

ASSESSING THE FINANCING CONDITIONS OF THE EURO AREA PRIVATE SECTOR DURING THE SOVEREIGN DEBT CRISIS

ARTICLES

Assessing the financing conditions for the euro area private sector during the sovereign debt crisis

Maintaining access to external financing for the euro area non-financial private sector is essential for the functioning of the economy. To monitor developments that have a bearing on this access to financing, a proper assessment of financing conditions is necessary and, thus, a framework that can be used to understand the channels through which financial shocks, particularly emanating from the sovereign debt markets, propagate from the financial system to the real economy. This article describes such a framework and uses it to analyse how the financing conditions of euro area firms and households have evolved since the start of the sovereign debt crisis.

While the ECB's policy response has, to a significant extent, sheltered the non-financial private sector from the sovereign debt crisis, and has avoided major disruptions in the financing of the economy, the financing environment of both banks and the non-financial private sector of countries affected by the sovereign debt crisis remains challenging. This is particularly reflected in persistent cross-country heterogeneity as well as in the strong link between sovereign market tensions, the funding and balance sheet conditions of banks, and the financing of non-financial corporations (NFCs) and households in the euro area.

I INTRODUCTION

The financial crisis, which started in August 2007, impaired several segments of the global financial system, affecting the financing conditions of both the financial and non-financial sectors. In the period since the beginning of 2010 tensions in the financial system have reignited as a result of concerns about the financing of some euro area sovereigns. The euro area has been particularly affected and financing conditions have on the whole remained tight over the period. Moreover, they have become increasingly diverse across euro area countries.

This situation has occurred despite the fact that the key ECB interest rates are at very low levels. The ECB has implemented various non-standard measures to address the impairments in the monetary policy transmission mechanism that affect several segments of the euro area financial system. Such measures have often provided governments with more time to put in place structural measures that are required to address the fundamental causes of the crisis.

To assess the impact of the sovereign debt crisis on the financing conditions of the euro area private sector, several interrelated aspects must be considered. First and foremost, funding and balance sheet conditions in the banking system warrant careful scrutiny.

There are strong interdependencies between banks and governments, through both balance sheet and contingent claim exposures. These interdependencies mutually reinforce the macroeconomic propagation of banking or sovereign market tensions. Second, given the fragmentation of some market segments and the setback to European banking sector integration, persistent cross-country heterogeneity needs to be considered. Third, a proper assessment of financing conditions hinges on the distinction between demand and supply-side factors in credit intermediation. Finally, the impact of non-standard measures adopted by the ECB and the Eurosystem as a whole needs to be identified. The impact of some measures that have prevented the materialisation of tail risks may not be immediate or direct.

The article analyses developments in the financing of banks, NFCs and households, primarily at the euro area level, since the start of the sovereign debt crisis in 2010. While the primary focus is on the financing of the euro area non-financial private sector, particular attention is paid to the transmission of changes in banks' funding conditions to the financing of the non-financial private sector. To this end, a framework is described in which the various dimensions of financing conditions, such as financing volumes, financial prices, bank retail rates and lending standards, are considered together.

The article consists of six sections. Section 2 presents a framework that can be used to understand how tensions in the financial system propagate to the economy as a whole. The key role played by banks in the financing of the euro area economy is discussed. Recent developments in the euro area banking sector are then analysed in detail in Section 3. It is shown that banks' access to funding has become a major concern in terms of their potential to constrain loan supply to the non-financial private sector and, ultimately, to weigh negatively on economic activity. However, at times of high stress and funding problems, standard and non-standard measures taken by the Eurosystem have enabled euro area banks to continue to provide credit to the economy. Section 4 describes the external financing of NFCs, its determinants and its linkages with banks' funding. It highlights the transmission of changes in banks' funding conditions to the prices and terms applied to credit supplied to firms, and provides some evidence of asymmetries across corporations, in particular across large and small firms. At the same time, the subdued movements recorded in loans over the period are shown to reflect mainly weak demand. Section 5 examines the financing of households, with a particular focus on loans for house purchase, which constitute the lion's share of credit to households. Section 6 concludes with a discussion of the extent to which the policy response has so far alleviated some of the tensions and a review of the remaining challenges.

2 A FRAMEWORK FOR THE ANALYSIS OF FINANCING CONDITIONS IN THE EURO AREA AND THE IMPACT OF THE SOVEREIGN DEBT CRISIS

This section provides an overview of the components and linkages forming the financing conditions of the private sector in the euro area and their interaction with the sovereign debt crisis. It first distinguishes different components that influence the financing conditions of bank-based and market-based debt financing. Next, it highlights the effects of the sovereign

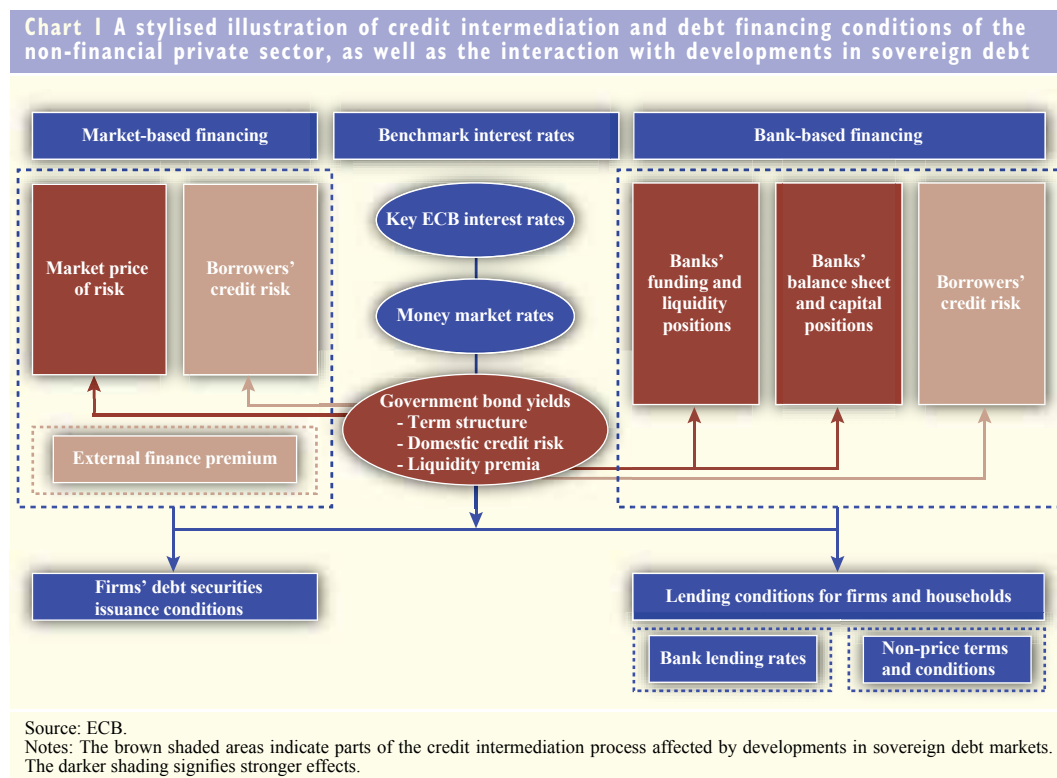
debt crisis on these components and details distinct channels of propagation of sovereign debt tensions to the financing conditions of the private sector.

Central to these conditions are developments in benchmark interest rates. These comprise mainly the key ECB interest rates, money market rates and government bond yields, with the latter containing the term structure of risk-free rates, domestic sovereign credit risk and liquidity premia (see Chart 1). These rates are the main determinants of the conditions of direct financing in financial markets for both non-financial and financial corporations and, consequently, for the wholesale market funding and deposit funding of banks. In the euro area, bank-based financing is the predominant source of external debt financing for the non-financial private sector. Therefore, factors that have an impact on credit intermediation through banks also exert a particularly strong influence on the financing conditions of firms and households.

More specifically, the effects of the sovereign debt crisis on banks' funding and liquidity positions, as well as on their balance sheet structures and capital positions, have had an impact on banks' lending rates, non-price conditions and lending volumes to the non-financial private sector. In addition, in the case of market-based financing, the sovereign debt crisis has affected the external finance premium for borrowers via its impact on their credit risk, as well as via its overall impact on the market pricing of risk.

