Financial integration and fragmentation in the euro area

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Introduction

Recent decades have witnessed a rapid and intensive process of economic and financial integration throughout the world. Financial integration has outpaced integration via international trade (Lane and Milesi-Ferretti, 2003; UNCTAD, 2012), partly as a result of capital liberalisation, deregulation and financial innovation. Between 1970 and 2006, cross-border financial assets increased six-fold as a percentage of global GDP (Lane and Milesi-Ferretti, 2008), doubling between 1996 and 2006 (Schindler, 2009). In the euro area, the integration process was even more intensive as a result of the Single Market and, subsequently, the single currency and the ensuing policy and regulation. In fact, financial integration should be seen as a fundamental pillar of a monetary union, essential to safeguard the adequate transmission of monetary policy in all countries of that union. The need to ensure financial integration is confirmed in the Eurosystem's mission statement: "We in the Eurosystem have as our primary objective the maintenance of price stability for the common good. Acting also as a leading financial authority, we aim to (…) promote European financial integration"[1].

However, the financial and economic crisis which emerged in August 2007 and spread in 2008 and 2009 brought the global integration process to a halt: together with the decline in international trade, international (interbank) capital flows dried up. In the euro area, the institutional framework and the degree of integration achieved at that time could not prevent the countries of the monetary union from experiencing similar developments: the financial integration process, which had hitherto been most evident on the interbank and bond markets, largely retreated behind national borders. During the sovereign debt crisis, this home bias became more marked, leading to a reversal in net capital flows within the euro area; as a result, countries that were net importers of capital adjusted their external positions. This financial fragmentation phase also threatened the efficiency of monetary policy, forcing the Eurosystem to adopt unconventional measures (Cœuré, 2014).

The literature traditionally highlights the advantages of financial integration, as integration opens the way to smoother market operation and therefore engenders efficiency gains. At the same time, increased financial integration may accentuate fragility and instability if markets operate imperfectly – e.g. in the case of extreme exposure to risks, moral hazard, liquidity shortages, imperfect institutional structures or underestimation of risks. Consequently, it is possible for financial integration to give rise to extreme situations, such as sudden stops. Indeed, recent events have demonstrated this potential duality, both at global level and in the euro area, where legal and institutional reforms have facilitated financial integration leading, in practice, to a strong increase in capital flows between countries. As a result, from its establishment up to 2007, the euro area witnessed rapidly growing financial integration, evident in terms of both volume and prices. During that period, absolute cross-border exposures, particularly in the banking sector, increased considerably, causing a significant rise in net exposures at the country-specific level, partly as a result of the current account

imbalances facilitated by financial integration. In terms of prices, integration was reflected in a strong convergence of financial asset prices, especially interest rates.

The imperfections in the institutional framework and the marked repricing of risks which accompanied the start of the crisis reversed the trend towards growing financial integration; at the international level, that triggered a process of financial disintermediation, with a reversal of capital flows and serious financing problems for some countries in the euro area. Although those countries tackled some of their macroeconomic and financial imbalances, they still have a substantial net external debt, and there remains considerable fragmentation of bank interest rates along national borders.

This article deals with these questions, first by defining the concept of financial integration and examining its costs and benefits. Next, it considers recent developments in the financial integration and fragmentation process within the euro area from two angles – namely in terms of volumes and prices. It thus attempts to identify certain structural/underlying factors in the ongoing fragmentation of the financial markets. The article concludes with a description of the policy measures applied in recent years to halt the fragmentation process and permit a return to financial integration, albeit in a different and more robust form than that seen in the first ten years of the third stage of EMU.

1. Financial integration: definitions

Financial integration can be defined from an institutional and legal point of view (*de jure*) or on a factual basis (de facto). According to Baele *et al.* (2004), a financial market is integrated *de jure* if "all potential market participants with the same relevant characteristics:
– face a single set of rules when they decide to deal with [a given set of] financial instruments and/or services;
– have equal access to the above-mentioned set of financial instruments and/or services; and
– are treated equally when they are active in the market."

The *de jure* criteria are relevant for analysing policy because they indicate the extent to which national policies facilitate (or impede) cross-border capital movements. In principle, de *jure* financial integration could therefore be regarded as a precondition for *de facto* financial integration, and the two types of criteria are likely to be closely linked.

In the European context, and especially in the euro area, *de jure* financial integration between countries increased with the more general process of economic integration in the European Union and EMU. Progress towards a Single Market in the European Union accelerated in the 1980s and 1990s[1]. In 1985, the Delors Commission proposed almost 300 measures for completing the Single Market, which led to the signing of the Single European Act (SEA) in 1986. As a result of that Act, the European Single Market was established at the beginning of 1993, with cross-border freedom of movement for persons, goods, services and capital. The launch of the Single Market coincided with the Maastricht Treaty that determined the basis of the single currency as the next stage in European integration. The creation of the monetary union (which took effect in 11 Member States in 1999) was a major milestone on the road to more integrated financial markets, eliminating the exchange rate risk within the euro area.

Since then, European policy has continued to aim at a more open, integrated market. One example of a significant achievement was the creation of the Single Euro Payments Area (SEPA), that has helped to reduce the cost of transferring money in euros between euro area countries by 90 % since 2001 (EC, 2006).
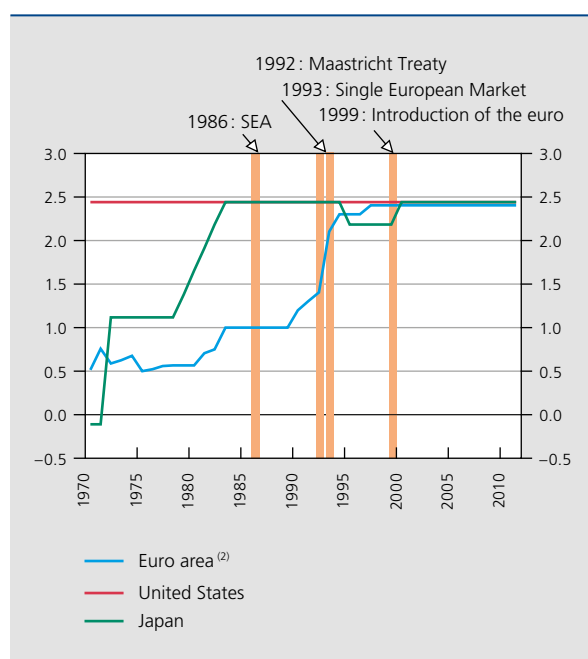
Sources: Chinn and Ito (2006), Eurostat.
(1) Index between –2.5 (closed capital markets) and 2.5 (totally open capital markets).
(2) First 12 EMU Member States, excluding Luxembourg. GDP-weighted average.

