the unweighted leverage ratio and the NSFR are measurements that offer only an indirect indication of the probability of insolvency. These ratios should therefore be used in a less restrictive way and instead should serve as monitoring ratios. A more extensive investigation can then begin in the event of any deviations from the expected levels. Although more separate analyses would probably lead to higher regulatory and supervisory costs, a uniform approach cannot be justified in view of the multitude of different business models. Crucially, however, the cost of a reduction in long-term financing for the real economy would be much higher.

2 Introduction

The financial crisis hit the world of finance badly. Many banks were at risk of insolvency and had to be bailed out by governments to prevent chain reactions in the financial markets. This in turn paved the way for the sovereign debt crisis, which is still ongoing. The turmoil on the financial markets also led to slumps in the real economy, from which some economies are only now beginning to recover.

Attempts are being made to draw up new regulations for banks to prevent such crises. Basel III, which will be introduced in Europe under the name CRD IV (Capital Requirements Directive), is intended to ensure that banks will be more robust in future and thus that insolvencies can be prevented as far as possible (Hüther, 2013). As well as higher capital backing requirements, the new framework requires better liquidity management by banks.

It is largely undisputed that the new rules will increase the stability of banks. However, there are increasing concerns about whether banks will be able to fulfil completely their actual economic function of bringing together savers and investors (borrowers). In its green paper on "The long-term financing of the European economy", the European Commission interprets the current situation as follows: "The financial crisis has impaired banks' ability to lend at long maturities, as they need to deleverage, correcting the excesses of the past." (EU-Kommission, 2013b, 3). The European Commission concludes from this that long-term lending in the EU will in future have to come increasingly from other financial intermediaries such as funds.

These considerations form the starting point for this analysis. The emphasis is on the question of which private institutions are generally suited to long-term financing and how long-term financing can be guaranteed under the new financial market regulations, or what adjustments need to be made. Based on the system used by Deutsche Bundesbank, all financing with a maturity of more than five years is classed as long-term financing for the purposes of this analysis. A key focus is the question of how banks will be able to continue to act as providers of long-term financing in future. Ultimately, banks are the institutions best qualified to do this. Transferring lending to less regulated areas, i.e. the shadow banking sector, would increase the risk of future crises. However, adjustments to the regulations are necessary in order to improve the efficiency of banks. Most such adjustments can be made without reducing the stability of the financial system.

The structure of the analysis is as follows. Firstly, Section 3 discusses the prevalence of long-term financing and its importance to the real economy. This is based on the example of residential property financing, not only because of the quantitative importance of the market, but also because it is where the most research has been carried out into the effects of long-term financing. Section 4 then examines how long-term financing can be provided and which providers are suitable for this. The analysis also draws on historical experience. Section 5 goes on to discuss long-term financing under the amended rules for financial market regulation and outlines approaches to reform.

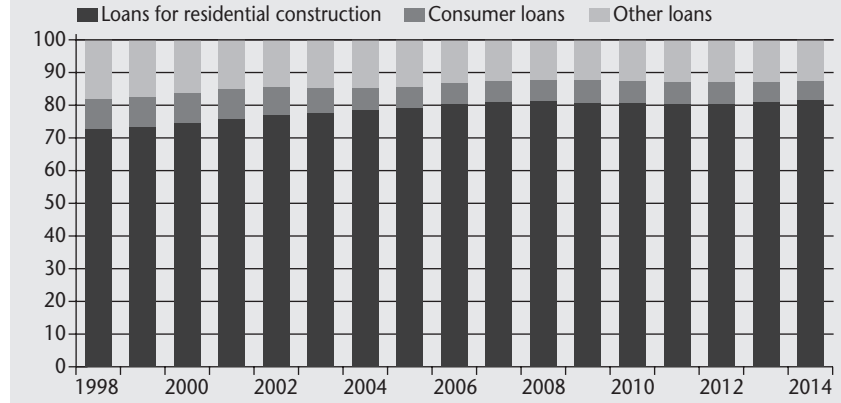
3 Long-term financing and the real economy: the example of the housing market

Real estate financing is the most important link between the financial economy and the real economy. In Germany, for example, around 55 per cent of all loans are collateralised with real estate (Voigtländer et al., 2013). Although financing for home ownership can be organised very differently in different countries, long-term financing for private households is dominated by loans for residential construction. According to figures from the European Central Bank (ECB), around 82 per cent of outstanding loans in the Eurozone with a maturity of more than five years related to residential construction in April 2014. The importance of the housing sector in long-term lending has increased again slightly in recent years (Figure 1).

Residential construction thus plays a crucial part in long-term financing in Europe. The focus of the following analyses of long-term financing is therefore on residential property financing in Europe (Section 3.1). The available data also make this suitable for international comparison. As Germany occupies a special place in relation to other European countries, this is followed by a short discourse on residential property financing in Germany (Section 3.2). The effects of different residential property financing systems

Use of long-term loans in the Eurozone Figure 1

Percentage of outstanding loans to private households and private not-for-profit organisations



2014: April.
Source: ECB, 2014

are then examined in more detail (Section 3.3). In principle, the results arrived at for the residential property financing and housing markets can also be applied to other markets. This is briefly described using the example of financing for property companies (Section 3.4). Section 3.5 then presents the reasons for different uses of long-term financing in a European context. The section ends with an interim conclusion.

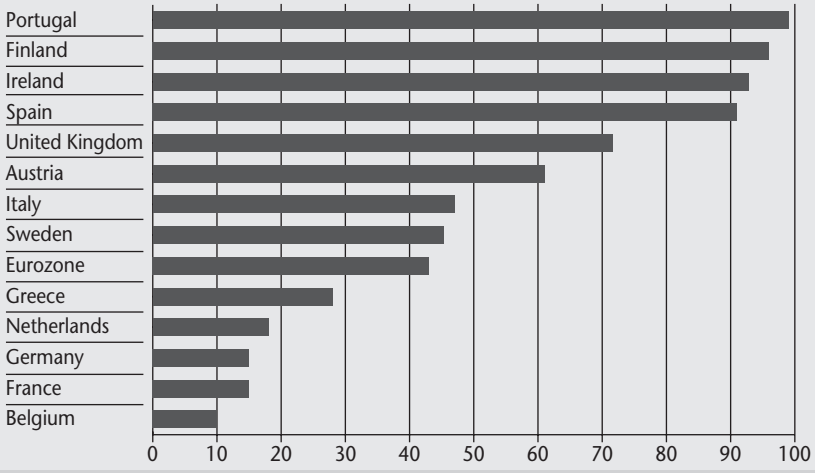
3.1 Residential property financing in Europe

There are major differences in how residential property financing is organised in different European countries. The first significant difference is in the establishment of fixed interest rates. If we take the proportion of loans with variable interest rates as an indication of a preference for relatively short-term fixed interest rates, clear differences emerge within the European Union. Together with Belgium and France, Germany is one of the countries in which variable-rate loans are of minor importance, while such loans predominate in Spain, Ireland, Finland and Portugal (Figure 2).

Variable loans also predominate in the United Kingdom. According to figures from the Council of Mortgage Lenders, they accounted for 72 per cent of all outstanding mortgage loans at the end of 2011. One reason for

Proportion of newly awarded mortgage loans that are variable loans Figure 2

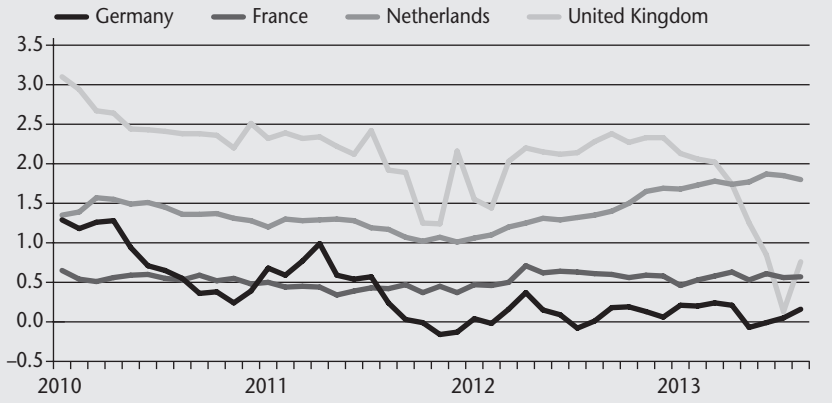
in the 1st quarter of 2013, in per cent



Sources: ECB, 2009; EMF, 2013

Interest rate spread for a ten-year fixed interest rate and variable-interest mortgage loan Figure 3

Monthly values in percentage points



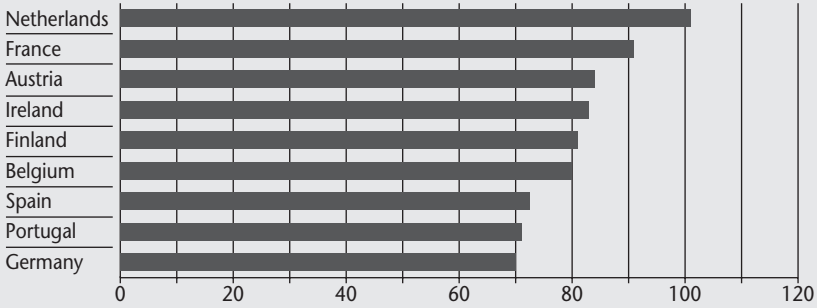
Source: ECB, 2014

the difference in the prevalence of fixed-rate loans is likely to be the price of these loans in different economies. As an example, Figure 3 shows the interest rate spread between mortgage loans with a fixed rate of more than ten years and a variable-rate loan for Germany, France, the Netherlands and the United Kingdom. In the period from January 2010 to August 2013, the spread in Germany was an average of 37 basis points, compared with 52 basis points in France, 140 basis points in the Netherlands and as much as 207 basis points in the United Kingdom.

One reason for this may be differences in refinancing conditions. While banks in Germany can charge customers the full amount of interest lost in the event of early termination within the first ten years, prepayment compensation in France is limited to six monthly instalments or 3 per cent of the residual debt (Voigtländer, 2010). Generous refinancing options are also available in some cases in the Netherlands. Banks have to compensate for the associated risk with an interest mark-up. Long-term fixed interest rates are therefore very different in France and the Netherlands, despite the fact that these countries are in the same currency area. On average, a loan with a fixed interest rate of more than ten years cost around 20 basis points more in France than in Germany, while in the Netherlands it actually cost an extra 150 basis points. However, issues relating to funding and macroeconomic risks also

Debt ratios Figure 4

in 2007, in per cent



Source: ECB, 2009

play a part in explaining differences in interest rates, and the distribution of these varies considerably, particularly during the euro crisis.

There are also significant differences between European countries with regard to the use of external funds. According to figures from the European Central Bank, the average ratio of borrowing to costs for construction of a building (debt ratio) for Eurozone countries in 2007 was 79 per cent. The debt ratio in France ranked relatively high at over 91 per cent, while in the Netherlands it was actually over 100 per cent (Figure 4). Germany is among countries with a consistently low debt ratio of around 70 per cent. Although lending criteria have become stricter as a result of the financial crisis and debt ratios have fallen in the majority of countries (Scanlon et al., 2011), the differences in levels are likely to have persisted for the most part.

This can also be seen if we look at repayment habits. Loans with no initial repayment were common in many countries before the financial crisis. Over 80 per cent of loans in the Netherlands did not involve any initial repayment, compared with around a quarter in the United Kingdom. As in many other countries, the proportion of these loans fell in the United Kingdom after the crisis (down to 20 per cent), although such products are still offered as standard (Scanlon et al., 2011). In Germany, on the other hand, such loans are rare; only the state-owned bank KfW offers loans with a grace period as standard, and then only to supplement a regular loan.

As well as repayments, the option to increase the credit limit must also be taken into account. In Anglo-Saxon financial markets in particular, it is normal for households to be able to adjust their credit limit in line with

changes in market prices. If property prices rise, households can thus increase their credit. In the USA and the United Kingdom in particular, lending can be extended significantly through 'housing equity withdrawal'. The additional funds obtained can then be used for renovations, to repay other loans or for consumption (Jäger/Voigtländer, 2006). In 2003 alone, total equity withdrawn in the United Kingdom came to £48 billion – representing 4.2 per cent of the British gross domestic product (GDP). The aggregate equity withdrawal can also be negative, if households make more repayments than withdrawals overall. Housing equity withdrawal has been negative in recent years, as households have been reducing their debts in the wake of the financial crisis.

Although equity withdrawal based on the Anglo-Saxon model would also theoretically be conceivable in other European countries like Germany, in general it is not actively offered. Although in Germany, for example, it is possible to increase a loan back up to the original loan amount, an increase in the original credit line is unusual. This is also due to valuations. As lending is linked to mortgage lending value in most cases, an extension of the amount of the loan is possible only if investments have been made that have increased the value of the pledged property and a new valuation is carried out. If no measures have been implemented to add value, an adjustment of the original mortgage lending value is not permitted.

Stability of lending is an important consequence of the different financing cultures. While the coefficient of variation for gross lending – which measures fluctuations in lending – is only 12 per cent of the average in Germany, it is 22 per cent in the Netherlands and 43 per cent in the United Kingdom (EMF, 2013; own calculations). This is naturally also linked to differences in property price development. As we will see, however, the stability of financing plays a particularly important part in calming real estate markets.

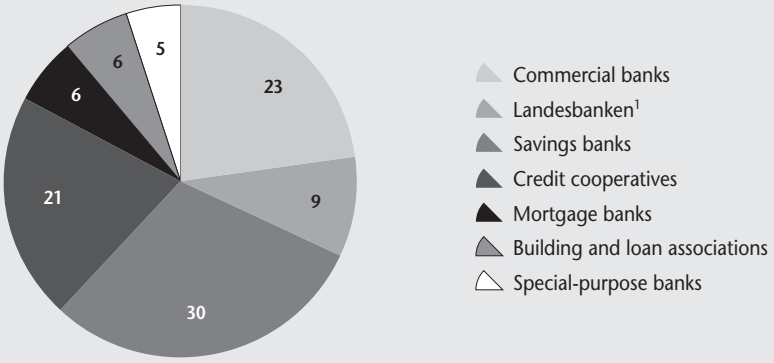
3.2 A detailed look at residential property financing in Germany

Residential property financing in Germany represents a special case in comparison with international standards, due to a culture of fixed interest rates and a particular emphasis on the principle of caution. This can be linked to the establishment of fixed interest rates, loan to value ratios and lending cycles. The majority of all loans granted in Germany are long-term loans. Loans with a fixed interest rate of more than five years are classed as long-term loans, in accordance with the definition used by Deutsche Bundesbank. However, it is not in fact unusual to have interest rates that are fixed for ten years or more; since 2000, over 70 per cent of all loans have consistently been

Long-term book credits by banking sub-sector

Figure 5

Percentages for the 3rd quarter of 2013



Basis: €1,867.5 billion. [1] German regional state banks.
Sources: Deutsche Bundesbank, 2014; own calculations

long-term loans. Almost 10 per cent of loans have medium-term fixed interest rates, while only about 15 per cent of all loans are variable-rate loans. Germany therefore has a particularly strong culture of fixed interest rates. It is also revealing that almost all banking sub-sectors in Germany grant long-term loans and that their shares of long-term financing roughly match the distribution of overall loan portfolios (Figure 5). In line with their overall loan portfolios, savings banks are the market leaders for long-term financing with a market share of 30 per cent, followed by commercial banks and cooperative banks.

Furthermore, the German market is dominated by mortgage loans with long-term fixed interest rates and compensation for lost interest (prepayment compensation) in the event of termination. According to figures from Deutsche Bundesbank, over 72 per cent of new mortgage loans granted in 2012 had fixed interest rates of more than five years (Voigtländer et al., 2013, 87). This is almost 4 percentage points higher than in 2008. Over 30 per cent of the loans had a fixed-interest period of ten years or more. In contrast, variable loans with interest rates to be adjusted within a year accounted for only 14 per cent of all loans granted in 2012, representing a slight decline since 2008 (15 per cent). The share of short-term loans in loan portfolios is once again significantly lower. This is an indication that borrowers are using short-term loans mainly as bridge loans and not as an alternative to long-term financing.

Another determining factor in real estate financing is the valuation of the property concerned, which from an international perspective can in Germany be described as conservative. Financing is based on the mortgage lending value of a property, which is the case in only a few other countries (for example Poland). In contrast to the market value of a property, the mortgage lending value represents the value "of the property that can be expected to be achieved in the event of a sale on the relevant real estate market based on experience, disregarding temporary price volatility such as that caused by economic factors and eliminating speculative elements, throughout the entire term of the loan" (Section 3 of the Regulation on the Determination of the Mortgage Lending Value – Beleihungswertermittlungsverordnung).

Another important characteristic of German real estate financing is the amount of the loan. The higher the proportion of debt capital used, the greater the exposure to losses caused by borrower default. The current low interest rates offer borrowers incentives to take up more debt, which also allows them to avoid having to save up their own capital for a long time. In Germany, however, loan amounts have remained largely stable or have even fallen slightly despite historically low interest rates, as surveys conducted by the Association of German Pfandbrief Banks have shown. In particular, customers have taken advantage of low interest rates to reduce debts more quickly through higher principal repayment rates. Banks in particular have been promoting this.