Broadly speaking, there are three propagation channels for the sovereign debt crisis through which tensions and disruptions in government bond markets can affect private sector financing conditions and have an impact on the monetary policy transmission mechanism: a price channel, a balance sheet channel and a liquidity channel.¹

¹ In part, this classification departs from standard classifications of the monetary policy transmission mechanism as they typically assume a perfect functioning of government bond markets.



The most direct effects are exerted via the price channel, through which substantial increases in government bond yields – and more specifically in domestic sovereign credit risk – can lead directly to higher financing costs for the private sector via capital markets as well as via bank lending rates. Most prominently and directly, government bond yields affect financing conditions as they typically function as benchmark interest rates, particularly in that they reflect the term structure of risk-free rates, but to some extent also in that they contain the domestic sovereign credit risk and the liquidity premium (see the middle of Chart 1). In the case of capital markets, the correlation of government bond yields with yields on bonds issued by financial institutions is expected to be higher than with yields on bonds issued by NFCs, as the credit risk of banks and sovereigns is – particularly in periods of severe financial market tensions – more closely and directly connected than they are with the credit risk of the non-financial sector. Via a change in the refinancing costs of banks associated with changes in bank bond spreads,

such increases in government bond yields have a strong impact on banks' funding conditions (represented by the arrow to "Banks' funding and liquidity positions" in Chart 1), which may be passed through to bank lending rates.²

As regards the balance sheet channel, revaluations of government bonds may directly entail changes in the size of the balance sheet, both for banks and for their customers. These changes may additionally be amplified by regulatory responses to banks' sovereign exposures, posing a threat to the stability of the banking system. For banks, if the market valuation of sovereign bond holdings falls below the book value, this may imply an erosion of their capital base both directly, via revaluation effects on the banks' own government bond holdings, and indirectly, via a deterioration in the creditworthiness of their borrowers (represented by the arrow to "Banks' balance sheet

² In addition, increases in government bond yields may directly affect bank lending rates through variable rate agreements on loans or mortgages. However, such agreements are usually linked or indexed to money market rates.

and capital positions” in Chart 1). The resulting higher leverage negatively affects banks’ market funding conditions and may force them to shrink their balance sheets, with adverse effects on their capacity to extend loans to the private sector. This revaluation effect may be amplified by effects transmitted through the price channel, given that changes in government bond yields affect the prices of other privately issued securities to some extent. In addition, banks’ deposit base may deteriorate if households and NFCs withdraw funds in response to banks’ weaker financial soundness. Likewise, such revaluations affect the non-financial private sector’s holdings of government bonds and other affected securities, which has a negative impact on the credit risk of households and firms (represented by the arrows to “Borrowers’ credit risk” in both the bank-based and market-based financing panels of Chart 1). This implies a higher external finance premium for the non-financial private sector and further tightening of the financing conditions applied by banks and financial markets.

Finally, changes in government bond yields indirectly affect banks’ funding conditions via

the liquidity channel. As euro area banks have increasingly relied on wholesale market funding, their exposure to changes in conditions applied to market financing has likewise increased. Given their high liquidity in normal times, government bonds are prime collateral used in European repo markets and may serve as a benchmark for determining the haircut for other assets used in such transactions. Disruptions in the government bond market can thus spill over to other market segments, leading to a deterioration in banks’ market access to liquidity (represented by the arrow to “Banks’ funding and liquidity positions” in Chart 1). If the ratings of sovereign bonds in a collateral pool are downgraded, it can lead to a review of the pool’s eligibility for use as collateral, triggering margin calls and a reduction in the volume of accessible collateralised credit. This, in turn, could have repercussions on banks’ ability to use government bonds as collateral for secured interbank lending and to issue their own bonds, ultimately resulting in an increase in banks’ funding costs. The box provides a synthesised view of financing conditions indices for the euro area.

Box

FINANCING CONDITIONS INDICES FOR THE EURO AREA

Several international organisations and large financial institutions have developed financing conditions indices (FCIs).¹ Isolating financing conditions from monetary conditions is especially useful at the current juncture, which is characterised by low monetary policy rates but substantial stress in the financial system. This box reviews briefly the methodology used to construct such FCIs and looks at some results obtained for the euro area as a whole.

As discussed in the article, financing conditions are multifaceted and are therefore characterised by a large set of indicators. With a view to assessing the impact of financing conditions on economic activity, it may be useful to synthesise these indicators in a single measure of the overall financing environment. This will often result in an extreme simplification, as changes in FCIs can result from various factors, such as supply conditions in parts of the financial system, risk aversion or market sentiment.

¹ See, for instance, the indices of the IMF, the OECD (regularly used in the “Economic Outlook”) and Goldman Sachs (systematically used in the “Global FX Monthly Analyst”).

Research on financing conditions was preceded by extensive analysis of the impact of monetary conditions on the economy. The original idea behind the development of monetary conditions indices (MCIs) was that interest rates set by central banks may give an incomplete picture of the impulses imparted by monetary policy to economic activity. A number of authors later extended the idea of MCIs to other asset prices relevant for the analysis of economic activity (such as long-term interest rates, equity prices and house prices, among others) as well as to variables that provide signals regarding the various dimensions of the financing situation in the economy considered. The resulting measures were called FCIs. Extensive work has been done to analyse financing conditions in the United States and, to a lesser extent, in the euro area.

Hence, FCIs are intended to provide a broader measure of financing conditions than is provided by MCIs, which usually focus on the short-term interest rate and the exchange rate. In the same way as MCIs, FCIs are computed as a weighted sum of deviations of certain variables from their long-run trends:

$$FCI_t = \sum_{i=1}^p a_i (x_{i,t} - \bar{x}_i) \quad (1)$$

where x_i is a set of variables characterising the financial system, such as the short-term interest rate, the ten-year government bond yield, the real effective exchange rate, stock prices and credit conditions.² For each variable, the deviation from the average is incorporated in the FCI with a weight a_i . By construction, the sum of the weights is equal to one. Also by construction, the FCI has no meaning in absolute terms, as the index is normalised at some period. FCIs differ in several respects. The three most important differences across FCIs lie in the methodology used to compute the weights attached to the variables, the control for endogeneity of the financial variables, and whether or not the policy interest rate is included among the financial indicators.

The weights can be computed using various models and estimation techniques. For instance, they can be estimated such that a given change in the index is indicative of an impact on overall GDP over a certain horizon. In this case, the weights are generated from simulations using large-scale macroeconomic models or econometric models (such as vector autoregression models or reduced-form demand equations). Because the analysis requires an econometric estimation of the impact of financial conditions on macroeconomic outcomes, the number of variables has to be kept low under this approach.³

A pitfall of such an approach is that, while it does not account for the shock driving the change, the source of the shock has a bearing. For instance, a decline in stock prices can reflect either weaker demand prospects or an unexpected tightening of monetary policy – neither of which should affect the FCI – or higher risk aversion or more difficult access to external financing – both of which should be reflected in a tightening in the FCI. Recent research proposes more complex FCIs, using econometric techniques which allow a more structural decomposition of each variable included in the index so as to interpret the original source of a change while retaining the ability to consider a large number of signals.

2 See Guichard, S., Haugh, D. and Turner, D. (2009), “Quantifying the Effect of Financial Conditions in the Euro Area, Japan, United Kingdom and United States”, OECD Economics Department Working Papers, No 677; or Matheson, T. (2011), “Financial Conditions Indexes for the United States and Euro Area”, IMF Working Paper No 11/93.

3 For an illustration based on the US economy, see, for instance, Swiston, A. (2008), “A U.S. Financial Conditions Index: Putting Credit Where Credit is Due”, IMF Working Paper No 164.

Turning to an illustration of such research,^{4,5} a panel of 36 series is used, a few of which refer to the real economy: manufacturing production, HICP inflation and oil prices. The bulk of the series refer to conditions in the banking sector, stock market or debt market: stock prices, bank lending rates, government bond yields, bank liquidity ratios and capital ratios, bank loans and debt securities issuance. While this panel of series represents only a partial view of the financial sector, it enables euro area developments since the beginning of the 1990s to be considered.