(1) Previously, in 1972, the collapse of the Bretton Woods system had already led to an easing of restrictions on capital mobility at a more global level.

These institutional measures made the euro area into a closely integrated financial market from a legal point of view, with a level of integration comparable to that in the United States and Japan. That perception is supported by various indicators of *de jure* integration, such as the Chinn-Ito index, which aims to measure the intensity of capital controls, in so far as that intensity is connected with the existence of other restrictions on international transactions as well as restrictions on the balance of payments financial account[1]. When that index is applied to the euro area Member States, it shows the progress towards the Single (financial) Market and the growing openness to global financial markets. In tandem with the process leading to the introduction of the single currency, the euro area countries achieved a degree of openness comparable to that of the most open economies in the world.

However, the fact that a country has adopted measures to facilitate financial integration does not necessarily mean that capital will actually flow in and out of the country, nor does it say anything about the degree to which that will happen. Many other variables play a role, relating primarily to the financial market situation, risk perception, etc. *De jure* integration can therefore be seen as a necessary condition, but one that is not sufficient for *de facto* integration.

De facto measures of financial integration can be divided into volume indicators – which measure international capital flows and the stock of cross-border financial assets and liabilities – and price indicators, which measure integration on the basis of a comparison of risk-adjusted yields on different markets.

Over the last decades, according to volume indicators, the financial integration of the main economies has increased considerably, although that trend has certainly not been uniform over time, as is evident from the volatility and the drying up of international capital flows during the financial crisis[2]. Measured through the stock of external assets and liabilities, financial integration increased since 1999 most strongly in the euro area, namely from 164 % of GDP to 405 % of GDP in 2013Q3. During that period, the financial openness of the United States and Japan also more than doubled. That trend is attributable mainly to financial liberalisation, whereby capital controls were

gradually lifted more or less entirely (*de jure* integration). In addition, the development of new financial instruments and trading platforms and more intensive trade flows between economies also fostered integration. The financial integration evident in the euro area was given an additional boost since 1999 by the introduction of the single currency, partly due to the resulting closer trade links between the euro area Member States, and partly as a result of the elimination of the exchange rate risk within the monetary union (see Lane, 2010; Waysand *et al.*, 2010).

In general, the level of financial integration differs strongly between the various economies. A high degree of financial integration is often associated with a large financial (banking) sector (in % of GDP), high output per capita, and great trade openness (Lane and Milesi-Ferretti, 2008). Thus, the relatively substantial weight of the banking sector in Europe explains why financial openness there roughly doubles the level in the United States. For the same reason, the outstanding amount of external assets and liabilities in the United Kingdom in mid-2013 amounted to 1 341 % of GDP.
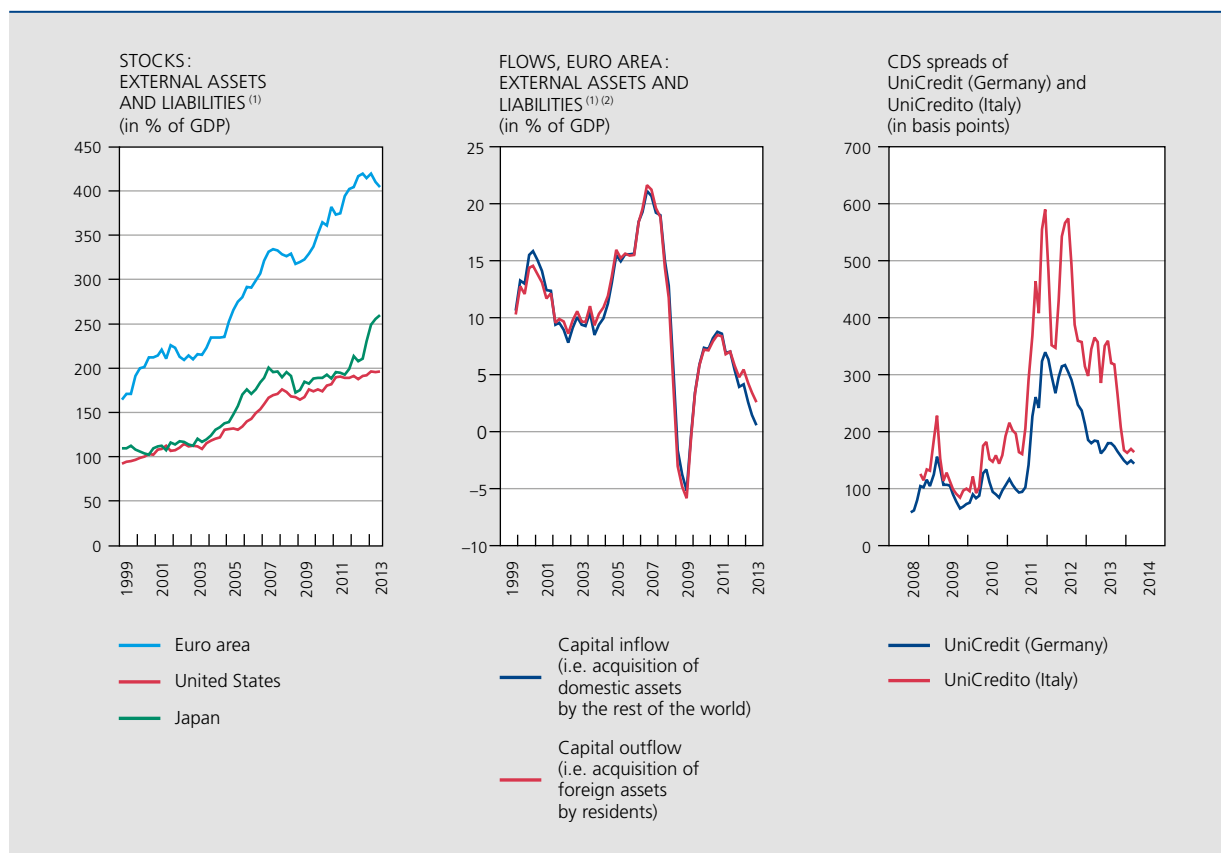
However, an analysis based on international capital flows reveals that financial integration in the euro area has declined since the financial crisis. During the crisis, international capital flows were highly volatile and exhibited a boom/bust profile. There was an international slowdown in (gross) capital flows which, together with the deteriorating macroeconomic fundamentals, must also be seen against the backdrop of a general repricing of risks by the financial system worldwide. In the euro area, the average annual capital inflow and outflow, which up to 2007 amounted to roughly 13 % of GDP, shrank to less than 5 % of GDP thereafter. In 2009 there was actually a period of financial regression, with net sales of foreign claims by euro area residents and net sales of claims on euro area counterparties by non-residents.