German mortgage financing is thus characterised by the principle of caution. Long-term fixed interest rates and high levels of capital backing reduce the risk of default and give customers greater certainty in planning.

3.3 The effects of different residential property financing systems

Financing markets vary from one country to the next. While long-term financing agreements with low loan to value ratios predominate on the German real estate market for example, financing in the United Kingdom tends to involve short-term loans with higher loan to value ratios. The following analysis will examine how these different financing practices impact the real economy. The analysis again focuses on the housing market, which is regarded here as being representative of the real economy. The connections between financing, the housing market and the overall economy will firstly be discussed in theoretical terms. This will be followed by a presentation of the empirical consequences of different financing systems. Finally, the main results will then be applied to other parts of the real economy.

3.3.1 Interplay between real estate financing, the real estate market and the overall economy

Monetary policy has a major influence on financing costs and asset prices (Bernanke/Gertler, 2000). The interaction between monetary policy and housing prices is outlined below using a representation devised by Giuliodori (2005). On this basis, the fundamental connection between monetary policy, housing prices and the overall economy is explained first. The effects of different financing conditions are then discussed. We have deliberately kept the illustration simple, in order to be able to focus on key issues. For a detailed presentation of the mechanism of transmission of monetary policy, please refer for example to Mishkin (2007) and Bjørnland/Jacobsen (2010).

Monetary policy provides the stimulus that acts as the starting point. If the central bank reduces key interest rates in order to improve liquidity supply to banks, for example, competing banks will in principle pass on the reduced interest rates to borrowers. The situation will also change for investors, as fixed-income investments – such as bonds and fixed-term deposits – become less attractive due to lower interest rates. Demand for real investments such as shares and residential property consequently increases, partly because these can be financed under more favourable conditions and also because alternatives become less attractive. Moreover, lower interest on loans has a direct impact on households that have arranged loans with short interest periods. Lower interest rates therefore lead to a direct increase in available income and thus in consumption.

Increased demand for properties will in the short term meet an inelastic supply, as residential construction can be expanded only after a significant delay. This leads to price increases on the housing market, which can stimulate macroeconomic consumption through two channels, the asset channel and the credit channel. The asset channel was first described by Milton Friedman (1957). He stated that households that assume the value of their assets will continually rise can increase their lifecycle consumption, for example by saving less for their retirement due to gains on their assets. Although this is plausible, it should be assumed that the credit channel plays a much more important role in modern economies (Miles, 1994). Real estate thus constitutes the most important security for loans in an economy. In Germany, for example, more than half of loans (around 55 per cent) are collateralised with real estate (Voigtländer et al., 2013). If property prices then rise, households and companies gain additional borrowing options. These loans can then be used in turn to carry out renovations, reduce other liabilities such as credit card debts or increase consumption.

An increase in macroeconomic consumption has repercussions on demand for housing. If more money is available to households for consumption, these will drive up demand for housing. This can result in an upward spiral in which the housing market increasingly boosts macroeconomic development. Growth in the USA before 2005 is often attributed to the interplay of macroeconomic consumption and rising house prices (Akerlof/Shiller, 2009). However, this can also develop in the opposite direction. If key interest rates rise, mortgage loans become more expensive and the bond market becomes more attractive. Demand for residential properties then falls and prices come down. Via the asset channel and the credit channel, this in turn leads to restrictions on consumption, which then have a negative impact on the real estate market. This can result in a downward spiral, as was experienced until recently by the United Kingdom or the USA, for example. Particularly when prices have developed a momentum of their own due to overly optimistic expectations, an interest rate rise can burst such a speculative bubble and plunge many households into excessive debt.

However, financing conditions play a crucial part in determining the strength of the impact of monetary policy stimulus on the real estate market. We will therefore discuss below how different financing practices affect the connection between mortgage loans and demand for residential property and consumer goods, and what determines the relevance of the credit channel and that of the feedback loop between consumption and residential property prices.

Borrowing costs, consumption and residential property

The first step involves examining the effect of a change in costs for mortgage loans on demand for housing and other consumer goods. We will look at consumer goods and real estate together, as the interdependencies are the same in both cases. Residential properties themselves are also consumer goods. In the second step, we will analyse the repercussions of an increase in options for consumption on the housing market.

The establishment of fixed interest rates for loans is crucial in determining the strength of the connection between mortgage interest and demand for housing and consumer goods. It goes without saying that changes in interest rates influence demand from those who do not yet own a property and have not yet taken out a loan, in all countries. In view of the considerable importance of loan portfolios in an economy, however, it is even more important to look at the effects of a change in interest rates on borrowers. This can be illustrated by a rough calculation. As we saw in Section 3.1, the prevalence

of variable-rate loans varies widely between different countries. They are very common in Portugal, Finland, Ireland, Spain and the United Kingdom and less common in Belgium, Germany and France. Unfortunately, detailed data are not available on the distribution of fixed interest rates for other loans in the different countries.

For the purposes of simplification, we will assume below that all other loans have a ten-year fixed interest rate. This will certainly be overestimating the prevalence of fixed interest rates in some countries; such long-term loan products are an exception in the United Kingdom and Ireland, for example. Nevertheless, the differences in the importance of interest rate changes will become clear. Based on this assumption, we can determine what percentage of borrowers will be affected by a change in interest rates within a year. This naturally affects all borrowers with variable-rate loans. In addition, 10 per cent of all borrowers with long-term loans will also be affected, due to fixed interest rates coming to an end. This results in a level of 23.5 per cent for Germany, while almost 75 per cent of borrowers in the United Kingdom will be affected.

Effect of a change in interest rates on available income of households

Table 1

in 2012, in per cent

Country	Ratio of outstanding housing loans to GDP	Percentage of variable loans	Percentage of households affected by a change in interest rates in one year	Increase in available income as a result of a change of 1 percentage point in interest rates, as a percentage of GDP
Belgium	80.0	10	19.0	0.15
Germany	66.2	15	23.5	0.16
Finland	72.9	96	96.4	0.70
France	63.0	15	23.5	0.15
Greece	55.6	28	35.2	0.20
Ireland	140.7	67	93.5	1.32
Italy	33.9	47	52.3	0.18
Netherlands	227.4	18	26.2	0.60
Austria	44.3	61	64.9	0.29
Portugal	89.2	99	99.1	0.88
Spain	94.7	91	91.9	0.87
United Kingdom	119.1	72	74.4	0.89

Note: It is assumed that all loans other than variable loans have a ten-year fixed interest rate; calculations for Ireland and the United Kingdom are based on data from 2013.
Sources: EMF, 2013; ECB, 2014; own calculations

If we also take into account the volume of outstanding housing loans as a percentage of GDP, we can determine how available household income will change as a result of a change of 1 percentage point in interest rates. If interest rates in Germany fall by 1 percentage point, income will rise by 0.16 per cent of GDP. In Portugal, Spain and the United Kingdom, however, the effect is almost 0.90 per cent of GDP, making it nearly six times as strong. The results of these calculations for 2012 are shown in Table 1. Overall, the combination of loan volumes and fixed interest rates gives rise to very different potential scenarios for demand for housing in the event of a change in interest rates. The real estate markets in Belgium, France, Germany, Italy and Greece are largely protected against changes in interest rates, while the markets in countries such as the Netherlands, Finland, Spain, Portugal, the United Kingdom and Ireland are much more sensitive to interest rate movements.

Residential property prices and consumption

Real estate constitutes the most important security for loans in an economy (Voigtländer et al., 2013). However, the connection between changes in house prices and consumption via the credit channel is weak in some countries. Between 1990 and 2013, the correlation coefficient between an increase in house prices and an increase in consumption was only around 0.23 in Germany, 0.21 in France and 0.31 in Belgium, contrasting with 0.56 in the United Kingdom (Figure 6). The average value for OECD countries was 0.38, showing that the United Kingdom and Germany are clear opposites.

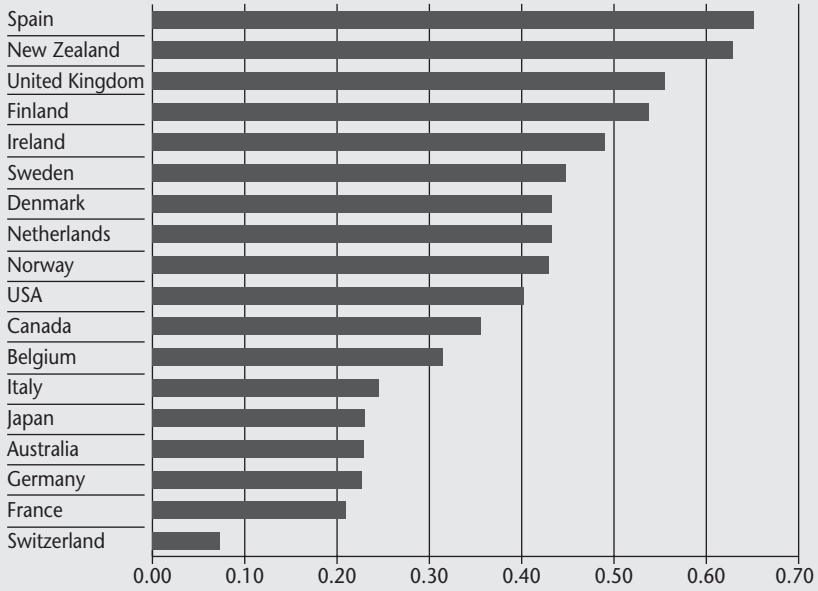
The relatively weak links between housing prices and consumption in countries such as Germany can essentially be attributed to three factors: firstly, comparatively low loan to value ratios; secondly, the very limited options for equity withdrawal; and thirdly, rules on valuation (Regulation on the Determination of the Mortgage Lending Value).

Financing in Germany typically involves a relatively large amount of equity, while loan to value ratios are much higher in the Netherlands and the United Kingdom. The higher the loan to value ratio, the more potential there is for converting increases in house prices into consumption through the credit channel. However, housing equity withdrawal in particular (Reifner et al., 2010; Reinhold, 2011), which is common in the United Kingdom and the USA, is fundamental to this, as outlined in Section 3.1 above. The adjustment of credit lines to the market value of properties is in some cases very actively promoted. As we have seen, housing equity withdrawal can account for a significant part of lending. Although it would be legally possible to withdraw equity in this way

Correlation between house prices and consumption

Figure 6

Correlation coefficients for selected OECD countries from 1990 to 2013



Sources: OECD, 2014; own calculations

or to take out a second mortgage loan in Germany and other countries, this is not offered in practice. As explained above, one reason for this are the rules on valuation, which do not generally allow for subsequent increases in value.

What is more important, however, is that the link to the mortgage lending value prevents the cyclical lending seen in most Anglo-Saxon countries. As the mortgage lending value remains constant over time, borrowers cannot simply adjust their credit limit to market conditions as they wish. This also prevents households from extending their loans in booming markets and then finding themselves with excessive debts in the event of a downturn. There are also other countries in which the link between house prices and consumption is weak, such as Italy and Switzerland. The main reason for this is likely to be that loans are not very widely used overall, for example due to low home ownership rates (Switzerland) or the predominance of financing using the buyer's own capital (Italy). There is a particularly strong correlation in Spain, where housing equity withdrawal is unusual. The fact that Spain nevertheless has such a high value is probably due to the strong consumer preference for residential property in the last decade.

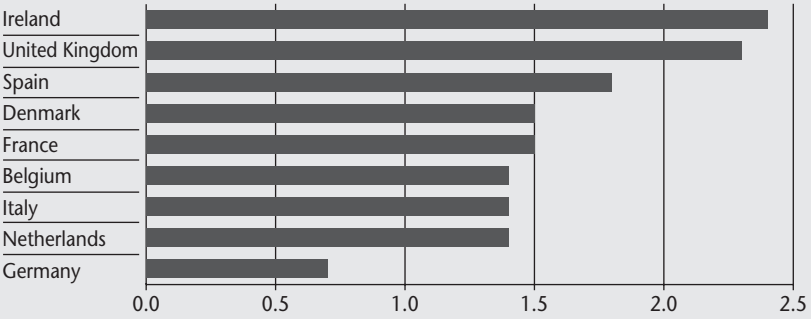
Consumption and residential property prices

Not only do changes in house prices affect consumption, but a change in consumption also has an impact on house prices. These repercussions form the basis for the emergence of upward or downward spirals, as experienced by the USA in the last 15 years. As described above, the relationships between house prices and consumption vary widely, which means that there is also significant variation in the repercussions. However, this is only part of the explanation. Residential properties are important consumer goods in all countries, but in some countries they are bought and sold more frequently, as Figure 7 shows for the period from 2002 to 2012. On average, around 2.3 per cent of the population over 18 years of age is in the process of buying property on the real estate market in Ireland and the United Kingdom, compared with around 1.4 per cent in France and Belgium and just 0.7 per cent in Germany. This has a corresponding impact on the relationship between changes in consumption and house prices. If properties are generally bought and sold less often, the potential for upward and downward spirals is also reduced.

One reason for the difference in the number of transactions can be found in real estate market development during the period under review. While most residential property markets boomed between 2000 and 2007, the market in Germany stagnated. However, even in the period from 2010 to 2012, when the markets in most countries were in crisis and the German market was experiencing high demand, the volume of transactions abroad was still higher.

Ratio of housing purchases to population over 18 years of age Figure 7

2002 to 2012, in per cent



Sources: EMF, 2013; own calculations

We can cite two main reasons why the volume of transactions in Germany is structurally lower. Firstly, transaction costs are much higher in Germany than in other countries. As a study by Zander/Faller (2006) shows, transaction costs in the United Kingdom, including estate agents' and solicitors' fees and taxes, amount to about 5 per cent of the property value. In contrast, costs in Germany range from 9 to 13 per cent depending on the federal state. As land transfer tax rates have risen significantly in the meantime, overall transaction costs are now likely to be considerably higher in some cases.

The number of home owners is also lower in Germany, which means that there are fewer potential buyers from the outset. Although rented properties are also sold, this is much rarer than with owner-occupied homes, at least when the owners are private investors. Finally, there is also an important cultural difference. Germans tend to acquire properties later in life and then stay in them, while in countries like the United Kingdom "climbing the property ladder" is a typical lifecycle strategy. As a result, only 28 per cent of home owners in Germany are under 39 years of age, compared with 32 per cent in the United Kingdom. The proportion of these home owners in the group aged between 25 and 29 is even more striking. In the United Kingdom it is 59 per cent, compared with just 11 per cent in Germany (Chiuri/Jappelli, 2003). This shows that it is not only the structure of real estate financing that has repercussions on the housing market, but that other institutional regulations also influence the relationship between the capital market and the housing market. Other factors, such as supply on the rental market, are discussed in Section 3.5.

3.3.2 The consequences of different financing systems for the housing market

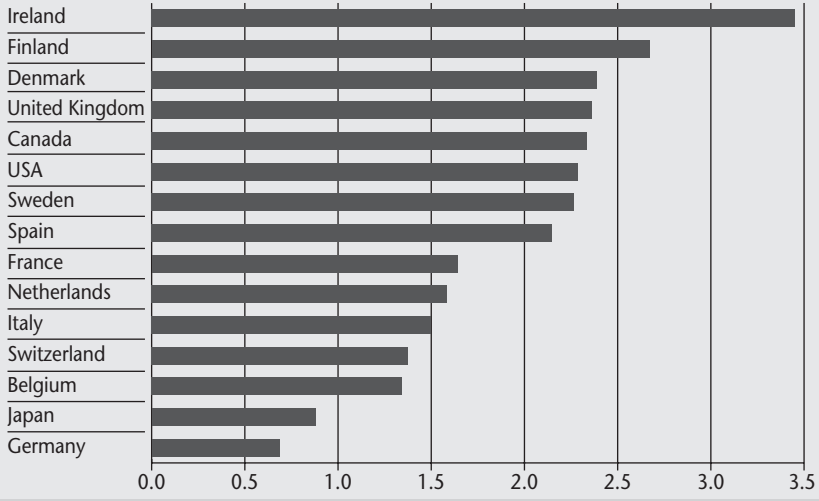
Now that we have demonstrated how different financing systems influence the interplay between monetary policy, the real estate market and macroeconomic consumption, we need to ask what the quantitative impact of this is. It makes sense to look first of all at the volatility of the markets. Figure 8 provides an overview of various markets over the period from 1990 to 2010.

The standard deviation in housing prices varies widely between countries. Within the EU, France, Italy, Belgium and, in particular, Germany have a relatively low standard deviation, i.e. prices fluctuate little. This was to be expected, as the establishment of fixed interest rates, capital backing and other rules moderate the connection between changes in interest rates and housing prices in these countries. In contrast, the markets are considerably

Standard deviation in house prices

Figure 8

1990 to 2010, in percentage points



Sources: OECD, 2014; own calculations

more volatile in Ireland, Finland and the United Kingdom, where there is a much closer link between developments in the financial markets and the real estate sector due to variable interest rates, high loan to value ratios and options for equity withdrawal. The USA, whose financing system appears at first glance not to be dissimilar to the British market, was a surprise here. Although variable loans are common in the USA, loans with long-term fixed interest rates are more important, with some even having 30-year fixed rates. This is likely to be a key reason for greater stability in housing prices.