By nature, each indicator is affected by specific shocks, but also by common shocks, such as demand shocks, nominal shocks, monetary policy shocks and changes in financing conditions. None are observable but the impact of demand shocks, price shocks and monetary policy shocks can be isolated by projecting each series of the dataset on series often used

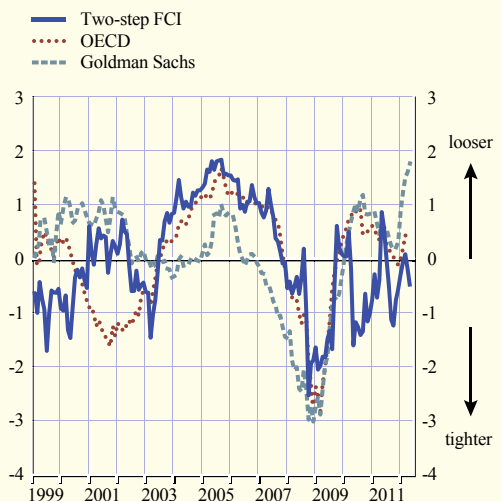
as a proxy in the literature: manufacturing production, HICP inflation and the three-month EURIBOR. This represents the first estimation step. After having isolated from each series the changes that are a result of demand, inflation and monetary policy developments, the remaining component is assumed to reflect the financing conditions and the idiosyncratic component.

In the second estimation step, standard factor model techniques are used to isolate the common component. In this box, the standard Stock and Watson technique is used to isolate for each variable the effects of non-financing and idiosyncratic shocks from the overall financing conditions.⁶ The resulting FCI – called the two-step FCI – is the common component of all the series from which the impact of demand factors, nominal factors and monetary policy has been purged.

Over the longer term, the two-step FCI co-moves considerably with the OECD indicator and the Goldman Sachs indicator (see Chart A). The estimates track successfully both worldwide and euro area-specific financial events. From 2005 to 2007 all three indicators point to looser financing conditions in the euro area compared with the historical average. In the course of 2008 the indicators move to indicate a tightening in financing conditions. Financing conditions deteriorated sharply during the financial crisis in 2008-09, following the collapse of Bear Sterns in early 2008 and particularly after Lehman Brothers filed for bankruptcy in September 2008. The indices reach a historical minimum at the end of 2008, before financing conditions started to loosen.

Chart A Estimated financing conditions indices for the euro area

(twelve-month moving averages)



Source: ECB computations, OECD and Goldman Sachs. Notes: An increase in the indicator denotes a loosening of financing conditions. The latest observation is for May 2012.

4 The work is based on internal ECB analysis used for the preparation of monetary policy discussions.

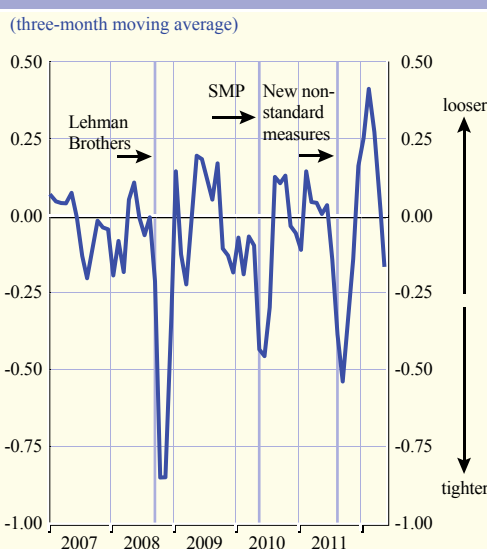
5 For more technical discussions on a similar indicator, see, for instance, Hatzius, J., Hooper, P., Mishkin, F., Schoenholtz, K.L. and Watson, M. (2010), "Financial Conditions Indexes: A Fresh Look After the Financial Crisis", NBER Working Paper No 16150.

6 For a presentation of standard factor model estimation techniques, see Stock, J.H. and Watson, M. (2002), "Macroeconomic Forecasting Using Diffusion Indexes", *Journal of Business & Economic Statistics* 20, pp. 147-162.

While the three indicators co-move strongly over the longer term, the two-step FCI appears to vary much more strongly from the beginning of 2009. This is the case, for instance, for 2010 and 2011 – periods in which the other two indices hardly move. This possibly reflects the fact that the important role played by financial factors over this period is, by construction, better captured by the two-step FCI. Unlike the other two indicators, the two-step FCI encompasses a large range of financial series.

In particular, focusing on the most recent period, the two-step FCI indicates that financing conditions started to tighten at the beginning of 2010 amid concerns about some euro area sovereign debts, but the announcement of the Securities Markets Programme by the ECB in May 2010 brought this deterioration to a halt. Triggered by renewed fiscal concerns, financing conditions tightened again between mid-2011 and October 2011. The announcement of further non-standard measures by the ECB in the last quarter of 2011 has led to a clear improvement in financial market conditions (see Chart B). These results support the view that non-standard measures have succeeded in alleviating financial market tensions in the euro area, though the financial environment appears to have tightened again recently following the intensification of turmoil in euro area sovereign debt markets.

Chart B The two-step financing conditions index since the beginning of the financial crisis



Source: ECB calculations.
Notes: An increase in the indicator denotes a loosening of financing conditions. The latest observation is for May 2012. SMP denotes the Securities Markets Programme.

3 FUNDING OF EURO AREA BANKS

As banks are highly leveraged institutions, the impact of changes in their funding conditions, whether affecting prices or quantities, are magnified on the asset side of the balance sheet. It is therefore extremely important to monitor banks' access to funding in order to assess their ability to provide credit to the real economy. Focusing on debt markets, this section provides an analysis of bank funding volumes and costs since the beginning of 2010 in the light of the framework described above.

PERCEIVED RISK AND THE COST OF BANK FUNDING

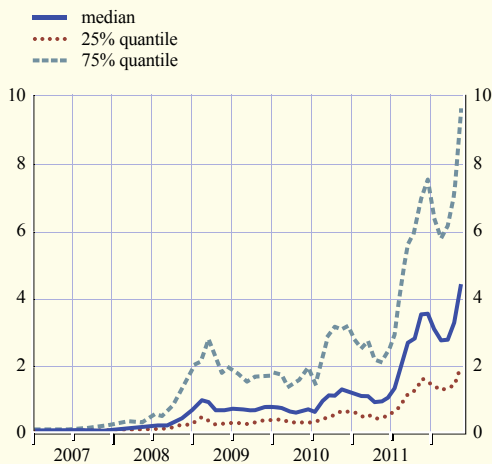
Since the beginning of the sovereign debt crisis the effectiveness of the bank lending channel for the transmission of the monetary policy stimulus to the economy has been increasingly

impaired, especially in a number of euro area countries. Following heightened concerns about some sovereigns in the middle of 2010 and, subsequently, in the second half of 2011, the risk aversion of investors has increased. Moreover, the valuation of the sovereign bond portfolio held by euro area banks has declined. These factors have been reflected in the funding conditions of euro area banks both via valuation losses and via increases in the perceived risks relating to bank assets.

Since the beginning of the financial crisis the expected default frequency of euro area banks has increased, particularly in the middle of 2010 and in the middle of 2011 when the sovereign debt crisis escalated (see Chart 2). Although this evolution is partly explained by perceptions of a weaker outlook for economy activity, the lower valuation of bank assets, partly associated with

Chart 2 Expected default frequency of listed euro area banks

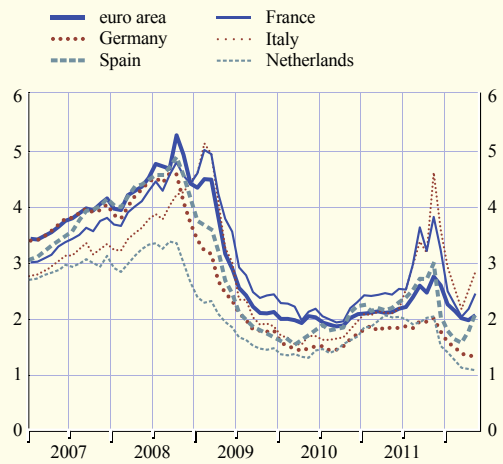
(probability of default within the next twelve months; percentages)



Sources: Moody's KMV and ECB calculations.
Notes: The data are based on a sample of listed euro area banks. The latest observation is for May 2012.