Price indicators (such as interest rates) confirm the weakening of *de facto* financial integration apparent on the basis of capital flows. Since the outbreak of the financial crisis, the yields on financial products which, in principle, present comparable risks have in fact diverged. This issue will be discussed in more detail in section 3.3 of this article, but it is illustrated here by the credit default swap (CDS) spreads on bonds issued by UniCredito bank in Italy as opposed to those of HypoVereinsbank in Germany, which has been part of the same UniCredit group since 2005. During the financial crisis, and especially at the peak of the sovereign debt crisis, there was a significant divergence between these CDS spreads. Although there are objective reasons which explain why the market took a different view of the risks associated with these two

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CHART 2   FINANCIAL INTEGRATION: *DE FACTO* INDICATORS

STOCKS:
EXTERNAL ASSETS
AND LIABILITIES [1]
(in % of GDP)

FLOWS, EURO AREA:
EXTERNAL ASSETS AND
LIABILITIES [1] [2]
(in % of GDP)

CDS spreads of
UniCredit (Germany) and
UniCredito (Italy)
(in basis points)

— Euro area
— United States
— Japan

Capital inflow
(i.e. acquisition of
domestic assets
by the rest of the world)

Capital outflow
(i.e. acquisition of
foreign assets
by residents)

— UniCredit (Germany)
— UniCredito (Italy)

Sources: BIS, EC, Thomson Reuters Datastream, ECB.
(1) Excluding financial positions/flows within the economic areas. For Japan and the US on the basis of the national financial accounts (flow of funds); for the euro area, on the basis of the balance of payments of the euro area as a whole.
(2) Four-quarter cumulated flows.

parts of the same banking group (e.g. differing exposures to the Italian and German government respectively, and the different legal framework applicable to the two entities), that divergence nevertheless seems attributable to (deeper) disruptions in the *de facto* financial integration in EMU.

2. Benefits and costs of financial integration

The trend towards increasing financial integration in the leading economies in recent decades is underpinned to some extent by the considerable benefits of financial integration which are also pointed out by the economic literature:

– better capital allocation: in financially integrated economies there are no capital restrictions, and thus capital can move freely towards projects offering the highest potential return. According to the models underlying neoclassical growth theory (see for example

Mankiw *et al.*, 1992), this should cause capital to flow from capital-abundant economies with low productivity to capital-poor economies with high productivity until the marginal return on capital is equalised. That process generates faster growth in the economies receiving the capital until convergence is reached.

– risk-sharing: financial integration can loosen the link between expenditure (consumption and investment) and income, both on a time and country dimension. In other words, countries can record a current account surplus or deficit, enabling them to cushion the impact on expenditure of shocks affecting their national income. In addition, the expanding choice of investment opportunities (abroad) increases the diversification of the financial assets of residents, making their consumption less volatile and less sensitive to shocks affecting domestic income (Jappelli and Pagano, 2008).

– other advantages: increased financial integration is also often accompanied by greater development of the domestic financial sector and markets, heightening

competition and cutting the costs of financial intermediation (Levine, 2001). In a monetary union, a higher level of financial integration also promotes the smooth and uniform transmission of monetary policy, and vice versa. Finally, in less stable economies, the openness of the capital markets exposes domestic policy to external market discipline, which could foster increased stability (Obstfeld, 1998).

These advantages should thus ensure that strong financial integration is accompanied by higher growth of investment and activity and lower volatility, particularly for consumption. However, there is no consensus on this in the empirical literature. Eichengreen (2001) and Kose *et al.* (2006) have reviewed the empirical studies. They conclude that, alongside the extensive literature stressing the advantages of financial integration, some studies are unable to demonstrate the theoretical benefits and, on the contrary, they indicate that financial openness can actually have a detrimental effect on prosperity and economic stability. The recent financial crisis and earlier balance of payments crises, which were often specific to fast-growing emerging economies, have indeed revealed that increasing financial integration is no panacea.

Part of the theoretical literature confirms that financial integration may also have considerable disadvantages. They are generally caused by market failures, such as incomplete financial markets (Stiglitz, 2004), which feature a lack of transparency, asymmetric information and transaction costs. Disadvantages may also emerge sooner in the absence of a sound institutional framework and adequate supervision over the financial sector in particular (Edison *et al.*, 2002), given the importance of that sector in channelling foreign resources to the real economy. The main potential disadvantages mentioned in the literature are:
– sub-optimal capital allocation : in practice, market imperfections mean that capital is not always allocated in the optimum way, and – contrary to theoretical predictions – the flow is sometimes reversed (namely from capital-poor to capital-abundant economies), as in the case of capital flowing from China to the United States (known as the "Lucas paradox"; Lucas, 1990). Some authors point out that this is because the financial sector in China is less developed than that in the United States (Caballero *et al.*, 2008). Trade distortions may also cause capital to flow towards activities in which countries have no comparative advantage

(Eichengreen, 2001). Although capital flows may stimulate investment and growth in the short term, the effect on long-term growth depends on the type of investment being funded. Concentration and excess investment in certain activities may inhibit long-term growth, e.g. if strong investment in branches geared to the domestic market (such as construction) does not lead to a corresponding increase in the country's export potential, resulting in ever-increasing (external) imbalances.
– volatile capital flows : international capital flows often behave in a pro-cyclical manner, particularly capital flows based on short-term instruments. In the case of a (growing) external imbalance, this can lead to highly volatile capital movements with the risk of a "sudden stop" (Calvo, 1998) caused by an abrupt change in the risk perception regarding the economic fundamentals, so that the country is forced to correct its external deficit, possibly at the expense of economic growth. The composition of the capital flow can in itself indicate the risk of a sudden stop, e.g. if there is a large share of short-term debt [1]. In such cases, if investors have asymmetric information on economic fundamentals, that can lead to herding behaviour (Banerjee, 1992), further exacerbating the sudden stop.
– other disadvantages : while a larger financial sector has various advantages, it also has its drawbacks, as became apparent at the time of the financial crisis. A larger financial sector is in fact often accompanied by increasingly complex financial products, implying a contagion risk. In addition, there is a greater chance of institutions which are "too big to fail", so that their behaviour reflects moral hazard. Finally, large and volatile capital flows may hamper monetary policy. For example, they may generate rapid monetary expansion (if the inflow is not sterilised), leading to inflationary pressure and real exchange rate appreciation, which could further exacerbate the external imbalances.