Empirical studies into the connection between interest rate and GDP shocks on the real estate market are also revealing. With the aid of econometric models, these studies analyse the impact of a sudden change in interest rates on housing prices within a certain period, for example. The results of a study by Jäger/Voigtländer (2006) are briefly outlined below.

If interest rates unexpectedly rise by 1 percentage point, house prices in Finland will fall by 8.3 per cent within a year. In the United Kingdom they will fall by 7.5 per cent, in the Netherlands by 4.4 per cent and in Germany by only 0.2 per cent. Countries with a culture of fixed interest rates like Germany, France and Japan have very little sensitivity to interest rates, i.e. the real estate market is largely protected against volatility on the capital market.

In countries where variable-rate loans predominate, however, there is a much closer link between interest rates and prices. Spain is the only exception here, which may be due to the data used. The study takes into account data from 1970 to 2005. As Spain did not liberalise its financial market until the 1990s and mortgage loans have only been available on the mass market there since then, it has certainly underestimated Spain's current sensitivity to interest rates.

This situation is essentially the same if GDP changes, although the differences are less pronounced. Nevertheless, a look at the United Kingdom and at Germany once again shows a significant difference, as expected. The impact of a change in GDP on prices in the United Kingdom is around five to six times that in Germany. Demary (2010) also concludes on the basis of a slightly different methodological approach that the impact on prices in the United Kingdom is around five times as strong as in Germany. Other studies such as Carstensen et al. (2009) and Tsatsaronis/Zhu (2004) also confirm these differences, although they do not give specific figures.

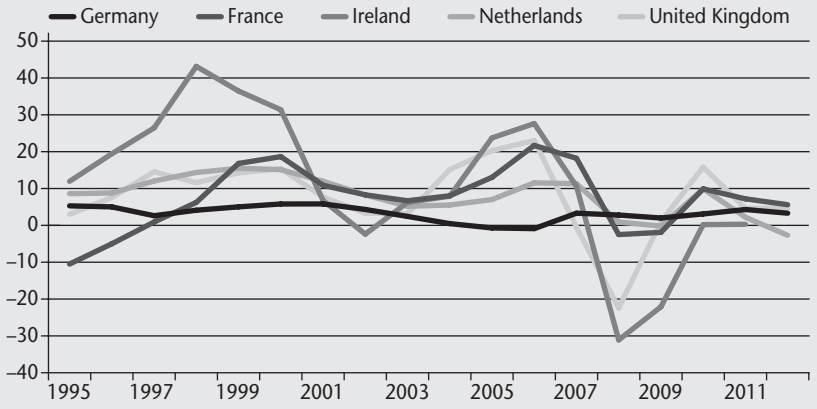
3.4 Application to other markets

The results for residential property financing and the housing markets can in principle also be applied to other markets. However, it is usually more difficult to demonstrate these connections empirically, due to a lack of available data. This section will therefore look at the office property markets and at financing for property companies as an illustration. Interest rate volatility on other markets should ultimately have only a limited effect on demand for tangible assets if financing is mainly provided with fixed interest rates.

Figure 9 shows the change in total return on office properties between 1995 and 2012. Total return comprises the current rental yield and the change in the value of the property. Yields on office properties typically experience very severe cyclical volatility, which is confirmed in the diagram. However, there are very large differences. The Irish office property market goes through a very pronounced cycle and the United Kingdom also experiences sharp swings, while the cycle in Germany is comparatively flat. The standard deviation in office property yields in Germany is only 1.9 percentage points, compared with almost 10 percentage points in the United Kingdom and over 19 percentage points in Ireland. This difference is also confirmed on the basis of data from other sources. Based on capital values provided by Jones Lang LaSalle, Pomogajko/Voigtländer (2011) calculate that the standard deviation in major centres for office properties in the United Kingdom and Spain is around two to three times as high as in major German and Belgian office

Total return on office properties Figure 9

in per cent



Source: IPD, 2013

hubs. This suggests that the differences are also affecting the markets for commercial property financing. However, the Dutch market is largely stable according to both data sources, while France is much more volatile.

Compared with international markets for private residential property financing (cf. Section 3.1), markets for corporate financing and commercial property financing have a much more individual structure, i.e. it is more difficult to identify typical financing models clearly and there are fewer noticeable differences between countries with a culture of fixed interest rates and those that tend to use short-term financing. In terms of methodology, the problem is that little comparable data are available, as corporate financing is generally more complex than the financing of private real estate investments. Companies also have many more financing options than private households. Depending on their size, companies can, for example, issue their own bonds, attract additional capital providers through the stock market or via OTC trading and make use of supplier credit and hybrid forms of financing. Significant differences in corporate financing thus also emerge at national level.

To compare the financing of property companies, we analysed data from the Bloomberg database. This database offers a wealth of information on stock-market-listed companies, including information on financing. We analysed companies that are included in the GPR 250 Index (Global Property Research). These are companies that focus on the management of real estate

Capital ratios and proportion of long-term financing for stock-market-traded property companies Table 2

in 2012, in per cent

Country	Capital ratio	Proportion of long-term financing
Belgium	45	67
Germany	29	71
France	43	78
Italy	14	65
Netherlands	51	89
Austria	42	76
Sweden	44	70
Spain	17	60
United Kingdom	52	85

Sources: Bloomberg, 2014; own calculations

and that are actively traded on stock exchanges, i.e. are correspondingly liquid. If we aggregate the results at national level, we see the picture shown in Table 2 with regard to capital ratios and the proportion of long-term financing (maturity of more than one year).

Capital ratios vary widely between countries. The range extends from 14 per cent in Italy to 52 per cent in the United Kingdom, with Germany in the middle with a ratio of 29 per cent. As in the private real estate financing market, a high capital ratio indicates a higher level of security, as the company can absorb losses more easily. However, higher capital ratios in corporate financing are also indicative of lower dependence on bank loans. Banks play a much smaller part in corporate financing in Anglo-Saxon countries in particular, as financing via capital is the predominant approach. In contrast, companies in continental European countries have a closer relationship with their banks. The low capital ratios in Italy and Spain are also a result of the economic crisis, where ratios were still around 30 per cent in the early 2000s.

What is more important, however, is the prevalence of long-term financing. The picture here is more homogeneous, with shares ranging from 60 per cent (Spain) to 89 per cent (Netherlands). However, the database records only loans with a (remaining) term to maturity of more than one year, so a more detailed breakdown is unfortunately not possible. Corporate financing follows different models from residential construction financing. Although it is much more diverse on the whole, it varies a lot less between countries (ECB, 2013). The differences compared with residential construction financing also make it clear that financing depends not only on general market conditions, but also on demand from customers and on conventions in the respective sector. Structural differences in residential construction financing could otherwise be applied directly to other sectors.

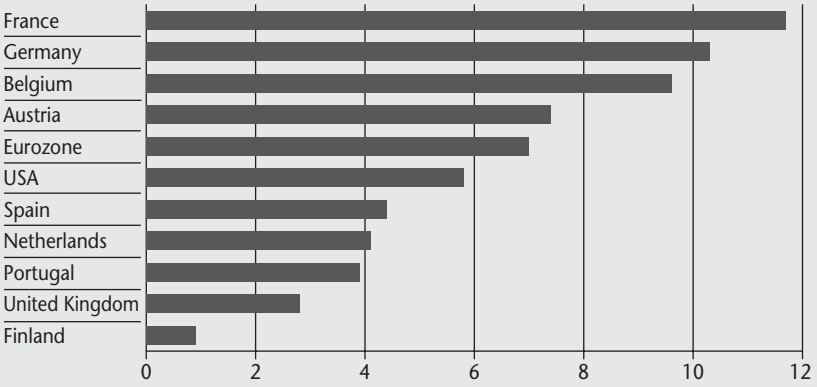
3.5 Reasons for different uses of long-term financing

There are various reasons for the existence of different financing systems, which can relate to both supply and demand. Before we look at the supply side and general conditions for provision of long-term financing in Section 4, we give an overview of differences on the demand side, relating to the preferences for and requirements of various types of financing. These explain why short-term loans predominate in many countries despite the macroeconomic advantages of long-term financing that have been demonstrated.

When we look at differences between financial systems on the demand side, it becomes clear that these lie not only in preferences for different time periods, but also in general inclinations with regard to savings. The latter can be seen in variations in savings ratios between some OECD countries. While private households in countries like Germany and France have a savings ratio of over 10 per cent of net income over a period of several years, the average savings ratios in countries like Finland and the United Kingdom either indicate a debt or are only just above zero per cent. Figure 10 lists the different savings ratios of selected OECD countries. If we compare these figures with the proportions of variable loans (cf. Section 3.1), we can see that countries with high savings ratios in particular tend to prefer longer-term financing. In contrast, short-term loans predominate in countries with low savings ratios like Finland and the United Kingdom. The overall picture thus suggests that there are systematic differences in financing preferences that are not limited to the period alone.

Savings ratios for private households Figure 10

in 2012, as a percentage of net income



Source: OECD, 2014

As well as the level of available income and existing assets, individual savings habits are sometimes interpreted in economic theory as an expression of caution. The more cautious and risk-averse a person is, the greater the proportion of available income they will save (Ventura, 2007). Browning/Lusardi (1996) point out that uncertainty regarding income has a crucial influence on the amount of savings. According to the results of a recent survey, most savers in Germany cite protection against unforeseen events and provision for their retirement as the most important reasons for saving (MEA, 2008).

Although this inclination towards stronger protection against risks initially appears to be purely individual, it is also influenced to a large extent by regional and cultural factors. Saving is judged differently in each society and is learnt through the different standards that apply. The GLOBE studies (Global Leadership and Organizational Behaviour Effectiveness), initiated at the Wharton School of Management at the University of Pennsylvania in 1993, attempt to record these kinds of cultural differences and establish ways to measure them. The dimensions that the project aimed to record included the tendency to avoid uncertainty, i.e. the extent to which individuals try to avoid uncertainties, and how forward-looking their behaviour is (House, 2004). Judging by the survey results from 62 countries, respondents in Germany had a more long-term focus than average and a pronounced tendency to avoid uncertainty. In the USA and the United Kingdom, however, respondents focused more on the short term when planning for the future and their avoidance of uncertainty was much lower.

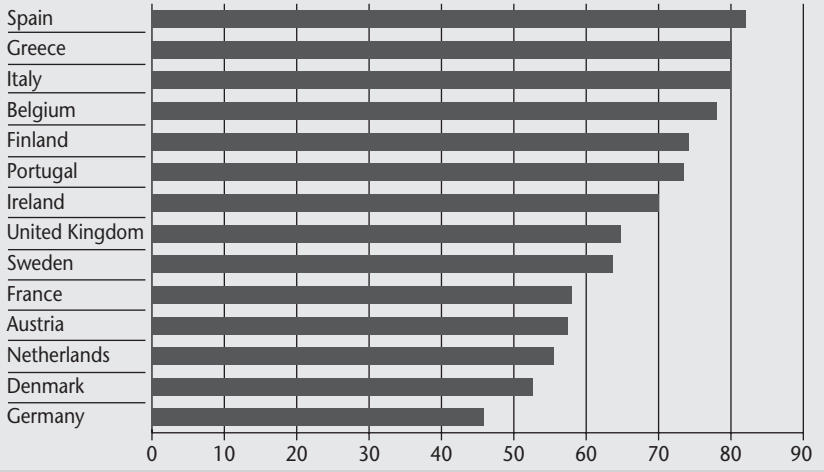
As well as cultural norms and the preferences that these sometimes give rise to, different financing requirements can also be identified depending on market conditions. The following section aims to outline the influence of different needs on demand, based on the example of the private real estate financing market. If we look first of all at countries in which housing purchases are financed mainly with variable-rate mortgage loans, we notice that home ownership rates are usually very high in these countries (Figure 11). Over 70 per cent of households in Ireland, Italy and Spain were owner-occupied in 2010. In the United Kingdom, where variable loans also predominate, the proportion of households owning their own properties was also above average at almost 65 per cent. This is no coincidence, as underlined by Voigtländer (2013), for example. After all, the available alternatives determine what type of financing is suitable.

Germany has a very large and attractive rental property market, which caters for all income levels. Around a third of households with an available

Rates of residential property ownership

Figure 11

in 2010, in per cent



Source: EMF, 2013

income of over 3,000 euros live in rented accommodation, emphasising how attractive the market is. Young households therefore usually rent to begin with, and even their second and third homes are often rented. Only when a household wants to stay in one place in the long term and has saved sufficient funds to qualify for a loan on favourable terms will it buy a property to live in. As a result, there are no subprime markets in Germany as in other countries. Households do not require loans with risk premiums, because there is always an alternative to home ownership.

The situation is different in Spain, Ireland and the United Kingdom, where the supply of private rented homes is very small and social housing is often unattractive due to its poor quality. This is also a significant difference compared with the German market, where there are high standards for social housing. If the rental housing market is small, even young households depend on acquiring their own property. As it is probable that buyers will not stay in their first home for long and will need to sell it again quickly, variable-rate loans are an ideal solution and have the advantage that they can be paid off quickly without any additional costs. They also offer more favourable terms on average, although the spread compared with fixed-interest loans can fluctuate wildly depending on the prevailing legal and market conditions.

Different housing markets thus give rise to different financing preferences. While German households can afford to save for a long time and purchase a property only once they have decided where they want to live in the long term, households in the United Kingdom and Spain have to stay flexible and are dependent on financing their purchases with less of their own funds. This affects demand for credit and the structuring of loans, which in turn also affects supply. The sharp rise in issues of mortgage-backed securities (MBS) in the United Kingdom may be precisely because demand for short- to medium-term funding is so high there. In Germany, on the other hand, the major role played by Pfandbriefe is partly due to demand for particularly long-term lending. Supply and demand thus have a reciprocal effect on each other.

It can be assumed that private real estate financing also influences funding and the structuring of loans in other areas of financing (corporate financing, consumer loans, public sector lending) due to its size alone. However, other factors such as attitude to risk and corporate culture certainly also play a part. We can basically assume that financing systems evolve slowly because it takes time for supply to adjust to demand and vice versa. The provision of long-term loans in particular requires a learning process, as we will see below.

3.6 Interim conclusion

Section 3 explained the importance of long-term financing to the real economy using the example of the housing market. The residential property financing markets were firstly compared in an international context, and the effects of different residential property financing systems were then described. The analysis revealed key differences between European markets with regard to the establishment of fixed interest rates, loan to value ratios, repayment habits and options for increasing credit limits.

If we summarise the empirical findings and analyses, we see that longer-term fixed interest rates and more cautious lending overall calm the housing markets. Volatility in the markets is lower and sensitivity to macroeconomic shocks – i.e. sudden changes in interest rates or output – is less pronounced. This gives market players greater security in planning. Speculative bubbles also become less likely. These mainly tend to arise when market players become too optimistic for the future based on strong price growth in the past and buy only because they are banking on further price increases (Stiglitz, 1990). If prices grow at a more moderate pace and households cannot choose a high loan to value ratio to maximise their yield, the likelihood that a speculative

bubble will develop is significantly reduced. However, cultural differences and the market structures mean that long-term loans predominate in only some markets and countries, despite these advantages. Nevertheless, in the light of the analysis conducted it would seem prudent for all markets to at least retain the potential for long-term loans, particularly in view of the positive impact on stability.

4 Provision of long-term financing

Having shown, based on the housing market, what impact long-term financing has on both markets and the economy as a whole, the following section will discuss how long-term financing can be offered under the current conditions. The discussion will initially focus on banks, as they are the most important lenders in an economy. Moreover, the discussion about long-term financing by banks will allow us to derive criteria that other financial intermediaries will need to fulfil in order to qualify as reliable long-term lenders.

We will firstly look at the role of banks in the economy. This discussion is important as it will enable us to draw a line later between banks and other financial intermediaries such as insurance companies and credit funds. The second stage is to examine the options available to banks for funding long-term loans. We will also describe how long-term financing by banks developed historically and what conclusions we can draw from this for the current debate. Finally, we will examine the extent to which alternative financial intermediaries such as the insurance companies and funds suggested in the EU green paper can replace lending by banks. The aim of this section is to discuss the ability of the various financial intermediaries to provide long-term financing under the current general conditions and based on their respective business models. Section 5 will then show how general conditions will change under the new financial market regulations (Basel III, Solvency II) and what impact this will have on the market for long-term financing.

4.1 Economic function of banks

Banks play an important part in the economy, which becomes clear on the basis of their size alone. Total bank assets in the Eurozone sum up to €30.7 trillion, around 3.5 times the Eurozone's GDP. Loans for private resi-

dential construction financing alone total €3.8 trillion in the Eurozone. From an economic viewpoint, banks act as intermediaries between borrowers and savers on the capital market (Fama, 1980). Investors such as institutional investors or private savers give banks capital on the basis of prospective profits, and the banks then pass this capital on to borrowers. However, the banks' role does not end with simply passing on capital. Banks ultimately also carry out maturity transformation, for example by converting short-term investments into longer-term loans. They are able to do this mainly by managing investments and loans for a large number of customers and hence ensuring broad diversification.