Chart 3 Banks' composite cost of deposit funding and non-secured market debt funding

(percentages per annum; monthly data)



Sources: Merrill Lynch Global index and ECB calculations.
Notes: The data comprise the weighted average of deposit rates on new business and the cost of market debt funding. The outlier (2008/09) is smoothed out. The latest observation is for May 2012.

concerns about the sustainability of several euro area sovereigns' debt, is likely to have played a key role. As a result of this perceived increased risk, banks in a number of euro area countries have found it increasingly difficult to finance their activities, purchase securities and provide loans to the economy.

On the price side, euro area banks' costs of private financing, which include financing via both deposits and debt securities issuance but exclude Eurosystem financing, increased steadily from the beginning of 2010 until the end of 2011 (see Chart 3).³ The increase in risk aversion and the decline in confidence in bank assets caused by the sovereign debt crisis impaired the transmission of the cuts in monetary policy rates in November and December 2011 to the funding costs of banks. This was particularly the case in some euro area countries where investors required higher risk premia to hold bank debt. In these countries, the wholesale funding costs of euro area banks have not fully responded to the monetary stimulus. Nevertheless, euro area banks also fund their activities with deposits, for which the remuneration has declined slightly over the

period for the euro area as a whole with, however, very diverse situations across countries. At the turn of 2011 the decline recorded in the composite cost of private financing mainly reflected a decline in the cost of market debt financing owing to an improvement in market confidence, which was partly triggered by the two three-year longer-term refinancing operations (LTROs).

BANK FUNDING CONDITIONS

On the funding side, since the beginning of 2010 banks in a number of euro area countries have encountered increasing difficulties in obtaining funding for their activities via market sources (see Chart 4). Indeed, both short-term and long-term MFI debt issuance remained subdued over the period. Short-term MFI debt, an important component of volatile funding sources, actually declined substantially between 2010 and the second half of 2011. Several factors contributed to the low issuance activity. It was in part the result

³ Eurosystem financing is not shown in the chart. Given the lower interest rate paid by banks for credit provided by the Eurosystem, the increasing recourse to Eurosystem financing has partly compensated for the increase in the cost of private financing.

of the maturing of government-guaranteed bonds, which were not renewed. It also reflected adjustments to liquidity requirements as well as changes to banks' funding structure triggered by their desire to be less dependent on short-term market debt. Moreover, the level of confidence and risk aversion of debt market participants also played a role. In this context, some MFIs have a high share of short-term debt securities relative to their total debt securities issued, which need to be rolled over frequently and thus imply a higher liquidity risk. This structural characteristic, namely the funding pattern of banks, may explain why, on some occasions, bank funding costs reacted to differing extents to equivalent shocks.

Information from the euro area bank lending survey conducted by the Eurosystem each quarter suggests that banks' access to market funding deteriorated in 2011, across all the main

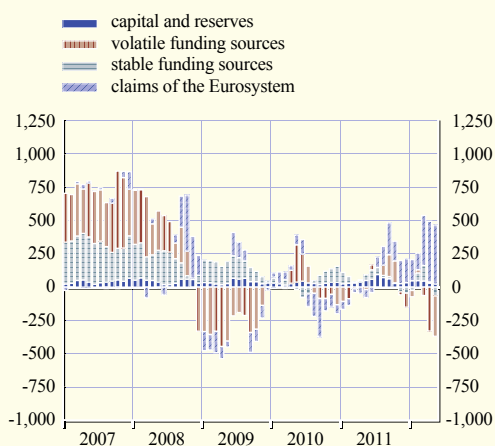
components of market funding, namely the money market, debt securities and securitisation (see Chart 5). More specifically, the sovereign debt crisis was found to be a major factor adversely affecting the funding conditions of banks at the end of 2011.⁴

While it is clear that the sovereign debt crisis has affected bank funding conditions, it is extremely difficult to assess the impact on the real economy

⁴ In the bank lending survey, respondents were asked about the impact of sovereign debt on bank funding. For the last quarter of 2011 on balance about 30% of euro area banks attributed the deterioration in funding conditions to the sovereign debt crisis, particularly via (i) its impact on collateral values; (ii) the impact on their balance sheets through their own sovereign bond holdings; and (iii) via other effects, such as the weaker financial positions of governments or spillover effects on other assets, including the loan book. In the second quarter of 2012 on average 22% of participating banks – in net terms – attributed a deterioration in funding conditions to the sovereign debt crisis which contrasts with on average only 4% in the first quarter of 2012.

Chart 4 Main liabilities of euro area credit institutions

(three-month flows in EUR billions, adjusted for seasonal and calendar effects)

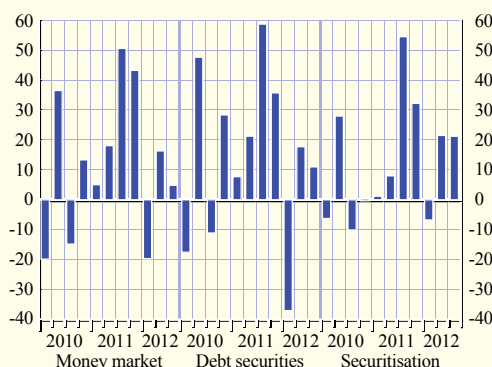


Sources: BSI statistics and ECB calculations.

Notes: The reporting sector comprises MFIs excluding the Eurosystem. Stable funding sources include deposits of the non-financial sector, excluding central government; longer-term deposits of non-monetary financial intermediaries; deposits of non-resident non-banks; and MFI debt securities with a maturity of more than one year. Volatile funding sources include deposits of MFIs excluding the Eurosystem; short-term deposits of non-monetary financial intermediaries; deposits of central governments; deposits of non-resident banks; and MFI debt securities with a maturity of up to one year. The latest observation is for May 2012.

Chart 5 Funding conditions of euro area banks

(net percentages of banks reporting a deterioration in market access)



Sources: ECB and the Eurosystem's bank lending survey.

Notes: The data for the third quarter are based on survey respondents' expectations. The net percentages are defined as the difference between the sum of the percentages for "deteriorated considerably" and "deteriorated somewhat" and the sum of the percentages for "eased somewhat" and "eased considerably".

of developments on the funding side of euro area banks. The results of the bank lending survey suggest that the funding problems in the euro area banking sector spilled over to the banks' management of their assets and therefore to the real economy. Indeed, throughout 2011 credit standards on loans to NFCs tightened, particularly in some euro area countries.

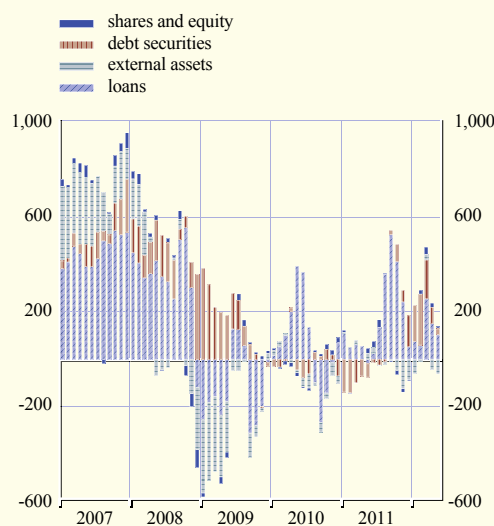
DELEVERAGING FORCES

In the context of the sovereign debt crisis, the funding conditions of euro area banks have deteriorated. Moreover, the valuation losses triggered by changes in the price of their sovereign debt holdings have, in some cases, depleted bank capital. This has led to deleveraging forces in order to restore both bank solvency – by reducing their risk-weighted assets in order to counter the decline in their regulatory capital ratio – and bank liquidity, by reducing the amount of assets to be financed.