Before the financial crisis, and even before the introduction of the euro, the euro area economies displayed a considerable degree of risk-sharing in the sense that national savings and investments in the various countries were disconnected, as is evident from the low correlation coefficient between these two aggregates (<0.3). This risk sharing was far less active among the other G20 countries. The euro area countries thus enjoyed a significant advantage of financial integration, namely the opportunity to record a current account deficit or surplus (savings < investment or savings > investment), breaking the link between investment and domestic savings. In the euro area, countries with a relatively low per capita GDP generally recorded an external deficit, financed largely by the economies with an external surplus, which stimulated

(1) Debt financing generally proves far more volatile than, say, capital flows based on direct investment. Moreover, in the case of the latter, there is a lower risk of inappropriate allocation since the investor is more closely involved in the project. Consequently, this type of investment is less sensitive to asymmetric information between residents and non-residents (Kirabaeva and Razin, 2010).

CHART 3

CHART 3 CORRELATION[1] BETWEEN NATIONAL SAVINGS[2] AND TOTAL INVESTMENT[2] IN EURO AREA COUNTRIES AND THE G20
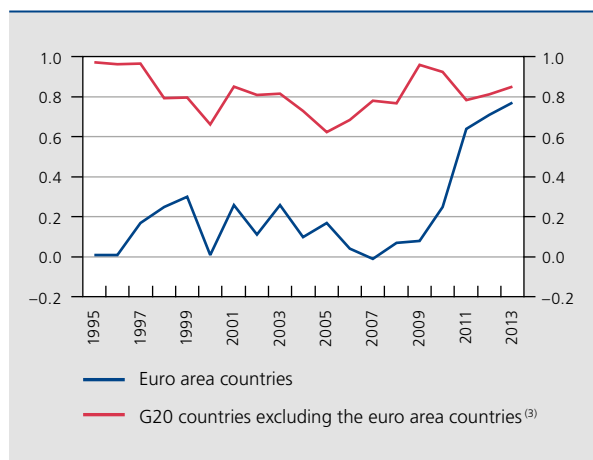
Sources : IMF, NBB.
(1) According to Feldstein and Horioka (1980), a high (low) correlation indicates low (high) capital mobility between countries.
(2) In gross terms and at current prices, in % of GDP.
(3) Argentina, Australia, Brazil, Canada, China, India, Indonesia, Japan, Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, United Kingdom and United States.

3. Developments in the euro area

This chapter takes a more detailed look at financial integration in the euro area, on the basis of both volume criteria – distinguishing between gross and net capital flows – and price indicators (interest rates). Gross capital flows and the corresponding positions indicate the absolute level of financial integration in the euro area. These data can also be used to investigate the structure of integration in terms of both sectors and financial instruments. Net capital flows are also relevant because they are linked to macroeconomic imbalances, particularly the current account balance. They thus shed light on the interaction between macroeconomic imbalances and financial integration. They also indicate the potential risks associated with financial integration. A change in these flows, especially a change of direction, may in fact force an economy to make substantial, abrupt adjustments. Finally, integration can also be assessed on the basis of a comparison between the risk-adjusted returns, as any discrepancies are a sign of a lack of integration (fragmentation).
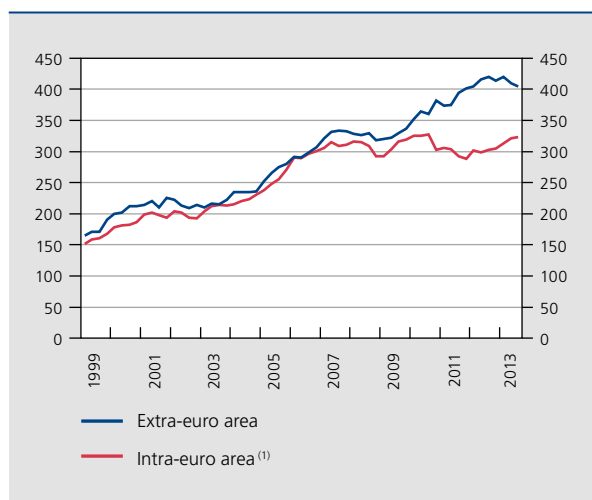
3.1 Gross capital flows

Apart from the increase in the assets and liabilities of the euro area as a whole in relation to the rest of the world (extra-euro area), financial flows among partners in the euro area (intra-euro area) also recorded substantial growth[2]. Financial integration increased particularly strongly during the initial years of monetary union : between 1999 and 2007, financial openness doubled both externally and within the euro area.

However, from 2007 onwards, and hence from the start of the financial crisis, financial integration in the euro area stalled, in contrast to the integration in relation to counterparties outside the euro area, which, after stagnating for two years (in 2008 and 2009), expanded further. The stabilisation in the euro area was linked to the increased uncertainty and loss of confidence between lenders and borrowers, particularly on the interbank market. Within the euro area, risk repricing mainly had implications for the deficit countries, which could no longer count on net flows of funding from the other euro area countries ; that led to a rebalancing of current account balances within the euro area and depressed gross capital flows, as is evident from the reduction in (financial) risk-sharing between the euro area countries.

Developments in financial integration are largely driven by the financial sector (the banks), in view of the role of that sector as an (international) financial intermediary. The expansion of the international assets of the banks is an

economic growth in the deficit countries and was in line with the usual convergence mechanisms.

Since the financial crisis, however, this risk-sharing has declined sharply, as indicated by the much closer correlation between investment and savings across the various countries of the euro area. Thus, the "Feldstein-Horioka paradox" also applies to the euro area. Feldstein and Horioka (1980) reported a close correlation between savings and investment within national borders and interpreted it as defective risk-sharing and limited capital mobility between countries[1]. Measured in that way, risk-sharing between the euro area economies is indeed currently close to the modest level found for the G20 countries (excluding the euro area countries), which raises concerns given that, owing to the single currency, a monetary union requires adequate risk-sharing via the goods, labour and capital markets.