Maturity transformation has come under fire in the wake of the financial crisis, due to the difficulties experienced by some institutions. Some banks became illiquid because investors withdrew considerable sums from the money market in the short term and banks were no longer prepared to lend money to other banks due to major uncertainty following the insolvency of Lehman Brothers (Admati/Hellwig, 2013). This caused maturity transformation to overrun in some cases, while the resulting liquidity risks were ignored; this is why liquidity management plays an important part in Basel III (cf. Section 5.1). At the same time, however, we must not overlook the importance of maturity transformation in the provision of long-term financing. While there is widespread demand for long-term financing, only some investors are prepared to commit themselves in the long term, partly owing to interest rate risks.

Risk analysis and risk monitoring are another important function of banks. Banks carry out credit checks to enable them to price loans in accordance with the risks they are taking on. Finally, they monitor loan default risks on an ongoing basis, which not only allows them to intervene at an early stage but also starts the process of provisioning at the banks, enabling them to deal more easily with any defaults that actually occur. Economies of scale generally apply to the banking business. The more loans a bank grants, the better its ability to classify credit risks and diversify default risks. A critical size is also required for maturity transformation, to mitigate the risks of short-term withdrawal of capital.

The functions of banks that we have outlined play an important part in long-term financing in particular. The longer the maturity, the more difficult it is to predict and assess default risks. Banks' experience in evaluating creditworthiness becomes even more important in view of this. Maturity transformation also becomes crucial, as not all investors are prepared to commit

their capital in the long term. However, another decisive factor is funding, i.e. how banks structure the liabilities side of the balance sheet. After all, the more capital is available to banks themselves in the long term, the more easily they will be able to provide long-term financing. A separate section will therefore be dedicated to funding below.

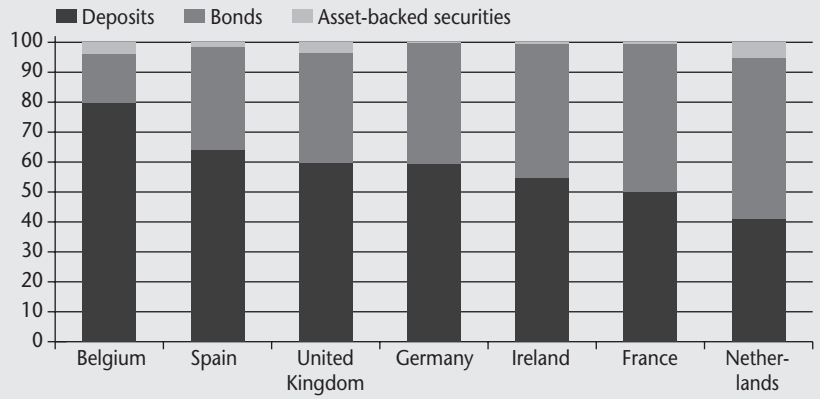
4.2 Funding of banks

Although maturity transformation is an important part of banks' activities and is essential for the provision of long-term financing, limits are imposed on it in the interests of financial stability. The experience gained from the financial crisis demonstrates this. Funding that is volatile and available only in the short term is therefore generally unsuitable for the funding of long-term loans. Typical forms of funding for long-term loans include customer deposits, bonds and securitisations. These forms of funding are common in almost all European countries but are used to very different degrees, as Figure 12 illustrates.

Household deposits predominate in most countries and include demand deposits on current accounts, savings books and savings certificates with a fixed investment period. This form of funding is particularly widely used in Belgium and Spain, although the proportion of deposits in the funding mix is also very high in other countries. Funding via bonds also plays an important role in many countries. Banks borrow liquid funds on the capital market

Funding mix for long-term loans Figure 12

in 2012, in per cent



Sources: ECB, 2014; SIFMA, 2013

and then pass them on to customers in the form of loans. The proportion of bonds is relatively high in the Netherlands and France in particular. Covered bonds, for which the risk of default is extremely low, play a particularly important part in long-term financing. The final option available for longer-term lending is securitisations, i.e. debts that are backed by payment obligations arising from loans and are sold on the capital market bundled together as asset-backed securities (ABS). As Figure 12 shows, this form of funding is of little significance compared with the other two. However, the picture is still distorted by the aftermath of the financial crisis, in which the securitisation market suffered particularly severe losses (Jäger/Voigtländer, 2007). The securitisation market played a much bigger role in some countries such as the United Kingdom and Ireland prior to 2007, and it is possible that it could increase in importance again.

These forms of funding will be briefly explained and analysed below to establish the extent to which they can contribute to long-term financing. Finally, we will look at the importance of the funding mix.

4.2.1 Deposits

The funding of loans via deposits is the most important form of funding not only in Europe, but also worldwide (CGFS, 2006). Financing through deposits is, after all, the most traditional form of funding. Deposits are passed on directly to borrowers, allowing for an appropriate margin. As savings deposits generally bear variable interest rates, however, it initially makes sense to charge variable interest on loans as well. It is therefore helpful when transforming deposits into long-term fixed-interest loans if either the savings deposits are also invested at fixed rates or the risks of transformation are low. A bank is ultimately taking on a considerable interest rate risk if it funds long-term fixed-interest loans with variable-rate deposits. Accordingly, we must ask how volatile interest rates are. A deposit contract is always an incomplete contract.

Firstly, we can look at the proportion of fixed-interest savings deposits. The statistics available here are unsatisfactory on the whole, as fixed-interest savings deposits are not reported for all countries and those that do publish this information only record savings deposits with a fixed interest rate of more than two years. If we look at the proportion of all deposits in selected European countries that are fixed-interest savings deposits, we see that it is between 7.7 and 17.7 per cent. Both the percentage and the spread of long-term investments are therefore low. The percentage in the United Kingdom

is particularly low, at 7.7 per cent. The figures for Germany and France are considerably higher, at 12.2 per cent and 13.9 per cent respectively; Spain has the highest proportion of long-term savings deposits, at 17.7 per cent.

Another aspect is the stability of the available deposits. If household deposits show a large degree of volatility over time due to withdrawals or a shift into other investments, transforming them into long-term lending becomes more difficult. Liquidity risks can arise for banks, particularly if large numbers of households behave in the same way. Although banks can supplement funding from deposits via the money market in the short term, this results in higher costs, which can be passed on to customers only through variable-rate loans. Once again, there are few differences between countries here. The coefficient of variation (standard deviation from the mean) for the volume of deposits across all countries analysed ranged from 10.7 per cent in the United Kingdom to 18.7 per cent in Belgium. The level of volatility is particularly low in countries where variable interest rates are predominant and particularly high in countries that typically have long-term fixed interest rates. Overall, however, the differences are fairly moderate. The coefficients of variation in France and Germany were 11.6 per cent and 11.9 per cent respectively.

There are therefore no systematic differences with regard to fixed interest rates on savings deposits and the volatility of savings deposits. Another important requirement for the transformation of savings deposits into long-term fixed-rate loans is limiting interest rate risk. Data relating to short-term interest rates are often difficult to compare at the international level and are rarely available for longer periods. However, short-term nominal interest rates typically change with inflation, as real interest rates are a decisive factor for investors. Changes in consumer prices are thus a good indicator of interest rate volatility.

According to our own calculations based on OECD statistics (OECD, 2014), the standard deviation for inflation is actually higher in many countries where variable interest rates predominate than in countries where fixed-rate loans predominate. The standard deviation for inflation between 1980 and 2013 was only 1.5 percentage points in Germany, compared with 3.4 percentage points in the United Kingdom and as much as 4 percentage points in Spain. The standard deviation for inflation in France was even higher than in the United Kingdom, at 3.5 percentage points. Overall, however, inflation rates in Europe have converged to a large extent since the 1990s, due to European integration and common monetary policy. This means that options for lending at fixed interest rates have also increased, even if this potential is evidently not being exploited in some countries.

4.2.2 Bonds

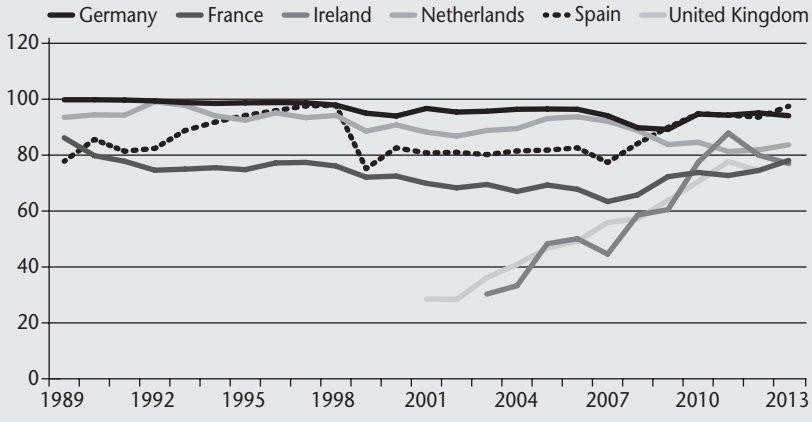
Bonds and bank bonds are a very common funding instrument for banks in many countries. However, ECB statistics do not distinguish between bank bonds and covered bonds, even though there are considerable differences. Bank bonds ultimately constitute loans, i.e. the bank borrows capital on the financial market so that it can grant loans or finance other activities. In exchange, investors receive interest on the capital they have provided, depending on the bank's credit standing and the maturity of the bond. Bonds generally allow lending to be funded at matching maturities and are therefore a natural choice for funding long-term loans. However, this requires the bonds to have corresponding maturities.

Nonetheless, statistics from the ECB show that some bonds have a maturity of less than one year, which means that their suitability as funding for long-term loans is limited. In the United Kingdom and Ireland there has been a trend towards longer maturities for only a few years. In Germany, on the other hand, an average of well over 90 per cent of bonds have a maturity of more than one year (Figure 13).

Unfortunately, the ECB statistics do not offer a more detailed breakdown of maturities. Nonetheless, in Europe as a whole (EU 27), the proportion of bonds with a maturity of more than ten years is 47 per cent.

Bank bonds Figure 13

with a maturity of more than one year, as a percentage of all bonds



Source: ECB, 2014

Bank bonds generally constitute a highly flexible form of funding. They can be issued easily and used to fund a wide variety of activities. They can also be used for long-term funding of corporate loans or student loans, for example. However, the importance of bank bonds is likely to decline significantly under the planned financial market regulations (cf. Section 5).

4.2.3 Covered bonds

One major reason for the higher proportion of longer-term bonds in continental Europe compared with the Anglo-Saxon countries may be the prevalence of covered bonds. Covered bonds are different from unsecured bonds or bank bonds in that the creditor has recourse not only against the bank, but also against the underlying cover assets in protecting his claims. These are the underlying repayments by borrowers in the case of mortgage loans and recourse against repayments by the government in the case of public sector loans. This double recourse provides additional security for investors, as their claims are protected even in the event of insolvency, and makes it easier for investors to make longer-term investments. Covered bonds also have the following features (Martín et al., 2014):

- The underlying collateral remains on the bank's balance sheet. It therefore remains in the bank's interests to prevent defaults, so the bank monitors and fosters its credit relationships accordingly. Unlike with securitisations, the interests of the bank and the investor are therefore harmonised (Bernanke, 2009).
- The value of the collateral exceeds that of the covered bond (over-collateralised), which means that it should be possible to service interest payments and repayments promptly at any time, even if the issuer becomes insolvent.
- The composition of the cover pool is dynamic, i.e. loans that are repaid early and defaulted loans are replaced by others.

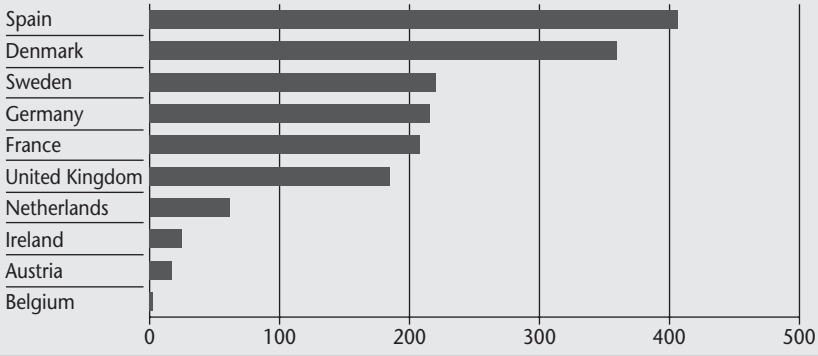
Covered bonds are widespread in Europe. As well as in France, Germany and Sweden, this form of funding is particularly important in Denmark and Spain (Figure 14).

If we take into account not only covered bonds based on mortgage loans but also those for public sector lending, the share of covered bonds as a proportion of all covered and unsecured bonds issued by banks is 42 per cent in Germany and 28 per cent in France. The percentage in Spain is higher still.

Although "covered bonds" is a collective term for bank bonds with double collateral, these bonds differ significantly between individual markets. A distinction can be made between countries that have legal regulations for the

Outstanding covered bonds (mortgage loans) Figure 14

in 2012, in € billion



Source: ECBC, 2014

issuing of covered bonds and those in which covered bonds are based on private law. The first category includes Germany and France, for example, where the legal foundations date back to the 19th century (Stöcker, 1998). The second category includes countries such as the United Kingdom and the Netherlands, where covered bonds are issued on the basis of private law. This form of funding only became available in the United Kingdom in 2008. There are also very significant differences between standards. The maximum share of borrowed capital for mortgage loans eligible for cover is 60 per cent of the mortgage lending value in Germany, compared with 80 per cent in France and Spain. Even higher lending amounts are eligible as cover funds in the United Kingdom. These different standards also impact yields, which are much lower in Germany than in France, Spain and the United Kingdom. Even taking into account country-specific risk premiums, the costs of funding via covered bonds are much lower in Germany than in other countries (Packer et al., 2007). There are also considerable differences in yield between German and Spanish covered bonds, particularly in difficult market situations (Prokopcuk/Vonhoff, 2012).

However, different standards do not affect the maturities of covered bonds. A survey based on the Bloomberg database shows that residual maturities are largely comparable. Average residual maturities are around four years in Germany and Spain and about seven years in France and the United Kingdom, although relatively few covered bonds are traded in the United Kingdom. However, if we take into account the fact that the market for covered bonds

is growing very dynamically, this form of funding offers banks in all the countries we have looked at the option to finance long-term loans at largely matching maturities. Although covered bonds can only be used to finance some durable economic goods such as real estate and ships, this already covers a large proportion of long-term financing. In addition, structured covered bonds allow covered bonds to be issued for other forms of financing such as companies or infrastructure. These structured covered bonds are based on private law structures rather than legislation. This form of covered bonds is gaining importance on the market in the United Kingdom in particular.

4.2.4 Securitisations

As we have seen, the securitisation market plays only a subordinate role in the current funding mix of banks. However, we must not let this obscure the fact that securitisations can be highly relevant to funding. Many loans in Ireland, Spain and the United Kingdom were funded through securitisations prior to the financial crisis.

The value of outstanding RMBS (residential mortgage-backed securities) reached its highest level to date of €505 billion in 2009. The market for this form of securitisation thus had a larger volume than the market for covered bonds in Germany or France. Volumes fell significantly as a result of the financial crisis, however, and issuing volumes are still relatively low even now.

Asset-backed securities (ABS) generally offer a lower level of security than covered bonds. This is firstly due to the fact that the bank sells receivables on the capital market and that recourse against the bank is not possible in the event of a default on payment. Investors must therefore service their claims from the cover pool, which is generally static. The market is not very transparent or standardised, which means that there is always a risk that contractual arrangements may be inadequate. Moreover, it is no longer in the selling bank's interests to monitor the loan default risk. This means that the risk of default is higher for securitised loans than for loans funded through deposits or bonds. The bank can ultimately solve the resulting trust problems only by keeping some of the tranches itself, something it will be obliged to do under future regulations.

As a result, yields on ABS are generally higher than those on covered bonds. Securitisations could nevertheless represent a major source of funding for long-term loans, particularly if it is possible to revive the market by improving transparency. Although maturities are typically shorter than for covered bonds, the area of application is less restrictive (Voigtländer et al., 2013). In particular, ABS can also be used for long-term funding of car loans

or financing education. The European Central Bank (ECB) and Bank of England (BoE) also argue in a discussion paper in connection with this that the market for the securitisation of loans should be revived with a more robust and transparent structure (BoE/ECB, 2014). As well as transparency, however, a revival of the ABS market would also require an appropriate regulatory framework (cf. Section 5).

4.2.5 Advantages of the mix of funding

As we have seen above, banks have a wide range of tools at their disposal for financing long-term loans. Although this mix of funding is not used by all banks due to their different business models, it is in principle open to all banks. In Germany, for example, savings banks and cooperative banks specialise in funding through deposits, while mortgage banks obtain funding primarily by issuing covered and unsecured bonds. However, other forms of funding could be opened up if the market situation requires it. This is an advantage in itself, as access to different forms of funding makes a significant contribution to the stability of long-term financing. Just as it is beneficial for investors to spread their capital across various investments, it is better for providers of financing to be able to access several types of funding. This makes it possible to diversify the risks associated with funding. If there is a short-term bottleneck in funding, banks can also fall back on funds from the central bank, the money market or the interbank market, making lending possible even in more difficult times. Funding through capital is, of course, also an option that is open to all banks.