Since the beginning of 2010 the level of euro area MFIs' asset holdings has remained almost unchanged. However, major changes have occurred in the composition of their holdings (see Chart 6). In the second half of 2011 MFIs reduced their holdings of external assets, mainly by reducing their asset positions vis-à-vis non-resident banks. Indeed, deleveraging has primarily been achieved through a reduction in the international exposure of euro area banks. This decline was largely offset by an increase in MFI credit to non-MFIs. Over the same period, for the euro area as a whole, lending to the private sector did not decline. This masked diverse developments across countries, however. There are two reasons for the relative resilience of loans. First, lending constitutes the core of euro area MFIs' business and, second, loans are rather illiquid assets, particularly with the securitisation and syndication markets at a standstill. At the turn of 2011 banks accumulated securities other than shares, issued mainly by the general government sector and the other financial intermediaries sector, and, to a lesser extent, by credit institutions (in part these securities benefited from government guarantees). This occurred at the same

Chart 6 MFIs' transactions broken down by main asset categories

(EUR billions; three-month moving sums; seasonally adjusted)



Sources: BSI statistics and ECB calculations.

Notes: The latest observation is for April 2012. The data comprise the MFI reporting sector excluding the Eurosystem.

time as a significant reallocation within the portfolio whereby, on balance, euro area banks overwhelmingly purchased debt securities issued by the governments of their respective jurisdictions and sold securities issued by governments of other EU Member States.

NON-STANDARD MEASURES AND THE FLOW OF CREDIT TO THE ECONOMY

Since the beginning of the sovereign debt crisis the funding pressures on euro area banks have remained acute but have not materialised in the form of major bank deleveraging, as banks' total asset holdings have remained stable. The non-standard measures implemented by the Eurosystem are found to have alleviated some of the tensions on the funding side of euro area banks (see the box). The Securities Markets Programme has resulted in a partial transfer to the Eurosystem of the risk arising from the holding of some sovereigns' debt, which has eased the decline in bond prices and therefore limited the adverse valuation effect for banks holding such bonds. The two three-year LTROs, conducted by the Eurosystem in December 2011 and February 2012, have considerably mitigated

the rollover risks associated with bank debt. The non-standard measures also comprise the broadening of the Eurosystem's collateral policy. Changes in an asset's eligibility for use as collateral have alleviated some concerns regarding the refinancing of relatively illiquid assets.

In most euro area economies, banks have so far continued to provide credit to the economy in a context of weak demand, and deleveraging pressures have led to a reduction in the international exposure of the euro area banking sector. Nevertheless, in some countries, especially those with an EU/IMF financial assistance programme, access to bank financing has been hampered by credit supply constraints. Risks for the real economy remain acute, as the environment for the euro area banking sector remains challenging. Indeed, recently, renewed uncertainty regarding political reactions and worse than expected data releases has been accompanied by a worsening of the funding conditions of the banking sector, especially in some countries.

4 THE FINANCING OF EURO AREA NON-FINANCIAL CORPORATIONS

Since 2010 the impact on euro area NFCs of the sovereign debt crisis and its intensification in the second half of 2011 have been primarily reflected in an increase in heterogeneity in the financing environment across the euro area. This heterogeneity largely mirrors the divergent effects of the crisis on domestic government bond yields across the euro area which, in turn, implies substantially different effects propagated through the various channels discussed in Section 2. Nonetheless, larger euro area firms reacted increasingly flexibly to changes in the availability of bank loans, by tapping financial markets and drawing on trade credit to bridge potential financing gaps. This section sets out in greater detail the developments in the financing environment of euro area NFCs and the effects of the tensions emerging from sovereign bond markets.

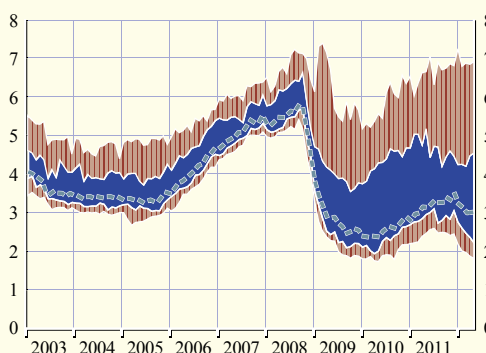
THE COST OF BANK FINANCING AND RISK DISCRIMINATION

As regards the pricing of corporate loans, composite euro area lending rates for NFCs had steadily increased from mid-2010 to the end of 2011, largely reflecting the impact of the sovereign debt crisis on benchmark interest rates and banks' funding conditions, as well as markets' repricing of risks. It was not until the beginning of 2012 that composite euro area lending rates for NFCs started to gradually decline in aggregate terms. This reduction in loan rates followed a decline in market interest rates and, particularly, the cuts in the key ECB interest rates in November and December 2011, as well as the non-standard monetary measures announced by the ECB in October 2011 which aimed at further alleviating euro area banks' funding conditions. These adjustments of aggregate bank retail rates to changes in monetary policy rates are broadly in line with the generally somewhat lagged pass-through of changes in key ECB interest rates, which hinges on a number of structural, financial and cyclical factors.⁵ Nonetheless, the aggregate decline in corporate

5 For further details, see the article entitled "Recent developments in the retail bank interest rate pass-through in the euro area", *Monthly Bulletin*, ECB, August 2009.

Chart 7 Composite MFI interest rates on loans to NFCs across euro area countries

(percentages per annum)



Sources: ECB and ECB calculations.

Notes: The composite rates are aggregated using outstanding amounts as weights. The latest observation is for May 2012. The brown shaded area denotes the range and the blue shaded area denotes the interquartile range. The dashed line refers to the euro area average.

lending rates in the first half of 2012 masks ongoing divergences in lending rate developments across countries (see Chart 7). No sizeable relief was observed for those countries most affected by the recent intensification of the sovereign debt crisis, for which the effects exerted through the propagation channels described above are particularly pronounced.

At the same time, the results of the bank lending survey generally suggest an increase in risk discrimination by banks in their pricing of loans, with increasing numbers of banks reporting a widening of margins on riskier loans compared with average loans. This is in line with the overall widening of the spread between bank lending rates for small loans and those for large loans to NFCs in the euro area as a whole since the beginning of 2011 (see Chart 8), following a temporary decline in the second half of 2010.⁶ The difference between the loan pricing conditions for small and large firms, which primarily results from the divergence in firm-specific risks, highlights the more adverse conditions faced by small corporations, which

were particularly pronounced in the countries most affected by the intensification of the sovereign debt crisis. In part, these spreads may also reflect the fact that small and medium-sized enterprises (SMEs) are more dependent on their respective domestic banking sectors and are subject to tighter credit conditions, compared with larger firms that have greater access to global financial markets.

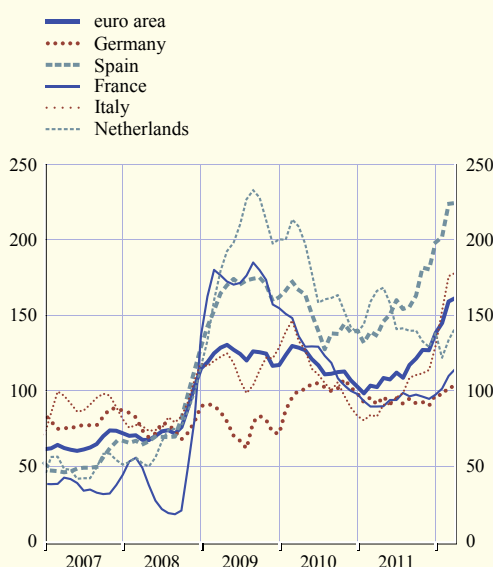
BANK-BASED FINANCING AND THE IMPACT OF DEMAND AND SUPPLY-SIDE FACTORS

As regards the volume of loans, bank lending to NFCs recorded only weak growth after a temporary recovery in the second half of 2010, with annual growth rates (adjusted for loan sales and securitisation) declining from 1.6% in January 2011 to 0.2% in May 2012 (see Chart 9). With the intensification of the sovereign debt crisis, the countries most adversely affected by sovereign market tensions recorded particularly weak loan developments (see also Chart 7 in

⁶ It is assumed that small loans are predominantly granted to SMEs and large loans mainly to large firms.