(1) In this context, a lack of risk-sharing between economies is reflected in a balanced current account, and hence the absence of net capital flows between countries. It should be noted that this does not necessarily imply defective financial integration if the latter is measured according to the (gross) flow or the outstanding amount of external financial assets and liabilities. This indicates the need to analyse both net and gross capital flows: see chapter 3 of this article.

(2) The total outstanding assets and liabilities of the euro area as a whole, as recorded in the statistics on the international investment position (balance of payments), concern the financial positions in relation to countries which are not part of the euro area (extra-euro area). The external positions of euro area countries in relation to one another (intra-euro area) therefore cannot be derived directly from the euro area's balance of payments. However, they can be calculated by totalling the national figures and deducting the aggregate for the euro area. As for some countries no historical series for the international investment position are available, the intra-euro area positions were calculated in this article as the difference between the sum of the external assets and liabilities according to the national financial accounts (where these are recorded by analogy with the international investment position) and the external assets and liabilities for the aggregate of the euro area according to the international investment position.
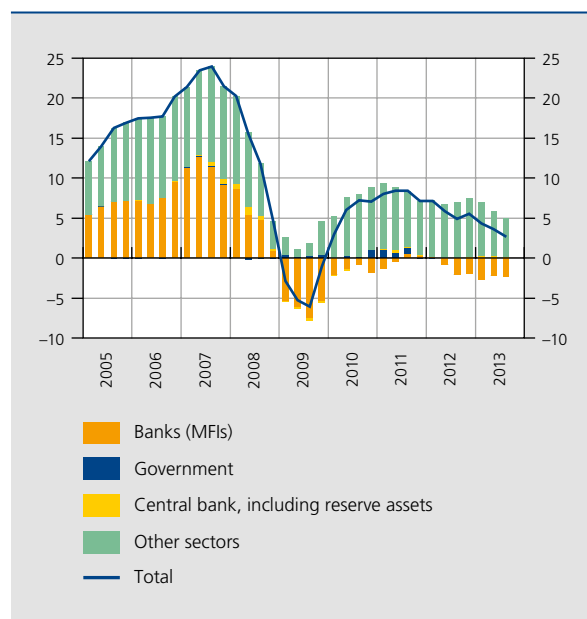
- Extra-euro area
- Intra-euro area [1]

Sources: EC, ECB, NBB.
(1) Intra-euro area positions calculated as the difference between the total external assets and liabilities of the euro area member states according to their respective national accounts and the external assets and liabilities of the euro area as a whole according to the balance of payments.

CHART 5   TRANSACTIONS IN EXTERNAL ASSETS [1],
EURO AREA
(in % of GDP)

- Banks (MFIs)
- Government
- Central bank, including reserve assets
- Other sectors
- Total

Source: ECB.
(1) Transactions in external assets outside the euro area (purchase "+", sale "–"), four-quarter cumulated flows.

amplified reflection of developments in financial integration in the economy as a whole. The substantial weight of the banking sector in international capital flows is evident from the sector-specific breakdown of the capital flows of the euro area (i.e. the formation of external assets by residents). During the period preceding the financial disintegration (from 2005 to 2008), the banks accounted on average for around 45 % of the formation of external assets, mainly as a result of the growing importance of cross-border institutions and a more international financing structure (OECD, 2011). Subsequently, the banks drove the decline in financial integration. Since 2009, they have constantly reduced their external assets while the other sectors have continued to accumulate foreign assets at a rate that, as a percentage of GDP, is virtually the same as before the crisis.

The international banking statistics (BIS) also confirm the strong growth and subsequent reduction in external assets by the banks, in relation to countries both within and outside the euro area. While external exposures on other euro area countries had increased between 2000 and 2007Q3 by € 4 100 billion (or 226 %), over the period from 2007Q3 to 2013Q2 they declined by € 1 700 billion (or 22 %). For the exposures outside the euro area, this increase and reduction amounted to € 7 200 and € 1 900 billion respectively. Combined with a virtually continuous further expansion in assets issued by residents, this indicates that the banks in the euro area are refocusing on their home markets.

The strong deleveraging trend in the financial sector and the associated reduction in external assets and liabilities are attributable to both temporary and structural factors. First, the (temporary) liquidity shortage caused by the financial crisis led banks to sell international assets in order to restore their liquidity position. The suddenly increased risk aversion also prompted a reduction of exposures on countries/sectors and specific market segments beset by solvency problems. One of the more structural factors concerns the change in regulations (including the strengthening of the capital position), which generally caused banks to place less emphasis on international expansion when redefining their business models.

The financial integration in the euro area brought about by banks is not equally advanced in all markets, as is evident from the geographical breakdown of bank claims on the euro area by type of financial instrument [1].

Financial integration in the euro area – measured on the basis of the share of non-domestic claims in total claims on the euro area – displays considerable divergences. Integration is farthest advanced on the interbank market and on the

(1) This analysis is based on monthly bank balance sheet data on a territorial basis, compiled for the purpose of the ECB's monetary policy (Balance Sheet Items). These statistics are therefore not consolidated at banking group level, which means that the external positions include transactions with parent companies, subsidiaries or branches of resident banks established in other countries.

CHART 6 BANKS[1] IN THE EURO AREA: SHARE OF CLAIMS ON OTHER EURO AREA MEMBER STATES[2]

(in % of the banks' total claims on the euro area for each instrument category)
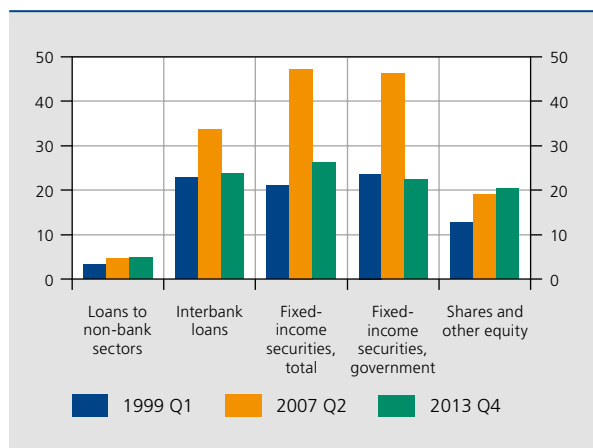
Source: ECB.
(1) Monetary financial institutions (MFIs) excluding the central bank. Non-consolidated (territorial) data.
(2) Claims held on euro area countries other than the member state where the bank is resident.

market of fixed-income securities (which includes government bonds). The home bias is most marked in the case of equities and, above all, lending to the non-bank sector.