Although the funding mix alone will not prevent crises like the 2008 financial crisis, it nevertheless represents one piece of the puzzle that can increase financial stability and the continuity of long-term lending. Accordingly, funding in all countries is becoming increasingly diverse. Examples of this include the establishment of the covered bond market in the United Kingdom and the rise in applications for Pfandbrief licences from universal banks in Germany. Efforts to revitalise the securitisation market must also be looked at from the point of view of diversification. Furthermore, it should be emphasised that options for funding long-term loans are available to banks in all countries. Owing to the general cultural and institutional conditions outlined above, demand for long-term loans is low in some cases. However, such loans could still be offered on the supply side. A deliberate shift in lending towards other financial intermediaries does not therefore seem particularly promising from this point of view.

4.3 Alternative providers of long-term financing

Banks have to date been the most important providers of long-term financing and have the biggest potential for this, as they have the widest range of funding options – even in countries where the proportion of long-term loans has so far been relatively low. The European Commission recognises this in principle in a current publication (EU-Kommission, 2014). Nonetheless, it is keen to attract other groups of providers for long-term financing. The aim is both to increase potential for long-term financing and strengthen financial stability. The European Commission proposes that insurance companies, pension funds, credit funds and crowdfunding could help to achieve this. The role of these other financial intermediaries in long-term financing will be discussed below. As with banks, we will take the status quo as our starting point, which means that the consequences of the new financial regulations will not be taken into account at this stage. Our initial objective is to discuss general potential and the ability to provide long-term financing.

4.3.1 Crowdfunding

Banks act as intermediaries on the financial market, bringing investors and borrowers together. Theoretically, however, no intermediary is required, as investors and borrowers can also interact directly. "Crowdfunding" is one attempt to achieve this. Potential borrowers and lenders find each other on internet platforms and try to borrow and lend money without the use of banks. This appears to offer an advantage in terms of costs, as the bank's costs for acting as an intermediary do not apply. In actual fact, however, the cost of borrowing is generally higher than with banks, due to the fact that a private lender faces greater uncertainty than a bank. A private lender cannot assess the borrower's credit standing. He cannot obtain information from a central loan default file and he does not generally have an overview of the borrower's financial background. Even if this information is available, it is doubtful whether a private lender would be able to interpret and evaluate it correctly, as he has no experience or opportunities for comparison. He must also bear in mind that the borrower is probably only using a crowdfunding platform because his request for a loan has been rejected by a normal bank. The private lender must therefore charge a high risk premium before he is willing to lend money, which then makes the market less attractive to borrowers.

In addition, any potential losses will hit private lenders harder than banks in relative terms. Banks can diversify risk across a large number of loans. In contrast, private lenders will find diversification virtually impossible or will

manage it only to a much lesser extent, which means that individual losses will cause much more severe damage. The amount of profit is also fixed via the interest rate. The lender must therefore bear any risks but is not able to benefit from the opportunities. This also reduces the willingness of private lenders to participate, or leads to high risk premiums. The higher the risk premium, however, the greater the risk that only those seeking investors for very high-risk projects will use the private financing market. A private investor also faces structural disadvantages compared with a bank during the loan phase. Continuous monitoring of credit risk is virtually impossible, as a private investor does not generally receive any information. Furthermore, private investors in turn lack the necessary experience and comparative data to be able to assess how the probability of default would be affected by changes in the overall economy, for example.

All this ultimately means that a private loan financing market will at most only ever be a niche market, despite the variety of criticism levelled at banks in the wake of the financial crisis, and that platforms like "smava" in Germany will actually also offer traditional bank loans. Only the market for start-up financing, in which companies are looking for capital providers rather than providers of external funding, is slightly larger. Even here, however, the market share is lower than 1 per cent, including in established markets like the USA (Best et al., 2013).

The discussion of crowdfunding thus highlights first and foremost the strength of banks, which ultimately specialise in assessing and monitoring risks. The discussion also makes it clear that a minimum size is required for efficient lending, to ensure risk diversification. These aspects must also be taken into account with other non-banks like insurance companies and credit funds, albeit to a lesser extent.

4.3.2 Insurance companies and company pension scheme providers

Insurance companies and providers of company pension schemes, such as pension funds, receive capital from their customers on an ongoing basis, which they can then invest in the capital market to obtain the highest possible yield for their customers while maintaining a reasonable level of risk. When benefits become payable, which is generally upon retirement, the investments must then be liquidated again. Life insurers and company pension scheme providers in particular have a correspondingly long investment horizon, which makes these financial intermediaries fundamentally suited to long-term financing.

Insurance companies and similar institutional investors are actually already important lenders to the public sector and the real estate sector. The total volume of outstanding long-term loans from insurers and company pension scheme providers in the Eurozone came to €372 billion as at the end of 2013, making this the second-biggest group of lenders after banks. Despite this, their share of total lending in the Eurozone remains low. The value of outstanding loans from banks at the end of 2013 was around €5.25 trillion. Even taking into account short-term loans from insurance companies and company pension scheme providers, their share is only around 8.4 per cent.

The position of long-term financing in insurance companies' portfolios is also revealing. Total assets of insurance companies and company pension scheme providers amounted to €8 trillion in 2013. Only about 4.5 per cent of available funds were therefore used for long-term financing. This percentage has remained constant for several years according to the ECB, while the proportion of government bonds has increased even further from a much higher initial level, despite the sovereign debt crisis (ECB, 2014).

The total share of all bonds in the portfolios of the institutional investors we have looked at is between 35 and 39 per cent. We could therefore ostensibly argue that it would be possible for insurance companies and company pension scheme providers to increase the proportion of long-term financing by altering the make-up of their portfolios. Both loans and bonds provide continuous cash flows and a fixed interest rate on capital. However, there are various key differences that lead pension scheme providers to prefer bonds over lending:

- An important investment criterion for pension scheme providers is the fungibility of investments. Bonds can be sold again at any time on the capital market, which provides the flexibility to adapt portfolios to changes in the market. With long-term financing, however, capital is tied up.
- Loans typically involve default risks and it is difficult to obtain cover against this on the capital market. Limiting default risk firstly requires lending to be broadly diversified across different countries and economic sectors, and secondly requires precise classification and observation of the credit risk associated with borrowers. However, both of these will be worthwhile only if lending is significantly expanded, and pension scheme providers typically have no expertise in evaluating creditworthiness.
- Lending requires a sales department to be set up if this does not already exist. This can entail additional costs, which will be worthwhile only if this area of business expands accordingly.

• The objective of pension scheme providers is not to provide loans, but to achieve an adequate risk-adjusted yield. Their primary aim is thus to diversify their portfolios. In view of the difficulties involved in diversifying loan default risks when volumes are limited, and the insufficient fungibility of loan receivables, these providers will only ever regard lending as a niche investment.

These points show that under normal conditions, i.e. when insurance companies and banks are essentially treated equally in lending, direct financing is merely a niche for insurers. The current market environment actually confirms that pension scheme providers very rarely operate as independent lenders. Large insurance companies participate in major commercial property financing deals at irregular intervals, but usually try to cooperate with banks that are established on the market. Insurers also tend to cooperate with banks in private real estate financing, to save on processing costs.

The role that insurance companies play in funding banks is therefore more important than their part in direct financing business. Insurers are among the biggest buyers of covered bonds and bank bonds. In fulfilling this function, insurance companies and other pension scheme providers support banks in the provision of long-term financing. Although insurance companies could conceivably increase the proportion of loan financing they provide, this could only take place at the expense of long-term financing by banks, which would not increase the overall volume of long-term financing. On the whole, however, pension scheme providers' business objectives mean that they will be able to play only a supplementary rather than a leading role in long-term financing, even if they expand their loan business further.

4.3.3 Credit funds

The European Commission believes that funds could provide another alternative to long-term financing by banks. Credit funds have a similar structure to traditional closed-end funds, but act as providers of external funding rather than investing in companies or real estate as capital providers. In this capacity, they finance companies, real estate or infrastructure projects.

Very few data are available regarding credit funds. According to data from Inrev (European Association for Investors in Non-Listed Real Estate Vehicles), there are currently around 37 such funds in Europe with total capital of about €28 billion. If we assume a debt ratio of 50 per cent, loans worth €56 billion could thus be issued. Even if the number of credit funds is actually higher, their overall importance on the market is fairly low. Although the world of finance has been discussing the possibilities of credit funds for some

time, there is no evidence as yet that these have achieved any major significance. However, this could change in future due to regulatory adjustments, as shown in Section 5.

A basic distinction can be made between credit funds set up by banks and those set up by other financial intermediaries. Credit funds can perform a complementary role in funding for banks. For instance, banks can sell claims arising from loans to a fund. The fund in turn can then attract investors for this, i.e. from the insurance sector. The advantage of this is that individual opportunity/risk profiles emerge which may be of interest to investors. This makes it possible, for example, for insurance companies or other investors to participate in the opportunities and risks associated with infrastructure financing or corporate financing. This is not possible with bank bonds or classic covered bonds.

However, credit funds set up outside the banking sector that wish to issue their own loans face similar problems to those associated with crowdfunding. Although funds can issue more loans than an individual person, the volume is not usually adequate to allow for broad diversification of credit risks. The risks for capital providers are therefore high, which pushes up the risk premiums required. This means that the fund has to charge higher interest on loans than banks would, which increases the risk that only borrowers with a particularly high probability of default will apply for loans, as "good risks" will still be able to get a bank loan. This gives rise to the typical market for lemons problem (Akerlof, 1970). Broad diversification would also increase lending costs, as appropriate structures and sales teams would need to be set up. This would not appear particularly attractive to a fund that will generally be on the market for only a limited time. This only leaves one market niche that credit funds outside the banking sector could even potentially consider: large-scale projects that banks, for one reason or another, do not want to or are unable to finance. One requirement for this to be successful is that the fund managers must be in a better position than banks to assess the projects that are to be financed. If this is the case, however, financing by investing capital would actually be more attractive, as it would also allow participation in the profits. As an alternative or in addition to this, credit funds can make use of subordinate financing. However, this means that volumes are limited and similar problems arise to those described above.

It is still a possibility that credit funds could become established despite these objections and could gain a share in the market for some types of financing, such as infrastructure financing. This will apply in particular if

they receive preferential treatment under the regulations. However, it seems rather unlikely, under the current conditions, that credit funds could play a major role in long-term financing.

In view of this, it is questionable whether credit funds can even offer long-term loans at all. This would also require a long-term commitment from capital providers. However, the average investment horizon for investors in funds typically ranges from five to a maximum of ten years. Credit funds could therefore provide only some of the financing as a rule, which means that at most they could act as complementary classic financing providers.

Experience in the USA shows that investors are particularly attracted to those vehicles that invest in funding for banks, i.e. which have a similar structure to credit funds set up by banks. Mortgage REITs (Real Estate Investment Trusts), for example, have become established in the USA. These are public limited real estate companies that do not invest directly in real estate, but instead in real estate financing. As public limited companies operate on the market on an ongoing basis, these companies can provide long-term financing. At the end of 2013 there were a total of 41 mortgage REITs in the USA with a market capitalisation of USD 62 billion. Mortgage REITs do not usually grant loans themselves, however, but invest in mortgage-backed securities, i.e. they buy loan receivables from banks (Pellerin et al., 2013). Like insurance companies, mortgage REITs thus support banks in funding loans. On the whole, this appears to be the most suitable and efficient way for all investment vehicles to get involved in financing. Participation in funding for banks offers investors an opportunity/risk profile that is similar to or even better than direct loan financing, as well as giving them the flexibility of exchange-traded securities. Moreover, costs for sales and loan processing, which can considerably reduce margins with small-scale lending in particular, do not apply.

Finally, it should be noted that long-term financing is not simply a product, but needs to be learned and accepted by providers and those seeking it. All historical experience shows that providers of long-term financing and their products had to become established on the market first. Taking into account historical experience, it would take some time to push through long-term financing by financial intermediaries outside the banking sector, as the following discussion illustrates.

4.4 A detailed look at the history of long-term financing by banks

Economic activities never take place in a vacuum, but always within social and political structures that have developed over a long period. To analyse

economic conditions and compare them at international level, we must therefore look at central social developments and political events (Burhop, 2011, 14). History shows that today's differences between financing systems evolved towards the end of the 19th century and that the Anglo-Saxon system has always contrasted most sharply with the German system. These differences have been reflected throughout history in respective financing cultures on the demand side (cf. Section 3.5), while specific funding methods have become established on the providers' side.

The roots of the current financing conditions can be traced back to the time of industrialisation. The capital intensity of production increased continuously during this phase of economic development, which meant that new forms of financing were required (Pierenkemper, 2005, 97). Demand for financing for residential construction also rose, due to population growth and increasing urbanisation. This phase, which resulted in crucial political, social and economic changes, paved the way to a large extent for the development of the current financial system in Germany. The key innovation in terms of banking was the creation of joint stock banks at the beginning of the German Empire (North, 2009, 165). Banks operated not only as deposit banks, but also as investment banks. This meant that as universal banks they were able to offer customers not merely a partial service that was limited to specific loan transactions, but could provide a comprehensive service as a main bank. The bulk of deposit business (almost 75 per cent) was with savings banks, mortgage banks, cooperative banks and other specialist banks (Pierenkemper, 2009, 166). The entire universal banking system was of crucial importance in allowing long-term financing for industry and private individuals. A long-term partnership with a main bank gave companies and private individuals alike the major advantage that they had a single contact for all questions regarding financing. The advantage for banks was that they had a precise knowledge of their business partners and their credit standing, which made checks for long-term loans much easier.

Key framework conditions were established not only for companies, but also for long-term private investment in the second half of the 19th century. The first purely private mortgage banks in Germany were founded in 1862 in the form of Frankfurter Hypothekenbank and Deutsche Hypothekenbank (Meiningen), and created acquisitive instruments from mortgages and Pfandbriefe, which until then had been used in a cooperative system (Redenius, 2009). The establishment of normative regulations in Prussia in 1863 laid the foundations for standardised regulations on the licensing of a mortgage bank.

The newly established and reformed private mortgage banks played a central role even during the days of the German Empire in financing the expansion of cities and the associated increase in demand for external funding to construct new homes. At the turn of the last century, mortgage banks were by far the largest institutional lenders on the mortgage market (vdp, 2013).

The first legally standardised ordinance in the banking industry came into effect in 1900 with the Mortgage Bank Act (HBG), which would heavily influence subsequent banking legislation (Schulte, 2008). The aim of the HBG was to create a legal framework for a functioning capital market and to ensure a supply of long-term funds at sufficiently low interest rates to finance the construction of homes and cities (Koppmann, 2009, 97). Above all, it was hoped that this increased legal security would help protect Pfandbrief savers on one the hand and borrowers on the other. The new legal framework made mortgage banks an indispensable instrument of modernisation (Redenius, 2009).

An alternative to the German banking model can be seen in the British banking industry. In contrast to the German banking industry, the banking system in the United Kingdom focused on short-term transactions in both private and corporate financing (Baker/Collins, 1999). In the initial phase of industrialisation, a large number of regional private banking houses known as "country banks" took over the majority of lending to industrial and trading companies in the United Kingdom. Most of these loans had a short-term or revolving structure (Tilly, 2006, 284 et seq.). Banks in the United Kingdom were organised in strict accordance with the principle of a structural separation of the banking system and were suitable partners only for certain transactions, based on their respective specialisations. This differentiated the Anglo-Saxon market from the continental European system at an early stage (Pfundt, 2008). Other financial intermediaries also operated on the Anglo-Saxon capital markets alongside banks. Insurance companies and finance companies, such as investment trusts and investment companies, were already gaining importance as financial intermediaries in the City of London towards the end of the 19th century (Cassis, 2007, 130). The complex financial system, the main features of which have survived to the present day, was not on the whole designed to fund long-term investment in domestic industry (Frey, 1938). Demand for long-term financing for house building was generally met by insurance companies and building societies, which acted as brokers (Ashworth, 1980).

The unstable political and economic environment during the period between the world wars had a negative impact on long-term financing projects

in particular. The switch between a wartime economy, a peacetime economy, a defence economy and back to a wartime economy involved constant changes in the legal and administrative framework and called for considerable flexibility and adaptability from all market participants (North/Ambrosius, 2005, 289).

Many banks were weakened by losses from financing the wars and also had to absorb the cost of new investments that failed to go ahead (Cassis, 2007). Mortgage banks' business activities and the Pfandbrief system stagnated during wartime (Redenius, 2009). Many borrowers initially benefited from currency depreciation, which led to hyperinflation in Germany in 1923. As inflation continued, however, banks imposed increasingly tight restrictions on lending and focused more on short-term business, due to uncertainty about how monetary value would develop. The Reichsbank also pursued an increasingly restrictive financing policy, which led to massive difficulties in the provision of financing (Hertz-Eichenrode, 2004). For ten years, the German banking system was weakened by hyperinflation (Hertz-Eichenrode, 2004). Even after the currency was stabilised again through the introduction of the Rentenmark in 1923, a shortage of liquidity persisted, as banks were short of capital themselves and thus were not in a position to act as lenders. Capital formation in Germany therefore remained inadequate (Pierenkemper, 2009, 78).