Chart 8 Spread between bank lending rates for small and large MFI loans to NFCs

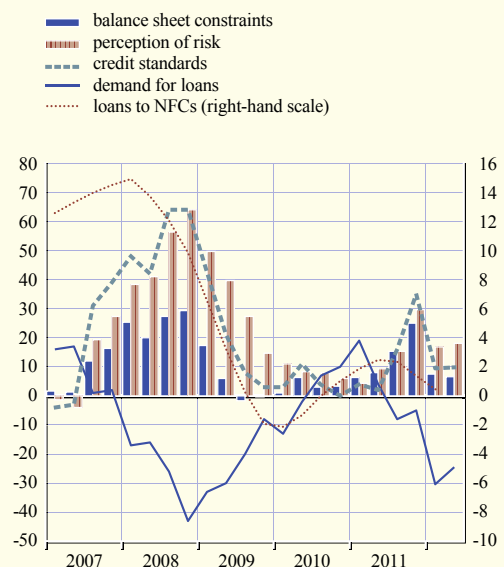
(three-month moving averages; basis points)



Sources: ECB and MIR Statistics.

Chart 9 MFI loans to NFCs and related bank lending survey indicators

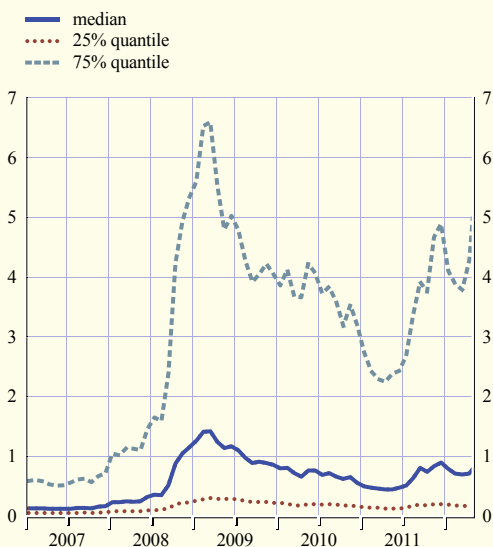
(net percentages; annual percentage changes)



Sources: ECB and the Eurosystem's bank lending survey.

Chart 10 Expected default frequency of listed euro area non-financial firms

(probability of default within the next twelve months; percentages)



Sources: Moody's KMV and ECB calculations.

Notes: The data are based on a sample of listed euro area non-financial firms. The latest observation is for May 2012.

the article entitled “Heterogeneity in euro area financial conditions and policy implications”). These developments were largely driven by firms’ external financing needs. After a short-lived recovery between mid-2010 and early 2011, euro area NFCs’ external financing needs remained subdued in 2011 and the first half of 2012. This was primarily on account of weak economic activity, increasing uncertainty in the economic environment and related weaker capital formation, which was amplified particularly in the second half of 2011 by the intensification of the sovereign debt crisis. The overall increase in uncertainty was accompanied by a sharp deterioration in markets’ assessments of firms’ credit risk, as measured, for instance, by expected default frequencies, which rose substantially during this period (see Chart 10). Across the larger euro area countries, this rise was particularly pronounced for Italian firms, while it was rather subdued for Dutch and German firms. At the same time, a higher propensity among firms to retain their earnings, by drawing on their cumulated cash reserves,

and towards overall corporate deleveraging, also played a role in firms’ weak demand for external funds.

In addition, on the supply side, in contrast to the low levels of net tightening of credit standards observed between 2010 and mid-2011, the substantial net tightening of credit standards by banks in the second half of 2011 (in the bank lending survey, on balance 35% of participating banks indicated a tightening in the fourth quarter of 2011 compared with 4% in the first quarter) contributed to overall subdued developments in euro area firms’ bank financing (see Chart 9). This was largely attributable to the intensification of the sovereign debt crisis, which had a substantial impact on banks’ refinancing conditions as well as on their balance sheet and capital positions and, ultimately, on their credit standards. Indeed, banks participating in the bank lending survey indicated that sovereign market tensions led to a substantial deterioration in their funding conditions in the last quarter of 2011 through balance sheet and liquidity management constraints, as well as through other, more indirect, channels. They also reported that vulnerabilities to risks stemming from the sovereign debt crisis have significantly contributed to the tightening of their credit standards.

These developments were partly mitigated at the beginning of 2012 by a significant drop in the number of banks reporting a net tightening of credit standards for corporate loans in the April and July 2012 rounds of the bank lending survey (falling, on balance, to 9% and 10% respectively). This decline was very closely related to the ECB’s non-standard measures as announced in October 2011, the two three-year LTROs and the widening of the collateral pool to include credit claims. In parallel, the adverse impact of the sovereign debt crisis on banks was reported to be less pronounced in the first quarter of 2012, although it regained momentum in the second quarter as tensions in euro area sovereign debt markets increased.

Similar, albeit more pronounced, developments are reported for SMEs, with a particular decline in small loans⁷ recorded in the second half of 2011. The decline was accompanied by a further perceived deterioration in the availability of bank loans between October 2011 and March 2012, as reported by SMEs in the latest round of the “Survey on the access to finance of small and medium-sized enterprises (SMEs) in the euro area” (20% in net terms reported a deterioration, up from 14% in the previous survey round), and is in line with the increase in spreads between small and large loans described above.⁸

MARKET-BASED FINANCING AND DISINTERMEDIATION

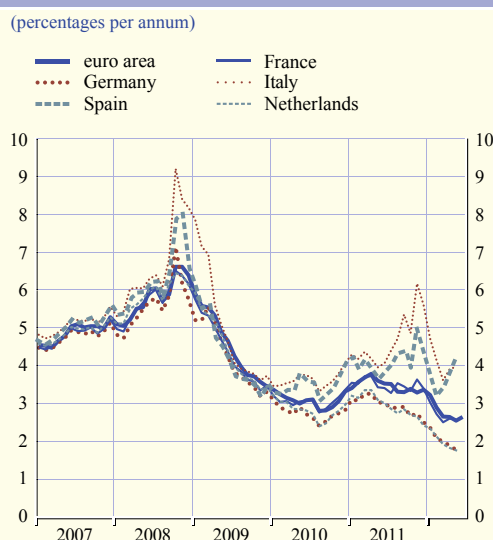
Turning to euro area firms’ debt financing via markets, the pricing of market-based debt has moderated as yields on investment grade NFC bonds have declined since November 2011 (see Chart 11). The decline was substantial and, initially, broadly based, and was accompanied by a reduction in the dispersion across the larger euro area economies, with corporate bond yields declining more sharply in Italy and Spain than

in Germany and the Netherlands. Nonetheless, after the first quarter of 2012 divergences widened again across the larger euro area countries, with yields declining at the aggregate level but rising for Spain and Italy amid mounting sovereign market tensions. Broadly similar developments were observed for the non-investment grade segments of the corporate bond market – albeit for these segments the cost of market debt was significantly higher. Moreover, for these segments, the rise in costs was particularly pronounced for firms in Spain and Italy. Indeed, in the context of a sluggish economic outlook, there is potentially a high degree of heterogeneity in the spillover risk at the country level, especially in the case of spillovers of country-specific sovereign risk to the NFC sector, even though the latest non-standard measures announced by the ECB have limited the threat of sizeable credit curtailments in the euro area.

There are indications that trade credit partly cushions firms’ financing needs in periods of reduced access to bank loans. Moreover, listed companies have accumulated sizeable cash reserves, particularly in Germany and France, which may reflect in part precautionary cash holdings as companies perceive banks to be less able or willing to provide credit in times of financial crisis.

Concerning the volumes of firms’ market debt financing, after strong net debt issuance activity in the first half of 2010, a gradual slowdown was recorded in parallel with a weakening in the decline in bank lending to firms (see Chart 12). At the beginning of 2011 the slowdown in net debt issuance by euro area firms continued, while cumulated net flows of bank lending to firms remained in positive territory. Conversely, at the turn of 2011 debt issuance rebounded, while cumulated net lending by euro area banks dropped. Overall, as shown in Chart 12, since the

Chart 11 Cost of market debt – investment grade NFC bonds



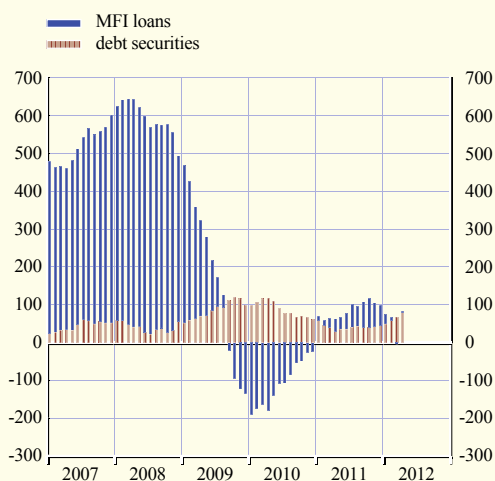
Sources: Merrill Lynch Global Index and ECB calculations.
Notes: Data comprise the weighted average based on outstanding volumes. The latest observation is for May 2012.