The start of the financial crisis in 2007 marked a turning point in the increasing financial integration trend on the market in interbank loans and fixed-income securities. While the share of non-domestic claims in total claims on the euro area in these markets had risen to 34% and 47% respectively in 2007Q2, it subsequently declined to 24% and 26% respectively in 2013Q4.

The weakening of the integration process within the euro area was particularly clear on the market in government paper. The share of foreign government bonds in the total bond holdings of the banks in relation to the euro area had risen steadily from the launch of the euro so that, by mid-2006, it equalled the proportion of domestic securities in the banks' portfolio; however, that share subsequently contracted sharply. According to the latest available data, the integration on this market is now back to the level prevailing at the beginning of 1999, when the third stage of EMU was launched.

It is particularly on the market in government paper that the greater home bias may be a problem because it increases the feedback between national governments and their domestic banking sector. It may also hamper the monetary transmission process in the euro area, possibly leading to a divergence in interest rates for households

and businesses in the euro area[1]. These interest rate differences, which are examined in more detail in section 3.3 of this article, may have a strong impact on the real economy owing to the lack of financial integration on the retail credit market.

The decline apparent since the crisis in the relative share of foreign claims on the interbank market and on the market in fixed-income securities is attributable to a fall in the absolute positions on other countries (down by an average of 5% year-on-year, as opposed to year-on-year growth of more than 10% before the crisis), while claims on residents in these markets continued to expand in absolute terms. Thus, the foreign positions on these markets are the most susceptible to a boom/bust pattern.

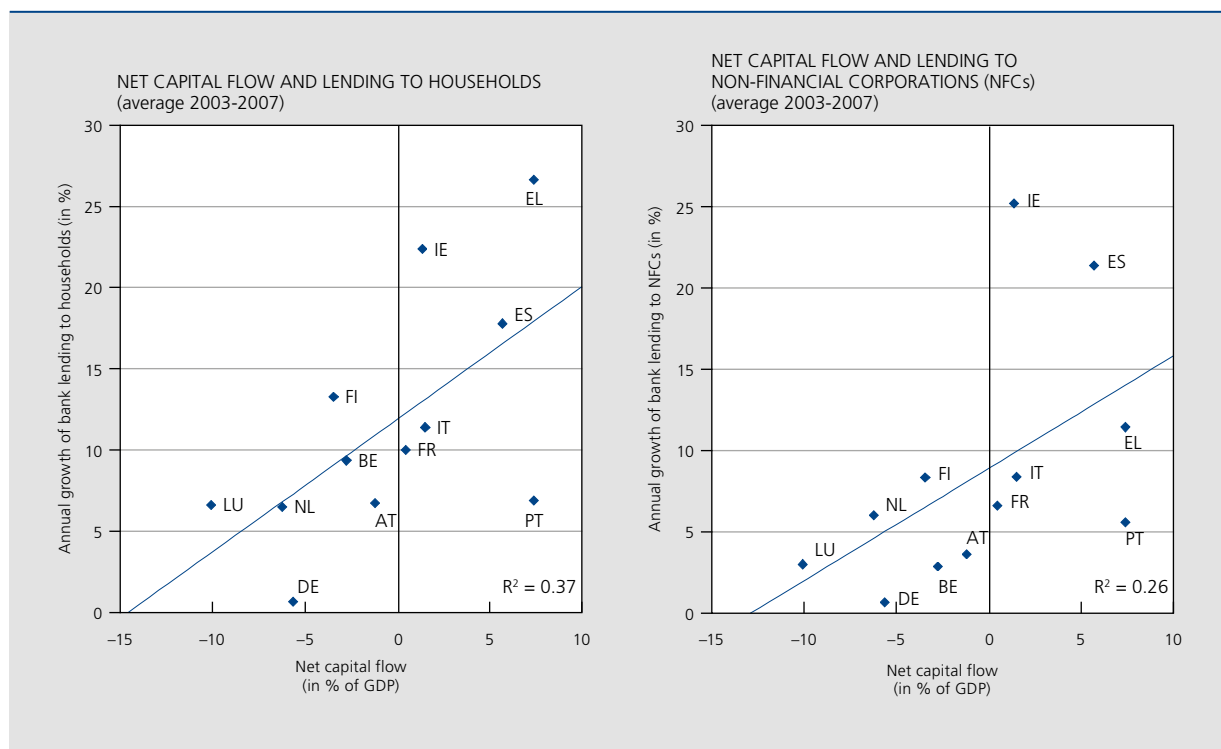## 3.2 Net capital flows and imbalances

The marked increase in financial integration and risk-sharing between the euro area economies up to the time of the financial crisis also resulted in large current account imbalances between 2003 and 2007, channelling substantial net capital flows into the deficit countries.

This inflow often underlies favourable financing conditions in the deficit countries, and offered banks in those countries the opportunity to allow their lending to grow faster than domestic savings. A strong conversion of capital inflows into domestic credit is a sign of increased financial fragility and perhaps excessively easy credit, with the risk of leverage-driven booms, notably in the real estate sector. Such credit booms often also prelude financial crises (see for example Gourinchas and Obstfeld, 2012).

Between 2003 and 2007, a substantial net capital inflow coincided with extremely strong growth of domestic lending in a number of euro area countries (such as Greece, Spain and Ireland). During that period, the net capital inflow clearly went hand in hand with lending to corporations and households. The significant net capital inflow (and hence strong credit growth) in those countries thus implied the risk of leading to unproductive investment, which could raise doubts over the external imbalances. According to Reinhart and Reinhart (1998), capital inflows are indeed often associated with a reduction in credit quality and rapid price increases for

(1) In general, the interest rate on government paper may influence retail interest rates via three different channels: namely via prices, liquidity and balance sheets. A higher interest rate on government paper can lead to higher retail interest rates because (i) the government interest rate is seen as the implicit benchmark for retail loans (price channel), (ii) the banks face higher financing costs because government bonds are seen as less valuable collateral for refinancing operations (liquidity channel), and (iii) downward valuations on government bonds have an impact on the banks' capital base (balance sheet channel). In the event of a home bias, these channels will cause national retail interest rates to reflect the national government's funding costs.