The global economic crisis in the late 1920s resulted in tighter regulation of the financial sector in many countries and in state intervention in banking operations. US President Roosevelt's New Deal, in particular, helped to popularise regulation. This included the Securities Act on the regulation of the capital market and the Banking Act (Cassis, 2007, 275). A key part of the Banking Act (better known as the Glass-Steagall Act) involved the state-imposed separation of commercial banking activities from investment banking. The Act also stipulated maximum limits on interest rates for longer-term savings deposits (Lütz, 2002, 104). As a result, commercial banks in the USA ran private and corporate customer business, which usually involved short-term loans and bank deposits, while investment banks or brokerage firms offered securities trading. Savings and loans associations continued to issue mortgage loans. However, the crisis also led to the reorganisation of the financial system in other countries.

In Germany as well the state intervened more in the regulation of the financial markets. Many major banks were effectively nationalised as part of a comprehensive restructuring programme due to the prevailing banking

crisis in Germany and a bank run (Cassis, 2007, 267). Subsequent regulation on the German capital market during the Nazi era followed a doctrine that financing capacity must be used to serve the aims of the National Socialists. In 1933, bans were introduced on the issuing of shares, bonds and Pfandbriefe by German companies (Hertz-Eichenrode, 2004). More restrictive conditions were also applied to mortgages. In accordance with a 1938 decree clamping down on mortgages, for example, proof had to be provided that mortgages were to be used for "purposes important to the state", which increasingly restricted business opportunities for mortgage banks (Redenius, 2009).

Even if the structural separation of the banking system in Germany was also under debate, the universal banking system survived there, unlike in other European countries (Cassis, 2007, 267). Following numerous emergency decrees intended to mitigate the effects of the crisis in the short term, the plan was to create a standardised legal framework for the entire German banking industry, to counteract any future crises. The structure of the 1934 German Banking Act (KWG), which was regarded as system-neutral, makes it clear that individual mistakes by bankers tended to be seen as the cause of the crisis in Germany, rather than systemic mistakes (Cassis, 2007, 277).

On the whole, the crisis-prone years between and during the wars did not provide a favourable environment for long-term financing. Both the supply of and demand for long-term financing were obstructed by crises and extensive socio-political upheaval. The post-war era in Germany was marked not only by an economic upturn, but also by a major change in financing. Nevertheless, the central features of the historic financing system remained: the universal banking system and the relatively low importance of the capital markets (Hertz-Eichenrode, 2004).

The market in the Federal Republic of Germany represented a challenge for residential construction in particular. Due to the widespread destruction of buildings in German cities during the Second World War and an influx of refugees, there was huge demand for new housing. At the same time, there was a significant shortage of available capital to finance the necessary buildings. This resulted in a multitude of laws to promote residential construction, such as the First Residential Construction Law of 1950, the 1951 Law on Funding for the Construction of Homes for Coal Miners, the 1952 Residential Construction Subsidy Law and the First Law on Funding for the Capital Market of 1952 (Kohlhase, 2011, 91). The last law in particular led to an upturn in private residential construction financing by mortgage banks, which were to prove essential to reconstruction (Redenius, 2009).

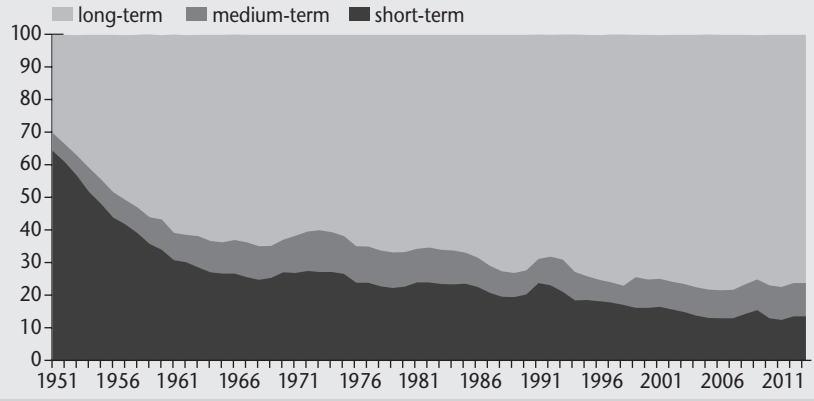
The Law on Funding for the Capital Market expired in 1955, leaving mortgage banks once again free to develop as they wished, as the state no longer had any influence on the structuring of Pfandbriefe used for funding (Redenius, 2009). Total sales of Pfandbriefe and municipal bonds had risen to DM 23 billion by 1961 (VDH, 1978). A look at the maturities of residential construction loans granted by banks shows a growing trend towards long-term financing (Figure 15). While almost 70 per cent of loans granted for residential construction in 1950 were short-term loans, this had fallen to just under 34 per cent by 1960. The proportion of long-term loans for residential construction rose from just under 23 per cent to 57 per cent in the same period. The volume of lending also grew steadily from DM 15.2 billion to DM 108 billion. Growing economic prosperity increased stability and thus confidence in the security of long-term investments, which was also boosted by the creation of a legal framework. An example of this is the Fifth Law Amending and Supplementing the Mortgage Bank Act of 1963, which aimed to preserve mortgage banks as institutions for long-term mortgage and public-sector lending business (Redenius, 2009).

After the Federal Republic was founded, banks also became more involved in corporate financing again. During the 1950s German companies began to obtain more long-term external financing, in line with developments in residential construction financing, and banks regained their close ties with

Maturities of loans granted for residential construction

Figure 15

Loans from German credit institutions, in per cent

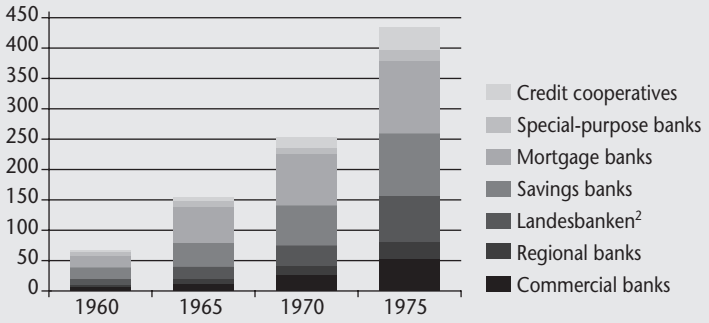


Sources: Deutsche Bundesbank, 2014; own calculations

Long-term loans granted

Figure 16

by banking sub-sector[1], in € billion



[1] Excluding German branches of non-German banks and the central banks of German credit cooperatives, as their loan volumes are comparatively negligible. [2] German regional state banks.
Sources: Deutsche Bundesbank, 2014; own calculations

companies. The breaking up of large banks was also reversed. This development was due partly to the fact that banks' deposits were more long-term and partly to an increase in their willingness to assume transformation risk (Hertz-Eichenrode, 2004). For both private individuals and corporate financing, a clear trend emerged in the second half of the 20th century towards longer-term financing across all banking sub-sectors (Figure 16).

Historians usually attribute the increase in long-term financing to corresponding demand from companies (Hertz-Eichenrode, 2004). Given their low levels of capital, the lack of opportunities to access the capital market directly and the high risk they associated with short-term loans, long-term external financing through banks was their first choice. Once again, this is a crucial difference compared with the Anglo-Saxon system. In contrast to the Federal Republic, the Anglo-Saxon systems continued to provide short-term financing after the Second World War. This was motivated by stronger state regulation in a move towards a structural separation of the banking system. However, companies had also adapted to short-term financing in view of financing history in the Anglo-Saxon countries. Overall, the history of financing conditions for companies indicates that both the structure of the banking industry and the state regulatory framework for the supply of long-term financing in Germany have offered more favourable conditions since the time of the German Empire than the conditions available in the United Kingdom or the USA.

4.5 Interim conclusion

Banks dominate long-term financing, and for good reason. This is firstly because they have the best funding options at their disposal and are therefore able to provide long-term loans in a wide variety of different market situations. Secondly, they also have the infrastructure to offer small loans and achieve broad market coverage, an important requirement for efficient maturity transformation. Finally, they have the necessary experience in evaluating creditworthiness, credit monitoring and maturity transformation to be able to issue long-term loans. Compared with other financial intermediaries, banks are thus the only providers to have mastered the mix of a broad range of funding, risk control and maturity transformation and therefore offer the best conditions for long-term financing. Moreover, alternative systems for long-term financing still need to evolve. We must also take into account the fact that we can use the lessons learned from the financial crisis to make banks more stable. The political will to bring about a shift in lending, for example through advantages in regulation, may therefore actually contribute to an increase in the risk of another financial crisis, as lending has so far been new territory or merely an addition to existing business for financial intermediaries outside the banking sector.

Our analysis below of the extent to which the new financial market regulations will restrict long-term lending, and of whether the rules are actually necessary and useful for increasing the stability of the financial market, must therefore be particularly rigorous.

5 Long-term financing under new rules

As we have already seen in Section 4, funding options play a crucial role in determining opportunities for, and the structuring of, long-term financing. Financial market regulation is an essential element in the general framework governing funding business. A recent example from Spain highlights the impact that adjustments to regulations can have on the structuring of financing.

In the 1990s, Spanish legislators sought to simplify the market for mortgage loans and make it more transparent. They therefore decided firstly that variable interest rates would have to be linked to a reference rate, and secondly that prepayment compensation for all loans would be limited to 1 per cent

of the residual debt. Lenders consequently had to tighten conditions for fixed-rate loans, as they would now have to bear the bulk of the resulting losses themselves in the event of early termination. To take account of these potential costs, interest rates had to be raised for all customers. This significantly widened the spread between variable and fixed interest rates, causing fixed-rate loans to virtually disappear from the market. While fixed-rate loans predominated in Spain in the 1980s, most loans issued there today are variable-rate loans (Charles River Associates, 2004).

This regulation related to only one aspect of loan structuring in Spain, i.e. the possibility of refinancing, but nevertheless resulted in drastic changes. This makes it all the more important to examine the consequences of the current regulations and any amendments to them, as banking activities will be much more comprehensively regulated under the new Basel III regulations, for example, than was the case in Spain at that time. However, it is not only regulations in the banking sector that will be relevant to future options for the structuring of long-term financing, but also rules affecting alternative providers of long-term financing. This becomes particularly clear in the light of competitive conditions and efforts to create a level playing field. Only regulations that have no effect on competition between different potential providers of long-term financing will allow us to maintain a stable system for long-term financing in future.

In the following section we will firstly present the new financial market regulations for long-term lending by banks, insurance companies and credit market funds, and will analyse their possible effects. The focus in the banking sector is mainly on specialist lenders such as mortgage banks, which have specialised in providing long-term loans and thus play a key role in stabilising the overall financial system. For many aspects of regulation, it is clear that a large number of regulatory changes are currently still undecided; regulatory uncertainty thus prevails, and providers of long-term financing lack security in planning. As financial market operators are closely interconnected, the cumulative effects of planned regulations on the provision of long-term financing will be discussed in a final section.

5.1 Long-term financing and Basel III

The debate about banking regulation under Basel III focuses on the new quantitative and qualitative capital requirements. To make credit institutions' capital resources more secure based on experience of the economic and financial crisis, banks in the EU have been instructed to increase both the quantity

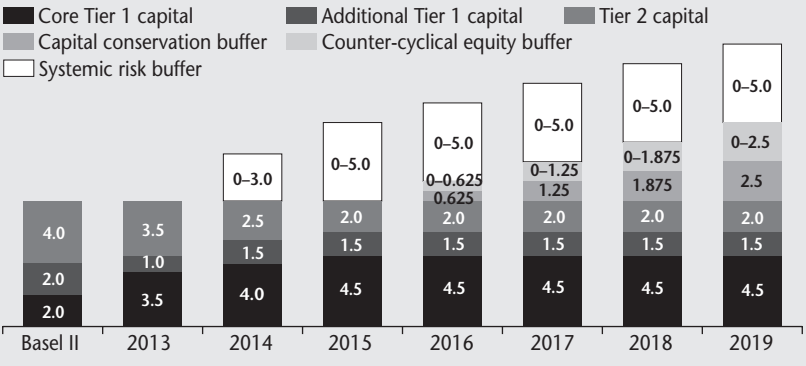
and the quality of their equity. The quantitative capital requirements stipulated in the Basel guidelines have been adopted in full in the implementation of the guidelines at EU level. To avoid compromising lending options by changing banks' capital requirements too quickly, the new capital regulations will not be brought in immediately, but will be introduced in gradual stages between now and 2019 (Deutsche Bundesbank, 2011, 18 et seqq.). Figure 17 shows the cumulative increase in the capital buffer during the transition period. The stricter qualitative capital requirements are reflected in an increase in Common Equity Tier 1 Capital from 2 per cent to at least 4.5 per cent. The guidelines of the Basel Committee on Banking Supervision include a 14-point list of criteria stipulating which capital components should be assigned to Common Equity Tier 1, Tier 2 and Additional Tier 1 capital (BCBS, 2011, 13 et seqq.).

An increase in capital leads to a rise in the cost of lending for banks if interest income from lending is lower than the expected return on capital (Demary/Schuster, 2013, 58). This can lead banks to demand more collateral and to turn down loan applications with higher default risks or to approve them only at much higher interest rates. Depending on the availability of capital and on competition, banks may also be inclined to raise interest on loans, so that they can pay shareholders a corresponding rate of interest. Härle et al. (2010), for example, assume that the cost of lending could rise by an average of 30 to 70 basis points, depending on the bank. However, there is no noticeable direct impact on the proportion of long-term financing.

EU own funds requirements for banks

Figure 17

according to the EU's implementation of Basel II and Basel III, in per cent of risk-weighted assets



Sources: Demary/Schuster, 2013, 54, based on BCBS, 2011; EU-Kommission, 2013a

As well as the regulations on a higher level of risk-weighted Common Equity Tier 1 Capital, the introduction of Basel III also includes specifications for a debt ratio that is independent of risk (leverage ratio). To determine this ratio, we must calculate the amount of Common Equity Tier 1 Capital in relation to total assets, without giving any specific weighting to individual items:

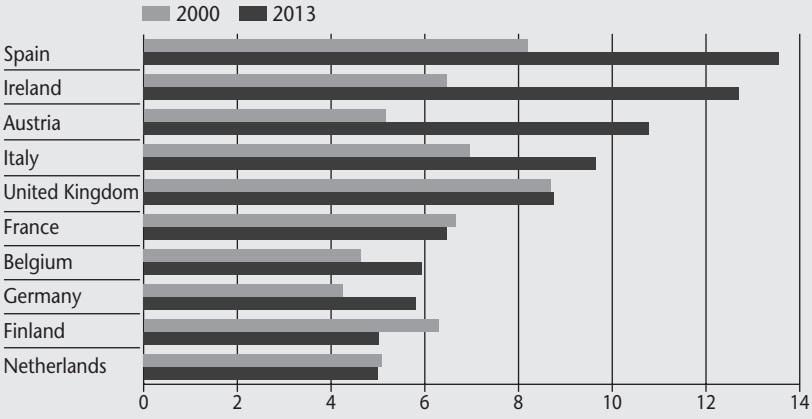
$$\text{Leverage ratio} = \frac{\text{Common Equity Tier 1 Capital}}{\text{Total assets}} > 3 \text{ per cent}$$

To achieve the current target of 3 per cent, banks have three options. They can increase their capital using new capital providers, retain profits or reduce their total assets, for example by not renewing loan contracts when they expire.

A look at unweighted capital ratios in Europe shows that different countries will be affected by this to very different degrees. It is noticeable that banks in Belgium and Germany – two countries where there is a distinct culture of long-term lending – have particularly low leverage ratios (Figure 18). However, countries that tend to have short-term financing models, such as Spain and the United Kingdom, generally have high ratios. This applies to the periods both before and after the financial crisis. No direct connection to long-term financing has been identified as yet. Even banks with particularly high capital ratios can provide long-term loans and can even finance them with their

Average leverage ratio of credit institutions Figure 18

Equity in relation to total assets, in per cent



Sources: ECB, 2014; own calculations

own funds – capital. There is an indirect effect, however, because the potential to fall short of the leverage ratio would affect those institutions that have specialised in long-term financing in particular. The German banking market is a particularly clear example of this.

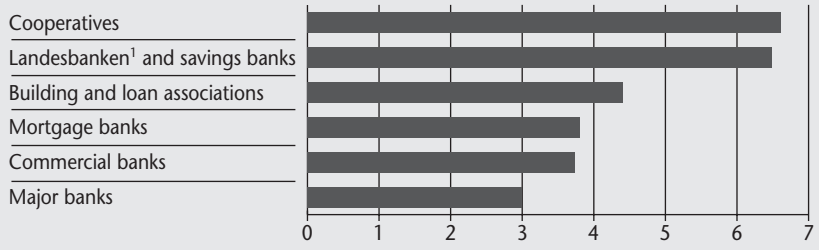
Mortgage banks in Germany have specialised in the long-term financing of real estate and regional authorities. Funding these loans almost exclusively through Pfandbriefe allows them to do so at matching maturities. Although the 2005 Pfandbrief Act means that all credit institutions can now apply for a licence to issue Pfandbriefe, most Pfandbriefe are still issued by specialist institutions. Long-term real estate financing and public sector lending is a safe business, but margins are low. Mortgage banks therefore typically have a low leverage ratio (Figure 19). Along with major banks, which are a subgroup within commercial banks, mortgage banks have the lowest leverage ratio of all banking sub-sectors, at 3.8 per cent. While the low figures for major banks can be interpreted as a consequence of the financial crisis, there are structural reasons for the low values at mortgage banks. The leverage ratio of mortgage banks was just 2 per cent in the early 2000s, and even in 2010 it was still only 2.6 per cent. Only since then has the ratio risen, largely due to reductions in total assets.