7 Small loans can be seen as an approximation for loans to SMEs.

8 A comprehensive report, detailed statistical tables and additional breakdowns were published on 27 April 2012 in the “Statistics” section of the ECB’s website under Monetary and Financial Statistics/Surveys/Access to finance of SMEs.

Chart 12 Euro area firms' external debt financing via banks and markets

(cumulated net flows over twelve months)



Sources: ECB and ECB calculations.

start of the financial crisis and particularly since the second half of 2009 a closer substitutional link can be observed between developments in bank loans to euro area firms and in the debt financing of euro area firms via markets. This link suggests that large euro area firms have increasingly drawn on markets for their debt financing, with access to bank financing becoming increasingly difficult. These signs of disintermediation were again apparent at the turn of 2011, with the sovereign debt crisis hitting banks particularly hard, further impairing their ability to lend. More recently, however, the substantial decline in banks' net tightening of credit standards for loans to enterprises following the three-year LTROs suggests less pressure from loan supply conditions. This may in part be reflected in actual loan growth, albeit with some time lag, depending on the impact of more recent countervailing pressures stemming from sovereign debt market tensions.

Overall, euro area firms' needs for debt financing are likely to remain somewhat contained in the short run, on account of both a fragile economic environment and a higher propensity among firms to retain their earnings, bolster their cash holdings and deleverage their balance sheets.

At the same time, the financing conditions of riskier borrowers seem to be particularly responsive to developments in the sovereign debt crisis. Moreover, in response to changes in the availability of bank loans, euro area firms are likely to react increasingly flexibly, by tapping financial markets and drawing on trade credit to bridge potential financing gaps.

5 THE FINANCING OF EURO AREA HOUSEHOLDS

THE SOVEREIGN DEBT CRISIS AND HOUSEHOLD FINANCING

As in the case of NFCs, the sovereign debt crisis and, in particular, its intensification in mid-2011 has primarily increased the heterogeneity in the financing environment of households across euro area countries, rather than significantly affecting the aggregate level of the cost or the volume of financing for households in the euro area as a whole. This is largely the result of the divergent effects of the sovereign debt crisis on government bond yields across the euro area, which, in turn, implied substantially different effects propagating through the various channels discussed in Section 2. Most importantly, the aggregate effects were mitigated by supportive standard and non-standard monetary policy measures implemented by the ECB and the Eurosystem as a whole.

At the same time, when comparing the impact of the sovereign debt crisis on the financing conditions of households with the impact on NFCs, a number of issues should be borne in mind. First, euro area households rely much more heavily on banks for their external financing compared with NFCs.⁹ Second, the market for bank lending to households is significantly less integrated than the market for lending to NFCs, although loan securitisation markets, which are mainly concerned with loans to households for house purchase, have increased the level of integration.¹⁰ Nevertheless, the

9 See the article entitled "The external financing of households and non-financial corporations: a comparison of the euro area and the United States", *Monthly Bulletin*, ECB, April 2009.

10 See the Eurosystem report entitled "Financial integration in Europe", April 2012.

sovereign debt crisis has had heterogeneous effects on the financing environment of euro area households through a number of channels. The latter include channels which affect lending conditions (price and non-price conditions) and loan volumes offered by banks as a result of diverse developments in government bonds yields across euro area countries. Indeed, as discussed above, government bonds yields tend to be highly correlated with bank bond yields and, consequently, with lending rates applied by banks on loans to households. This correlation largely reflects the pass-through of changes in bank funding conditions to lending rates. Other channels operate via changes in the demand for credit. They include, for example, wealth effects stemming from valuation changes affecting the nominal value of government bonds held by households.

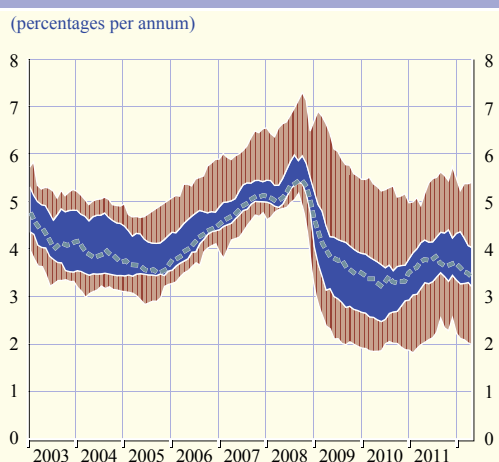
DEVELOPMENTS IN HOUSEHOLD FINANCING SINCE 2010

Since 2010 aggregate euro area household lending rates and the growth rate of loans have not changed markedly. For example, composite lending rates on loans to households for house

purchase have fluctuated between 3.3% and 3.9% since early 2010 (see Chart 13). The annual growth rate of loans to households (adjusted for loan sales and securitisation) increased gradually from around 2.0% in early 2010 to around 3.0% between mid-2010 and mid-2011, then gradually declined to stand at 2.0% at the end of 2011 and at 1.3% in May 2012 (see Chart 14). At the same time, the apparent relative stability of euro area aggregate levels of household lending rates and loan growth masks an increase in heterogeneous developments across countries. However, although the degree of cross-country heterogeneity has increased since 2010, it is still significantly lower than the level observed before the crisis, especially in the period 2004-06.

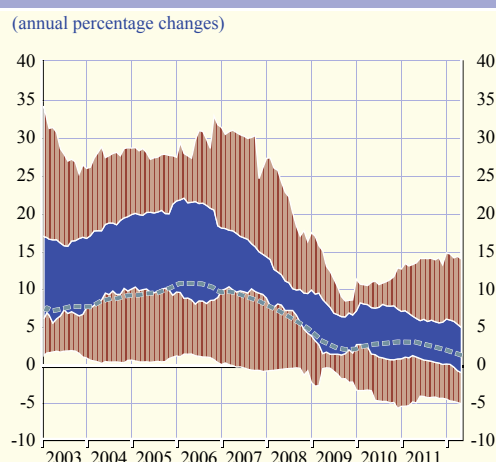
A notable development in this respect is that the relative contributions of different euro area countries to euro area household loan growth have changed markedly in recent years. Household loan growth, in particular in Spain and some of the countries with EU/IMF financial assistance programmes, was characterised before the financial crisis by double digit growth

Chart 13 Composite MFI interest rates on loans to households for house purchase across euro area countries



Sources: ECB and ECB calculations.
Notes: The composite rates are aggregated using outstanding amounts as weights. The latest observation is for May 2012. The reddish brown shaded area denotes the range and the blue shaded area denotes the interquartile range. The dashed line refers to the euro area average.

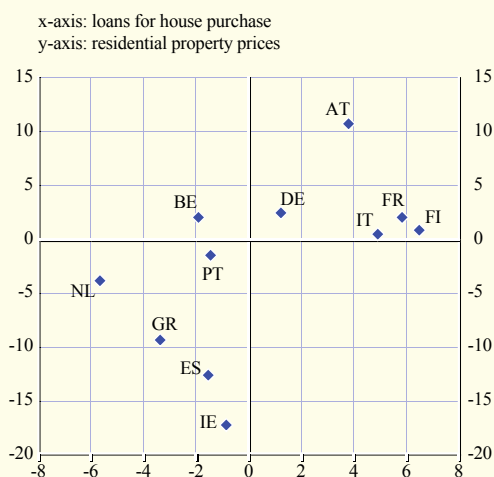
Chart 14 MFI loans to households across euro area countries



Sources: ECB, BSI and ECB calculations.
Notes: Data are adjusted for securitisation and it is assumed that all private sector loans securitised before 2009 are loans to households. The latest observation is for May 2012. The reddish brown shaded area denotes the range and the blue shaded area denotes the interquartile range. The dashed line refers to the euro area average.

Chart 15 MFI lending for house purchase and house prices in euro area countries

(annual growth rates)



Source: ECB.