CHART 7   NET CAPITAL FLOW[1] AND DOMESTIC CREDIT GROWTH[2]

NET CAPITAL FLOW AND LENDING TO HOUSEHOLDS
(average 2003-2007)

NET CAPITAL FLOW AND LENDING TO
NON-FINANCIAL CORPORATIONS (NFCs)
(average 2003-2007)

Sources: ECB, NBB.
(1) Financial account balance of the balance of payments.
(2) Lending by the resident banking sector (including securitised loans) to residents.

financial assets or property. The risk of inefficient alloca-tion is present especially in the case of an underdevel-oped financial sector and weak regulation.

The fragility of the deficit countries in the euro area and the concern over their external imbalances became clear when, as a result of the financial crisis, a widespread risk repricing took place on the financial markets.

A breakdown of the financial account of the balance of payments into official and private capital flows (see Box), revealing how countries finance their external imbalance (i.e. the current and capital account balance), shows a marked withdrawal of private capital from both pro-gramme and deficit countries[1] (see also Boeckx, 2012).

Before the financial crisis, the external deficit in these countries was almost entirely funded by private capital flows, but after the financial crisis erupted in 2007 those flows dried up; in the case of the programme countries, there was actually a mass withdrawal of private capital from mid-2010, when concerns over their public finances became acute. The same occurred in the deficit countries, albeit at a later stage in the sovereign debt crisis, namely around the end of 2011.

These developments were accompanied by a reduced outflow of private capital from the surplus countries, of which Germany is the largest. At the beginning of 2012, Germany actually recorded a net inflow of private capital for a short time, mostly as the "counterpart" to the with-drawal of capital from the peripheral countries.

Such a sudden stop, which in the past had mainly affect-ed emerging economies, is normally accompanied by an immediate adjustment of the external balance of the deficit countries, to a level in line with the new private funding flow. That adjustment is often accompanied by a deep recession and financial instability (particularly

(1) For the purposes of this article, the euro area countries were divided into three groups: programme, deficit and surplus countries. The programme countries comprise the countries that accepted a macroeconomic reform programme in exchange for loans to the government (Greece, Portugal, Ireland and Cyprus). The surplus countries are Germany, the Netherlands, Belgium, Finland, Austria and Luxembourg, on the basis of a positive current account balance, on average, over the period 2005-2013. The other seven euro area countries (excluding Latvia) are classed as deficit countries, with the proviso that the programme countries also recorded a current account deficit during this period. In this analysis, Spain is also included among the deficit countries since the financial assistance that the country received (via the ESM) and the programme to be carried out were intended for the banking sector, and not for the government.

CHART 8

CHART 8   NET INFLOW AND OUTFLOW OF CAPITAL : FINANCING SOURCES ACCORDING TO THE FINANCIAL ACCOUNT OF THE BALANCE OF PAYMENTS[(1)]

(in % of GDP, four-quarter cumulated flows)
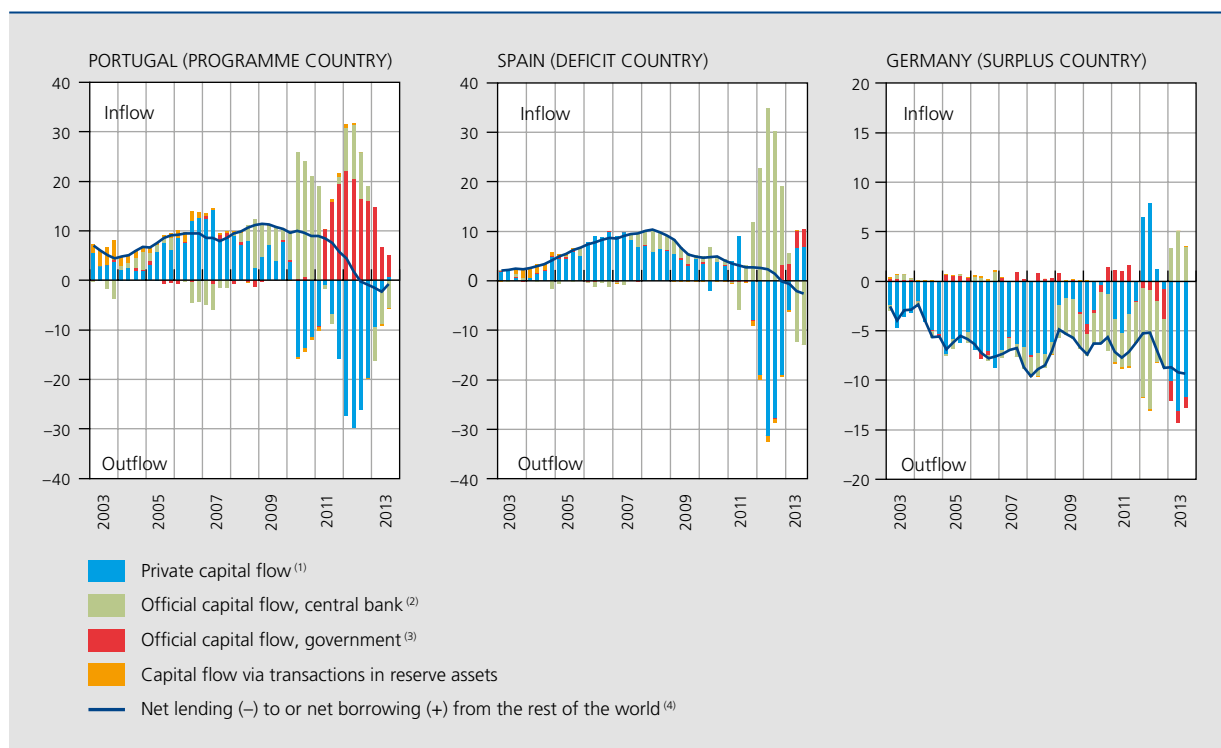
Sources : ECB, NBB.
(1) Net capital flows calculated as the difference between the financial account balance of the balance of payments and the official capital flows (via the central bank and the government, including transactions in reserve assets).
(2) Net capital flows which the central bank records under "other investment" (mainly loans and deposits) in the balance of payments.
(3) Net capital flows which the government records under "other investment" (mainly loans and deposits) in the balance of payments.
(4) As indicated by the financial account balance. Net lending to the rest of the world is recorded as a net capital outflow (–) and net borrowing from the rest of the world is recorded as a net capital inflow (+).

as a result of the abrupt deleveraging process in the banking sector). In the case of a monetary union, the absence of the exchange rate instrument means that such an adjustment also requires considerable flexibility in prices on the labour and product markets, so that the external balance can be improved by an increase in competitiveness.