If the leverage ratio becomes binding, pressure on mortgage banks will increase further. The major structural problem is that mortgage banks are competing for capital, but are at a disadvantage in terms of yield because of their security-oriented business policy with a focus on long-term financing. Mortgage banks are unlikely to be able to expand their balance sheets to the

Average leverage ratio of German banking sub-sectors

Figure 19

Equity in relation to total assets in October 2013, in per cent



[1] German regional state banks.
Sources: Deutsche Bundesbank, 2014; own calculations

same extent as other banks. As a result, their market share can be expected to fall further. Although it is difficult to estimate what the consequences will be, we can assume that long-term financing will at any rate not be strengthened by the new regulations if institutions that can be regarded as setting the standards in this area decline in importance. A standardised capital ratio that is not linked to risk would therefore be in conflict with their core business, in which they fulfil an important function in the supply of long-term financing, including for private households. This applies all the more since the liquidity ratios already offer incentives for shorter maturities. Both governments and regulators have already recognised the problems associated with standardised ratios and have pointed out the possibility of differentiation according to business models (BCBS, 2014; Europäisches Parlament und Europäischer Rat, 2013).

The new liquidity standards that are to be introduced at European level through the Capital Requirements Regulation (CRR) will also be crucial to the future of long-term financing (Europäisches Parlament und Europäischer Rat, 2013). The aim in stipulating a minimum liquidity ratio that must be adhered to (liquidity coverage ratio – LCR) is to ensure that credit institutions remain solvent even in the event of an outflow of liquidity, for example in the form of savings deposits. According to the guidelines of the Basel Committee on Banking Supervision, banks must keep a minimum holding of highly liquid assets that they can use to fulfil their cumulative net payment obligations within a period of 30 days in accordance with various stress scenarios (BCBS, 2013, 4). This figure is calculated from the ratio of highly liquid assets to net cash outflows within 30 days:

$$\text{LCR} = \frac{\text{Holdings of highly liquid assets (liquidity buffer)}}{\text{Net outflows within the next 30 days}} > 100 \text{ per cent}$$

According to figures from Deutsche Bundesbank, the liquidity coverage ratio (LCR) as at 31 December 2012 was 99.3 per cent for German banks that operate internationally and was actually 114.9 per cent on average for other institutions, meaning that the latter were already well above the regulatory requirement of 100 per cent (Deutsche Bundesbank, 2013, 4). The LCR will have little impact on long-term financing overall, although the definition of highly liquid assets is likely to play a decisive role in determining demand from banks. As unsecured bank bonds are not regarded as highly liquid assets, it will become more difficult in future for banks to fund activities in this way. In addition to the liquidity coverage ratio (LCR), the possibility of using the

structural liquidity ratio (net stable funding ratio – NSFR) to assess an institution's liquidity is currently under consideration. This ratio is supposed to indicate whether financial institutions' medium-term and long-term financing will also comply with stability requirements. It is thus regarded as a potential approach to calculating the funding risk (BCBS, 2014, 3). According to the current plans, it will be calculated from the ratio of long-term, stable funding sources to potential liquidity requirements that could arise from funding (BCBS, 2014). As any funding requirements that arise in the short term are supposed to be covered by funding sources at all times, this ratio should always be greater than 100 per cent.

$$\text{NSFR} = \frac{\text{Available amount of stable funding}}{\text{Amount of stable funding required}} > 100 \text{ per cent}$$

The definitions of available stable funding and stable funding required are important aspects of the NSFR. The available stable funding is calculated from the total of all liabilities, weighted according to the ASF (available stable funding) factor. The more long-term a funding source is, the higher the ASF factor. Components in Common Equity Tier 1 capital and Tier 2 capital have an ASF factor of 100 per cent. Stable or less stable deposits from private customers, on the other hand, are weighted with a factor of 90 or 80 per cent respectively. Unsecured large customer business and deposits from non-financial companies are weighted at only 50 per cent. This means that short-term deposits from private customers and from small and medium-sized companies are regarded as more stable than securities from large customers with the same maturity (BCBS, 2014, 3).

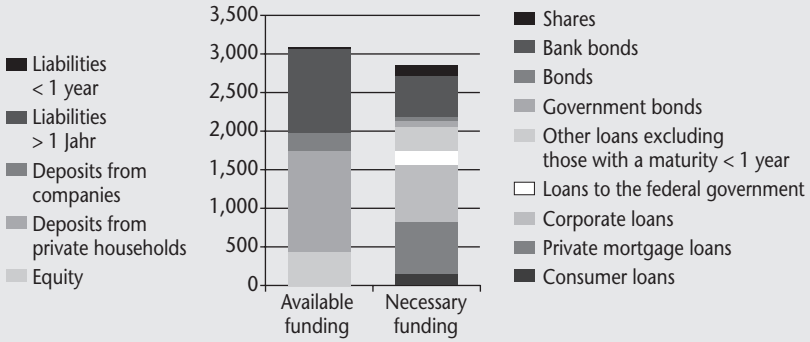
The amount of stable funding required is calculated from the total of all asset items, each of which is weighted according to the RSF (reliable stable funding) factor. Like the ASF factor, this factor ranges from 0 to 100 per cent and is intended to show the extent to which a specific asset item can be liquidated and refinanced with stable funds. The more liquid an asset category is, the lower the RSF factor. Securities with a maturity of less than one year and available cash are therefore given a weighting of 0 per cent and securities with a maturity of more than one year a weighting of 5 per cent.

The aim of the NSFR is to prevent banks from experiencing liquidity problems requiring state intervention as a result of non-risk-adjusted maturity transformation. However, it also offers incentives that act as a constraint on long-term financing. Figure 20 shows a rough calculation of this measurement of liquidity for all German banks. According to this, German banks

Funding activities of German credit institutions based on NSFR

Figure 20

in 2013, in € billion



NSFR: net stable funding ratio.
Sources: Deutsche Bundesbank, 2014; own calculations

already fulfil the criteria for the NSFR on average. However, it is likely that a significant number of institutions do not yet comply with this ratio, or only just comply with it. These institutions will have to alter both the assets and liabilities on their balance sheets so in order to comply with the specifications. On the liabilities side, two funding options in particular can improve the NSFR: capital and bonds with long maturities, as these forms of funding are included in the calculation of the NSFR without a discount.

This generally strengthens long-term financing, although we will see later that it will also become more difficult to place covered bonds with long maturities on the market in future. On the assets side, however, the NSFR provides incentives to shorten loan maturities, as it has been thought to date that funding is no longer necessary for short-term loans. If the average loan maturity is reduced, the proportion of loans for which proof of funding no longer needs to be provided will therefore increase automatically.

In general, compliance with this ratio mainly represents a problem for banks that have no private customer deposits and that, for example, fund themselves through bank bonds. As bonds with a short residual maturity of up to six months are not included in the calculations, these banks will find it extremely difficult to achieve the required 100 per cent. Covered bonds can often be used to fund only some loans, while substantial discounts are required for other forms of funding. However, the Basel Committee notes in a current

consultation paper that the planned structure for the NSFR is based largely on international definitions and calibrations and that national regulators should take into account country-specific differences in financing systems when dealing with this ratio.

In addition to the current regulatory uncertainty regarding the final structure for these ratios, it is unlikely that a solution will be found for the NSFR in the near future. Details of the future structure will not be presented until the end of 2016 as part of a legislative proposal for the EU (Europäisches Parlament und Europäischer Rat, 2013). Meanwhile, the Basel Committee still intends that "the NSFR, including any revisions, will become a minimum standard by 1 January 2018" (BCBS, 2014, 2). For all banks, this currently means that they cannot yet foresee what funding they will need to show when granting long-term loans. It will be crucial to the supply of long-term financing to ensure that options for long-term funding remain open to specialist lenders with the relevant expertise in future.

5.2 Lending by insurance companies in accordance with Solvency II

Along with banks, other financial intermediaries are increasingly also coming under the scrutiny of regulators. For European insurers, a revision of the regulations on insurance companies and pension funds under the name of Solvency II was initiated as early as 2002 with a study commissioned by the European Commission (KPMG, 2002). The Europe-wide preparation phase began on 1 January 2014, with the aim of complying with requirements from 2016. Insurance companies' capital requirements have to date been based on the premiums paid by policyholders, which means that only insurance risks and not the market risks associated with insurers' investments have been taken into account. Upper limits for individual asset classes are the only measure in place to ensure maximum diversification in the insurance portfolio. The investment strategy also excludes certain investment vehicles.

Under the new guidelines, insurers will have to deposit a proportionate amount of the respective sum invested for investment risks they enter into. The intention of this approach is supposedly that higher-risk investments will no longer be prohibited, but instead will be made more expensive by increasing the amount of capital required. As part of the lengthy process of introducing the regulations, a separate study, the Long-Term Guarantees Assessment (LTGA), assessed the impact of long-term guarantees after the introduction of Solvency II in 13 different scenarios. Long-term investments

are of particular interest to life insurers, which are the largest institutional investors within the insurance sector, as their long-term nature reflects life insurers' capital requirements (Haas et al., 2013).

The structure of the new guidelines is modelled on banking regulation and can be subdivided into three pillars. The first pillar determines insurers' financial resources and thus their quantitative capital requirements. The second pillar comprises qualitative governance regulations, while the third pillar regulates disclosure requirements for insurers. The discussion focuses on the new regulations on capital requirements in the first pillar. One of the risk measurement modules is the market risk module, which is divided into seven individual sub-modules (EIOPA, 2013). The aim of this breakdown is to allow volatility in market prices for different financial instruments to be shown and quantified in companies' cost calculations. For each risk assumed, an amount of capital to be calculated in proportion to the sum invested must be added to solvency capital. As well as risks that can affect all types of investments, such as interest rate changes, illiquidity, insufficient diversification in the portfolio or exchange rate volatility, Solvency II will also factor in risks associated with individual types of investments. These include equity risk, credit risk and real estate risk.

Lending by insurers will be subject to credit and spread risk under the new guidelines. This risk category is intended to take into account a change in risk premiums for fixed-income securities and credit derivatives. Capital requirements are calculated in accordance with credit standing and loan maturity. In terms of credit standing, products with a better rating require less capital to be deposited than those with a lower credit standing or no rating. What is crucial to ensuring long-term financing, however, is the additional criterion regarding maturity, which states that long-term investments must be backed with more capital than short-term investments with an identical rating (EIOPA, 2013, 148 et seq.). If we take into account the risk factors from the QIS5 impact study, securitised loans with a rating of "AAA" (factor 0.9 per cent) and a maturity of five years would require 4.5 per cent capital to be held, while loans with the same rating and a maturity of ten years would require solvency capital backing of 9 per cent. The treatment of loans is thus much more favourable for insurers in regulatory terms than direct investment in real estate, for example, which requires flat-rate capital backing of 25 per cent under Solvency II; however, it provides regulatory incentives to encourage short-term financing and discourage long-term financing. Another problem with using the spread risk for granting loans is

that the latter are not usually subject to a standardised rating process. Even the provision of mortgage loans would thus require higher capital ratios, irrespective of the actual risks and with differentiation only on the basis of their maturity: the longer the maturity, the higher the capital backing required.

As well as the objections to large-scale lending by insurers outlined in Section 4.3.2, such as the low overall volume of lending compared with banks and the need to establish and expand their own infrastructure with appropriate expertise, the management of lending under the new Solvency II regulations also constitutes an impediment to the expansion of long-term financing by insurers. Although lending will become more attractive to insurers overall, the preferential treatment for short-term lending as opposed to long-term lending represents a strong argument against insurers as potential providers of long-term financing and thus contradicts the ideas presented in the European Commission's green paper. It is nevertheless possible that insurers could increase their overall market share for loan financing, particularly for short-term and medium-term loans, as a result of more favourable regulations.

5.3 Regulation of credit funds

In addition to insurers, the European Commission's green paper also cites credit funds as potential alternative providers of long-term financing. From a regulatory perspective, credit funds have an advantage over banks and insurers in that they operate outside classic banking regulation, even though they have a similar nature to banks when it comes to lending (cf. Section 4.3.3). This results in the problem of potential avoidance of both insurers and banks due to lending regulations. As the tightening of regulations makes lending increasingly expensive for banks, credit funds currently have a competitive advantage in this respect. Advocates of credit funds as a financing alternative point out that credit funds have much higher capital ratios than banks, which are supplied by deposits from investors in the funds. In accordance with the AIFM (Alternative Investment Fund Manager) Directive on setting up and managing alternative investment funds in Europe, a maximum limit of 60 per cent currently applies to external funding and therefore a minimum limit of 40 per cent to capital. It should be noted, however, that no strict qualitative requirements – like those in the banking sector – are in place regarding the capital of credit funds. Shareholders in funds can also withdraw their deposits again, which can reduce the funds' capital base very quickly.

From a regulatory perspective, however, these funds receive preferential treatment over classic banking business when it comes to lending, resulting

in a trend towards accumulation of risks beyond the reach of regulators. Banks and insurers also receive incentives to shift lending to funds (cf. Section 5.4). As the entire financial system is becoming increasingly interconnected, these unregulated areas of lending lead to additional systemic risks for the entire financial system. In the light of this also the G20 called for more harmonized regulatory frameworks in November 2014. These are expected to take account of different business models, risk profiles and the risks these operators generate. As well as the introduction of the same rules of competition for the same business, it should be borne in mind that credit funds actually fulfil a complementary function alongside banks, as they can offer a much broader range of high-risk and large-volume financing, such as comprehensive project financing for infrastructure projects. They are much freer than banks in choosing who to lend to and how to structure their loans, as lending by banks is subject to strict regulatory criteria intended to provide a high level of protection for customers and investors alike. However, small-scale business, for example with private customers, is much less attractive to funds, as they would need to build up both the necessary expertise and their advisory staff. This is at least the case when credit funds are set up by non-banks.

With regard to long-term financing, the question arises of the extent to which funds' business models include incentives to provide long-term financing. To promote the provision of long-term financing by credit funds, the European Commission proposed on 26 June 2013, as part of funding plans for long-term investments, that a new Regulation be introduced on specialist investment funds to be used specifically for the long-term financing of tangible assets (EU-Kommission, 2013c). According to the proposals, European Long-Term Investment Funds (ELTIF) will ensure "the provision of long-lived capital in order to finance tangible assets […] as well as intangible assets" (EU-Kommission, 2013c, 2). Moreover, the European Parliament has called for changes that would allow not only institutional investors but also private investors to invest in these funds. Asset classes that ELTIFs will be allowed to invest in include infrastructure projects and listed companies, as well as real estate. In view of the focus and scope of the funds' assets, however, it will only be worthwhile for the funds to invest in large-volume projects, rather than small ones. As a result, we do not expect the creation of ELTIFs for the real estate market to lead to the provision of long-term financing as an alternative to classic banking business, other than for major projects.

5.4 Cumulative effects of regulatory requirements

The close links between the effects of regulations for banks, insurers and funds become particularly clear when it comes to funding for lending. Along with other banks, insurers are among the biggest buyers of Pfandbriefe and bonds in Germany. According to the German banking supervisory authority (BaFin), German primary insurers had Pfandbriefe, municipal bonds and other bonds from credit institutions worth around €238 billion in their portfolios at the end of the fourth quarter of 2013 (BaFin, 2014). With regard to the funding instruments used by credit institutions, a new valuation model for investments will also be developed under Solvency II. The key criteria for the capital requirements associated with bonds, securitisations and covered bonds are included in the spread risk module, like the criteria for lending, and incorporate both the rating and the maturities of the products (Table 3).

In terms of credit standing, bonds with a better rating generally require less capital to be deposited than those with a lower credit standing or no rating. Bonds with no rating and bank bonds are thus set to become less attractive in future, as Solvency II requires considerably higher capital backing for them.

With regard to bond maturities, long-term investments will be backed with more own funds than short-term investments with an identical rating (EIOPA, 2013, 148 et seq.). This risk category also includes German Pfandbriefe, which occupy an important place in the portfolios of German insurers. As they are highly secure investments, Pfandbriefe will be given preferential treatment compared with other securitisations under Solvency II regulations, provided that they have a high rating (EIOPA, 2013, 150). Shorter maturities result in additional advantages, as capital requirements increase in line with maturity. In view of this preferential treatment for Pfandbriefe under the regulations, we can assume that the new regulations will not jeopardise the basic form of funding for banks through Pfandbriefe. As with lending by insurers, however,

Capital requirements for covered bonds Table 3

Capital deposited according to rating and maturity, in per cent

Maturity	Rating						No rating
	AAA	AA	A	BBB	BB	B <	
1 year	0.6	1.1	1.4	2.5	4.5	7.5	3.0
5 years	3.0	5.5	7.0	12.5	22.5	37.5	15.0
10 years	6.0	11.0	14.0	25.0	45.0	75.0	30.0

Source: Ramadurai et al., 2012, 7

the sliding scale of capital deposits according to maturities suggests that the funding of long-term bank business through unsecured bonds will become much more difficult due to a drop in demand in the insurance sector. Only purchases of covered bonds with a rating of "good" will remain attractive to other banks, as only a small amount of funding is required for these for the purposes of the NSFR and they are regarded as highly liquid assets for the purposes of the LCR.