Notes: The data refer to the first quarter of 2012, except for Belgium (fourth quarter of 2011) and Italy (second half of 2011).

rates, reflecting housing market booms. Those growth rates have declined markedly since 2008 and became negative in 2010. The declines largely reflect the need to correct past excesses and are in line with house price developments in those markets (see Chart 15). By contrast, since 2010 household loan growth in the euro area has increasingly been driven by the contribution of countries that previously experienced more moderate loan growth, such as France, in part benefiting from government support schemes. Furthermore, in Germany, while the annual growth rate of residential property prices is currently high from a historical perspective, the level is not extraordinary when considered from a euro area perspective, or when assessed against the level of lending for house purchases.

In addition to these rebalancing effects in the composition of euro area household loan growth, the relative stability of euro area household lending rates and loan growth can be associated in part with the impact of the non-standard measures adopted by the ECB throughout the crisis, which have, to some extent, helped to shield households in the euro area from the

negative effects of distortions in the monetary policy transmission mechanism.¹¹ As a result, with a few exceptions mainly comprising the countries with EU/IMF financial assistance programmes, the effect of the distortions in the monetary policy transmission mechanism on bank lending to households has been limited as regards both loan volumes and interest rates.

At the same time, the intensification of the tensions in sovereign debt markets in the second half of 2011, which increasingly hampered euro area banks' access to market-based funding, led to an increased risk of a curtailment of lending to households by credit institutions in a number of euro area countries. This risk appeared to start to materialise towards the end of 2011 and was reflected, for example, in the net redemptions of MFI loans to households observed in December 2011. However, the new non-standard measures announced in the last quarter of 2011, and particularly the three-year LTROs, have alleviated funding pressures on euro area credit institutions, thereby helping to reduce the risk of disorderly deleveraging by the banking sector.

HOUSEHOLD FINANCING AND THE IMPACT OF DEMAND AND SUPPLY-SIDE FACTORS

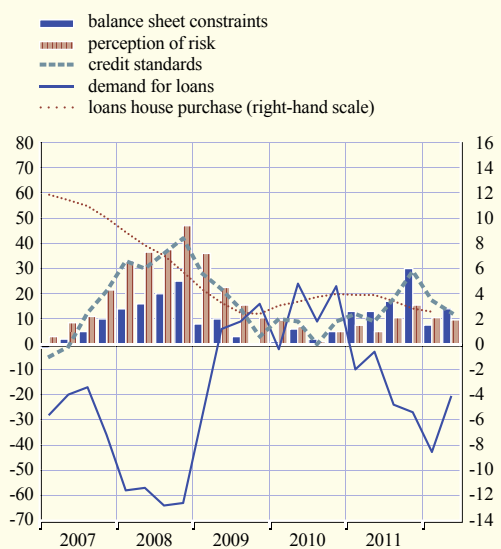
Even when the need to correct past excesses in loans to households is taken into account, household loan growth is currently relatively weak by historical standards. This is likely to reflect both weak credit demand and constraints on the supply side of bank credit.

While quantifying the strength of various supply and demand forces related to loan developments is a difficult task and associated estimates are surrounded by high uncertainty, qualitative evidence can be obtained from indicators derived from the bank lending survey, which provides information on loan demand and the credit standards applied by banks. Net tightening of credit standards reported in the bank lending survey can be seen, as a first approximation, as an

¹¹ See, for example, the article entitled "The ECB's non-standard measures – impact and phasing-out", *Monthly Bulletin*, ECB, July 2011.

Chart 16 MFI loans to households for house purchase and related bank lending survey indicators

(net percentages; annual percentage changes)



Sources: ECB and the Eurosystem's bank lending survey.

indicator of supply-side influences on loan developments, although this series comprises a number of different factors (“perceptions of risk”, “balance sheet constraints” and “competition”) some of which – such as the “perceptions of risk” factor – may also be influenced by demand conditions. By contrast, the “balance sheet constraints” factor can be interpreted as a “pure” supply-side factor (in the sense that it serves as a proxy for the “bank lending channel” of monetary policy transmission). The evidence suggests that, after declining in 2009 and in the first half of 2010, the net tightening of credit standards increased significantly, especially in 2011, as the sovereign debt crisis intensified. The increases in 2011 were mainly driven by banks’ concerns about balance sheet constraints, both for loans for house purchase (see Chart 16) and consumer credit. This indicates that “pure” supply-side constraints may have accounted for a non-negligible part of the weakness observed in bank lending activity. Although the increase in the net tightening of credit standards was less marked for consumer credit, it should be kept in mind that the growth of such loans has been negative for much of the past three years. At the

same time, the importance of loan demand developments is confirmed by the respective bank lending survey indicator, which fell sharply in 2011 and in the first quarter of 2012, with a smaller contraction recorded in the second quarter of 2012. Other, complementary, sources of information, such as the European Commission’s consumer survey, as well as model-based estimates, confirm that loan supply factors are likely to have exerted an adverse impact on household loan growth since 2010, but also that weak loan demand has been a substantial dampening factor.¹² The weakness in household demand for credit also explains the relative stability and moderation in household financing conditions observed since 2010.

Looking ahead, on the one hand the need to correct past excesses in a number of countries is still an important factor which is likely to dampen euro area household loan growth. On the other hand, the full impact on household lending rates and loan growth of the most recent non-standard measures is likely to take several months to materialise. However, for the measures to be fully effective, a number of conditions must be met, notably a recovery in loan demand, with sustained improvements in the overall economic environment and a permanent reduction in economic uncertainty, linked, among other factors, to the solvency of euro area sovereigns and sustainable improvements in banks’ capital positions.

6 CONCLUSIONS

Since the onset of the financial crisis in 2007 the euro area has been confronted with a series of adverse financial shocks which have affected the functioning of credit and financial intermediation in the region. The emergence of the sovereign debt crisis at the beginning of 2010 compounded the vulnerabilities in the euro area banking system and led to severe tensions in various market

¹² See, for example, the evidence reported in the box entitled “Factors affecting lending to the private sector and the short-term outlook for money and loan dynamics”, *Monthly Bulletin*, ECB, April 2012.

segments, ultimately threatening to constrain the provision of financing to households and firms. The multidimensional nature of the current crisis has therefore complicated the analysis of financing conditions.

The assessment of financing conditions in the euro area against the background of the sovereign debt crisis requires the examination of several related aspects. First and foremost, funding and balance sheet conditions in the banking system constitute a key determinant of the supply of credit to the economy. Since 2010 the tensions in government bond markets have led to significant spillovers to bank liquidity risk and funding costs and have reinforced the deleveraging forces operating in many jurisdictions. There are strong interdependencies between banks and governments through both balance sheet and contingent claim exposure, which amplify the macroeconomic propagation of banking or sovereign market tensions. At the current juncture, the supply of bank credit remains highly vulnerable to a resurgence of tensions in sovereign debt markets.

The second aspect is persistent cross-country heterogeneity: owing to the fragmentation of some market segments and the setback to European banking sector integration, euro area-wide indicators may mask country-specific developments and impairments in the monetary policy transmission channels, with potentially severe consequences for the real economy in those countries.

The third aspect which warrants particular attention in the assessment of financing conditions during the sovereign debt crisis is the identification of demand and supply-side factors in credit intermediation against the background of the associated real-financial interactions. NFCs and households in a number of euro area countries will have to deleverage in order to reduce debt over time in order to correct past excesses. However, in combination with the related deleveraging needs of banks, this could lead to self-reinforcing loops. Large firms with access to markets and other financing can

circumvent bank lending constraints, however, it is considerably more difficult for households and small enterprises to do so.

The fourth aspect is the impact of non-standard measures adopted by the ECB and the Eurosystem as a whole: the spillovers of the sovereign debt crisis to the euro area financing environment have been significant and have led to impairments of the monetary policy transmission channel at a number of stages in the financial intermediation chain. This led to the ECB's decisions to implement non-standard monetary policy measures. The measures have clearly helped to avoid disorderly deleveraging, with potential negative consequences for the economy as a whole, and have thus shielded to some extent households and NFCs from the effects of the crisis. At the same time, the measures need to be accompanied by government action to address the underlying causes of the crisis.