Funding through deposits is an alternative for banks, because deposits, especially from households, are only subject to small discounts. Competition for deposits has actually intensified significantly in Germany, partly in connection with the new regulations (Osman/Köhler, 2011). Deposits do not allow funding at matching maturities, however, which means that banks will tend to prefer shorter loan maturities with this form of funding. If classic providers of long-term financing are no longer able to offer the same amount of long-term financing as previously, due to pressure on covered bonds, banks that obtain funding mainly from deposits will also be under less pressure to offer long maturities. Or, to put it another way, increasing requirements for funding may cause the interest mark-up for long-term funding in relation to shorter-term forms of funding to rise, which will probably also lead to an increase in the mark-up on borrowing costs for customers. As we have seen, long-term loans in Germany are particularly attractive compared with those in other countries because the interest mark-up here has to date been particularly low.

From a banking perspective, credit funds may also become more important in future than they have been up to now. In the context of the deleveraging process initiated through Basel III (cf. Section 5.1), credit funds offer banks the opportunity to provide long-term financing indirectly through their stake in a fund. However, an initial investment in a fund will in principle incur much higher regulatory costs than would be the case with banks' own lending operations. Another key investment criterion for banks will therefore be that the fund must generate an adequate return to cover regulatory costs.

With regard to investment in funds, insurers still face uncertainty about assignment to a regulatory category. Based on the technical specifications for the QIS5 study and the LTGA, the "look-through approach" is to be used to ensure that investment funds are valued in line with the market. Both actively and passively managed funds will thus be assessed to establish which investments they contain (EU-Kommission, 2010, 130 et seq.). For investment in credit funds by insurers, this means that the cost of capital for investment in

the fund matches the cost of capital for their own lending, provided that the fund has a sufficiently transparent structure. If the fund is a real estate fund, however, a 25 per cent capital deposit would be required, in accordance with the risk weighting for the real estate sub-module.

If the look-through approach cannot be applied, for example because the fund structure is not transparent, the fund will come under the equity risk module. According to the latest impact study, products that come under equity risk require different capital deposits depending on the place where they are traded. Securities that are traded on stock exchanges in countries in the European Economic Area and the OECD are valued at a base shock of 39 per cent, i.e. there must be adequate capital to absorb a value adjustment of the corresponding amount. In contrast, a shock factor of 49 per cent applies to shares or interests, hedge funds or alternative investments from other countries (EU-Kommission, 2010, 114). Debt-financed funds are not valued according to the look-through approach, but come under the residual category of Other Equity in the equity risk module, which means that they should have capital backing of up to 49 per cent (IPD, 2011).

Investments by insurers in the planned ELTIFs are to receive preferential treatment, "in order to provide flexibility in the case of ELTIFs as regards the high capital requirements for investments in illiquid assets" (Europäisches Parlament, 2014, 8). According to the European Parliament, the plan is to adapt existing regulations in accordance with Solvency II for investment in ELTIFs; beyond that, "any additional national regulatory constraints should be thoroughly reviewed" where necessary (Europäisches Parlament, 2014, 8). This suggests that credit funds will be particularly favourable for insurers and pension funds under Solvency II from a regulatory viewpoint compared with alternative investment products and that these companies will therefore probably tend to prefer them.

5.5 Necessary adjustments to regulations

As we outlined in Section 4.4, an uncertain environment in particular has a negative impact on the provision of long-term financing. Regulatory uncertainty in almost all areas currently presents an obstacle to long-term financing based on secure plans. For banks, insurance companies and, in particular, credit funds, individual areas of regulation and many planning processes are still outstanding, which makes it difficult for providers to draw up strategic plans and to offer a generous supply of long-term financing. As well as adapting the content of the critical passages in the regulations, it is therefore crucial to ensure more

security in planning for providers of long-term financing and those seeking it, and to clear up any ambiguities in the regulations purposefully and promptly.

Furthermore, to ensure better competition and thus a high-quality supply of long-term financing, it is necessary to eliminate any inequality in competition. As the previous sections have shown, both lending and options for funding are treated differently in regulatory terms depending on categories of providers, which results in unequal competition between providers of financing. It is important to ensure that lenders are competing under equal conditions. If lending regulations favour individual financial intermediaries, the market will become distorted, which could lead to a new imbalance. The result is that risks will accumulate in the shadow banking sector – which for the moment is not subject to scrutiny – and that these could be the starting point for further crises. To increase financial stability, it is not enough simply to tighten regulation of banks; we need to keep the whole system in view. The idea of a shift in long-term financing to alternative financial intermediaries, possibly even supported by additional advantages in regulation, must therefore definitely be rejected.

At the same time, the specialist knowledge that banks have built up over the years, their existing expertise in risk analysis and the associated capacity for performing checks are a strong argument for not making conditions for the supply of long-term financing by banks more difficult through regulations. The implementation of Basel III at European level currently still offers incentives for shorter loan maturities. This is due to a mix of disadvantages for traditional providers of long-term financing, such as mortgage banks, and the incentives offered with liquidity ratios in combination with other regulations concerning the investors, such as Solvency II for insurers.

The central idea behind Basel III is to reduce risks in the banking sector and thus strengthen financial stability. At the same time, however, the economic function of banks will be restricted. Regulators are thus confronted with a dilemma. On the one hand, security on the financial market needs to be improved in the light of experience gained during the financial crisis, to prevent or at least limit negative repercussions on the real economy in future. On the other hand, this makes long-term financing more difficult, which also has negative repercussions on the real economy, because it reduces security in planning and because long-term financing has a calming effect on price trends, as shown in Section 3.3.

The European Commission (EU-Kommission, 2013b) has acknowledged this dilemma in the green paper it presented, which was outlined in the intro-

duction. After the analysis of long-term financing and the discussion of its provision by banks and alternative providers of financing, however, we must disagree with the European Commission's approach. Although other providers such as insurers or credit funds may also be able to provide loans, their business models, experience and capacity means that such providers can at most complement banks, but cannot replace them. After all, the original task of banks was to collect capital and transform it into long-term loans.

Regulations are now causing banks to forfeit some of their original competitive advantage over alternative providers of financing. Insurers, credit funds and other financial intermediaries are in some cases much less tightly regulated than banks when it comes to lending. Cosimano/Hakura (2011), two economists at the International Monetary Fund, therefore expect to see regulatory arbitrage, and believe that the shadow banking sector will become considerably more important. This will not reduce the risks in the economy, however, but will merely shift them elsewhere or even increase them. As the regulatory standards for alternative financing providers are in some cases significantly lower than under Basel III, it is not unlikely that there could actually be a rise in overall risk. If the European Commission even attempts to expand the shadow banking sector through incentives in order to widen the market for long-term financing, as is envisaged in a current communication (EU-Kommission, 2014), the risk of a new financial crisis would increase overall, although its origin would lie not in the banking sector but in the shadow banking sector.

The objective must therefore be to draw up regulations in such a way as to ensure that banks become more secure and robust whilst maintaining their functionality. Regulations need to focus in particular on systemic risk, i.e. the risk of a domino effect in the event of the insolvency of individual banks, as this was the main problem in the financial crisis (Krahnen, 2013). Important measures have already been taken here to curb the effects of insolvency with the implementation of the banking union (Demary, 2013). While the banking union regulates the case of insolvencies, Basel III must help to reduce the probability of insolvency.

It would be beyond the scope of this study to develop detailed proposals for a reform of Basel III. However, from the analysis we have conducted so far we can derive a few guidelines for the revision of regulations.

It is indisputable that banks need to keep more capital available. Insufficient capital was the main reason why banks were unable to absorb the initial losses from the subprime crisis (Jäger/Voigtländer, 2007). Depending on their risk,

banks should therefore have more capital backing, as is planned under Basel III. This has little influence on the type of lending and thus does not constitute a general impediment to long-term financing. As the cost of capital is higher than the cost of borrowing, in contrast to the Modigliani-Miller theorem, which is partly due to principal-agent problems (Myers/Majluf, 1984), this will increase borrowing costs but will lead to a corresponding improvement in financial stability.

However, our assessment is different when it comes to the leverage ratio. The leverage ratio is not linked to the business model or risks assumed and, according to the current proposals, is to be 3 per cent (capital in relation to total assets). As we have shown, the leverage ratio has negative repercussions, particularly for specialist lenders that have focused on long-term financing. These banks have until now been competitive because their stable, low-risk business meant that they only needed to keep a small amount of capital available. Although it is conceivable that specialist lenders may increase their capital base, the fact that their profits are lower on average makes specialist lenders less attractive to investors, particularly as risk assessment for banks is still distorted by the possibility of a state bailout (Krahnen, 2013). The more likely method and the one that has been practised to date is therefore to adjust total assets, which weakens long-term financing overall. Nevertheless, it also seems problematic to abandon regulation of the leverage ratio completely, as banks have in the past exploited the available leeway for valuations when measuring risks associated with their activities (SVR, 2008). A compromise could therefore involve using the leverage ratio merely as a monitoring ratio, rather than making it mandatory. A reduction in the Common Equity Tier 1-ratio could then constitute a reason for the financial regulator to conduct a thorough investigation of the balance sheet and the activities of the bank concerned. This would also be more in line with the purpose of the leverage ratio, which ultimately may not be justified in theory. It is, after all, required mainly because risk measurement is uncertain. It therefore seems appropriate to commence investigations if there is a drastic change.

The net stable funding ratio (NSFR) represents another significant constraint. Although the NSFR offers incentives for long-term funding, it also provides incentives to reduce loan maturities. Overall, the literature is critical of the new liquidity ratios (Allen et al., 2012). Although national regulations also provide guidelines on liquidity management, the requirements of Basel III go well beyond this. Based on the various haircuts (discounts) on funding

and assets, the regulator also evaluates individual areas of business and sources of funding, allowing it to suggest ways to reorganise them. This can be done at only a very basic level, however, and the security of individual sources of funding can also change over time. Deposits from private customers, for example, are included in the NSFR at a comparatively high ratio of at least 80 per cent. However, experience teaches us that even private customers can withdraw their funds at short notice during difficult economic times, which has often proved enough of a reason for the illiquidity of banks (Dwyer/Gilbert, 1989). As explained above, the funding mix is a guarantee of stable and efficient funding. The evaluation of funding (and assets) with regard to how liquid they are can cause particular arrangements to become dominant, which then prove to be a disadvantage when market conditions change. In principle, therefore, liquidity ratios should not be too restrictive. One possibility would thus be to set the threshold for the NSFR and the LCR at around 95 per cent rather than 100 per cent. This would increase banks' scope whilst simultaneously preventing excessive maturity transformations such as those that were sometimes chosen before the financial crisis. It could also be stipulated that banks whose NSFR deteriorates or drops below 100 per cent must be placed under special observation.

On balance, we are therefore arguing for a regulatory system that is based not so much on ratios alone, but one that involves more individual investigations and that enters into dialogue with financial institutions. We must not forget that the business models of banks in the EU vary widely and that both the Common Equity Tier 1-ratio and liquidity ratios are of only limited validity in predicting an institution's probability of insolvency. These ratios must therefore not be too restrictive.

In view of the large number of financial intermediaries, it becomes clear that requirements for funding are set to become much tighter in future and that competition for issues will increase. As shown in Section 5.4, the regulation of demand for the relevant products must also be taken into account when guaranteeing long-term financing. As insurance companies are major buyers of unsecured and covered bonds, a significant effect can be expected from this group (Haas et al., 2013). Maturity regulations for unsecured and covered bonds should therefore be reviewed again under Solvency II, as the European Parliament is already envisaging for the planned European Long-Term Investment Funds (ELTIFs).

It is also essential to make greater use of market forces. One major problem that has persisted is that market participants assume, in view of the

systemic risks involved in the insolvency of a bank, that banks will be rescued if the worst comes to the worst. This is why market participants have not adequately monitored risks associated with banks in the past (Admati/Hellwig, 2013). For this to change, more shareholders from outside the banking sector need to become involved. If losses occur, it would be feasible to have recourse to these owners, as no chain reactions will result.

In their book "The Bankers' New Clothes", Admati and Hellwig argue the case for strengthening banking regulation by building up much higher unweighted capital ratios of 20 to 30 per cent and making the financial system more resistant to crises (Admati/Hellwig, 2013). As demonstrated in Section 5.1, the expansion of the capital base is not fundamentally inconsistent with guaranteeing long-term financing. However, care should be taken to ensure that no distortion occurs either within the bank or throughout the entire financial system. This could occur within the bank if preferential treatment were given to short-term financing, while a level playing field must continue to be guaranteed within the financial system for all providers of long-term financing. Furthermore, an increase in the unweighted capital ratio would put conservative business models with lower-risk business at a disadvantage, as described in more detail in Section 5.1, which cannot be desirable in view of the planned policy of stabilisation. A practical problem that banks could face when trying to build up more capital is that they are only likely to find capital providers outside the banking sector if they can provide proof of a comprehensible risk-return profile. However, based on the experiences of the last few years, it will actually be difficult to obtain adequate capital.

6 Conclusions

Banks are to be more tightly regulated in future, in response to the financial and economic crisis. It is hoped that this will increase the stability of the financial system and reduce the risk of another crisis. There is no question that the new rules will improve the robustness of banks. At the same time, however, it is becoming increasingly clear that regulations will noticeably restrict the economic function of banks. In particular, banks will be able to fulfil their function as providers of long-term financing only to a limited extent in future.

With regard to the research questions initially posed, this study has firstly shown that long-term financing gives the real economy security in planning and thus makes a vital contribution to the stability of the markets. Based on the example of the housing market, we have demonstrated that markets with a focus on long-term financing are less volatile. By implication, a reduction in long-term financing would increase volatility on asset markets again, with corresponding disadvantages for economies. As demand shapes supply to a large extent, markets that have traditionally been characterised by long-term financing will continue to offer such products, but at much higher costs, which in the long run will reduce the importance of the market. In other countries, the potential for long-term financing will not even be able to develop.

The European Commission has recognised this issue and put it on the agenda. While this is to be welcomed, the strategy of shifting long-term financing to other financial intermediaries must be regarded as extremely problematic. Secondly, we have shown in detail based on our results that banks are predestined for the provision of long-term financing, in view of their funding options, their business model and their extensive experience. A shift to other market participants can be achieved through unequal framework conditions in regulation or other incentives, but this is not efficient. Moreover, it will then no longer be possible for the cheapest providers to offer long-term financing, if alternative financing providers are in a position to offer long-term loans on a significant scale at all. What is even more problematic, however, is that this would shift lending into a less regulated and less well-established sector, which would increase the risk of fresh disruptions. The end result is that, although banks would become more robust, the risks to the financial system would actually increase.

Thirdly, the results of the study show that Basel III needs to be reviewed again based on the current plans. The unweighted capital ratio and the NSFR in particular are proving to be a constraint on long-term financing. The function of both ratios is limited, as compliance with the ratios will not guarantee a reduction in a bank's insolvency risk. It would have been beyond the scope of this analysis to draft a proposal for a reform of Basel III, which would also have to be coordinated with other sets of regulations, such as Solvency II. In general, however, the use of the ratios as monitoring indicators rather than set limits seems reasonable, as does the use of market forces in monitoring market participants. In addition, the focus on ratios should generally be reconsidered in favour of more individual investigations, as practised in the past by the Financial Services Authority (FSA) in the United

Kingdom, for example. Although this would certainly lead to higher regulatory and supervisory costs, a reduction in long-term financing would entail much higher costs for the real economy overall.

As well as the adjustments to the content of the regulations mentioned above, financial market regulations need to consider two central points in order to guarantee long-term financing options. Firstly, regulators must bear in mind that regulatory uncertainty should not be allowed to prevent providers of long-term loans from having security in planning for too long. At the same time, it must be ensured that regulations have a neutral impact on competition between different providers, so that competition can guarantee a high-quality supply of long-term financing and the further stabilisation of the system.

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Abstract

Long-term financing plays an important part in calming the markets and thus ensuring the stability of economies. The German market for residential real estate financing provides an impressive example of this. However, new financial market regulations such as Basel III and Solvency II will cause the market for long-term financing to contract, as banks will be incentivised to grant more short-term loans. Other financial intermediaries such as insurance companies or funds are unlikely to be able to close this gap. Although alternative financial intermediaries will increase their lending due to advantages in regulation, they will be unable to eliminate the shortage of long-term financing, owing to a lack of experience and incentives. The regulatory framework must therefore be adapted to make the banking sector more robust while simultaneously allowing it to continue to fulfil its original economic functions.

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