In order to avoid instability, official financing took the place of private financing. This official financing occurred on the one hand via the Eurosystem's liquidity-providing operations and on the other via the new institutional architecture at the level of the EU and the euro area, enabling governments to assist one another.

Although financing via the Eurosystem is inherent in the operation of the monetary union, whereby banks can obtain funding via their central bank at the ECB's main refinancing rate in return for provision of appropriate collateral, it is not automatic. To meet the increased

demand for funding, the Governing Council of the ECB decided, via various measures, to increase its provision of liquidity, much of which was being taken up by the deficit and programme countries. In so doing, the ECB acted as a financial intermediary between the surplus and deficit countries. The large cross-border flows of central bank money – which were offset by changes in the credit provision of the Eurosystem – are expressed in the TARGET 2 balances that the national central banks hold with the ECB. Those balances are named after the payment system settling cross-border bank payments in the euro area.

The changes to the institutional architecture triggered a flow of funding supported by governments which was provided more or less successively via the bilateral assistance to Greece (Greek loan facility), the EFSM (European Financial Stability Mechanism) the EFSF (European Financial Stability Facility) and the ESM (European Stability Mechanism).

At first, it was mainly the Eurosystem that took on the role of financier; only later, namely with the entry into effect of the programme financing, was the role also assigned to the governments of the euro area countries together with the IMF and the EC. It should be noted that the two forms of financing are close substitutes for one another from the point of view of funding the external deficit, and that the Eurosystem can, for example, phase out its role as an intermediary when the programme financing is increased. However, they differ in that financing via the Eurosystem is addressed to the banking sector, while the public funding flows to the governments[1]. In addition, the Eurosystem financing is not subject to any explicit conditionality, in contrast to the programme financing. Indirectly, these official

funding sources also had a stabilising effect on the surplus countries as, without these interventions, the private sector in the surplus countries would probably have suffered greater capital losses when liquidating their positions in the deficit countries.

The conditionality imposed on countries under the programme financing, including the correction of their external imbalances, was effective. Together, the programme countries, whose external deficit had risen to an average of 11.5 % of their combined GDP in 2008,

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[1] In the case of the ESM, however, this financing can also operate via the banking sector (subject to the entry into effect of the single supervisory mechanism (SSM)).

Box – Recording and interpretation of capital flows in the balance of payments

In this article, the volume measures of financial integration are based largely on the information on international capital flows and external positions available from the statistics on the balance of payments (flows) and the international investment position (stocks). A good understanding of these concepts is crucial for gaining an insight into developments in financial integration. This Box therefore offers background information on their method of calculation and the way in which the data should be viewed within the balance of payments as a whole. It also examines more closely how the newly created assistance mechanisms (the EFSF, the ESM) affected these aggregates during the crisis in the euro area.

INTERNATIONAL CAPITAL FLOWS ON THE BASIS OF THE FINANCIAL ACCOUNT OF THE BALANCE OF PAYMENTS

In this article, international capital flows are derived from the financial account of the balance of payments. That account comprises all cross-border transactions in financial assets (capital outflow ("-") if the assets increase) and liabilities (capital inflow ("+") if the liabilities increase). If the financial account shows a positive balance, that indicates a net capital inflow.

According to the balance of payments recording principles, the total of its sub-accounts is zero[1], and the financial account balance is necessarily the opposite of the balance of the current and capital account[2].

Balance of Payments = Current Account (CA) + Capital Account (KA) + Financial Account (FA) = 0

$$CA + KA = - FA$$

A surplus on the current and capital account must lead to the formation of external financial assets or the reduction of external liabilities (net capital outflow and hence a negative financial account balance). Conversely, a deficit has to be financed by selling external assets or taking on new external liabilities (net capital inflow and hence a positive financial account balance).

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[1] Any remaining discrepancies are recorded under "errors and omissions", a heading separate from the sub-accounts, thus ensuring that the balance of payments has a total balance of zero.
[2] The capital account, which records capital transfers (e.g. capital transfers related to the EU budget and debt forgiveness), generally shows a small balance so that the balance of the two accounts is sometimes presented in simplified form by means of the current account balance.

▶

While the balance of payments records cross-border capital flows, the international investment position (IIP) reflects the stock of external assets and liabilities. The net IIP (NIIP) is calculated as the difference between the stock of financial assets and liabilities and thus gives the total net external assets or liabilities of a country. Conceptually, the IIP corresponds exactly to the financial account of the balance of payments, as changes in the positions are equal to the total of the flows of the balance of payments and the revaluation effects on the outstanding assets and liabilities. The following points therefore concern both capital flows and external positions.

BREAKDOWN OF THE FINANCIAL ACCOUNT INTO PRIVATE AND OFFICIAL CAPITAL FLOWS

With the current balance of payments methodology (BPM5 [1]), the financial account can be broken down by sector and by financial instrument. The sectors comprise the central bank, the government, the banks (MFIs) and other sectors (non-bank private sector). The financial instruments are grouped according to the "functional" classification and include direct investment [2], portfolio investment (equities and fixed-income securities), financial derivatives, other investment (mainly deposits and loans), and reserve assets (foreign currency, monetary gold, etc.).

The financial account therefore shows the financial instruments whereby resident sectors lend to or borrow from the rest of the world. The financing method is relevant, since some capital flows, more particularly short-term flows, are more volatile than others (OECD, 2011) and therefore could signal whether the financing of the current account balance is sustainable.

Although the overall balance of payments is always in balance, with the financial account balance offsetting the current account balance, it is nevertheless common to refer in some cases to an imbalance on the balance of payments. This then concerns a sub-set of headings for which the total is not equal to zero, giving rise to a compensatory balance under the other headings. It is usual to add the current and capital account together with a number of financial account headings in order to examine the size of the balance on the other financial account headings.

Thus, under a fixed exchange rate system, it is common to add up all the headings except the central bank's reserve assets ("overall balance"). In this case, a balance of payments deficit (net capital outflow) is recorded if the balance of the headings "above the line" has to be offset by the sale of reserve assets (net capital inflow). The overall balance then indicates the size of the "official transactions in reserve assets" that the central bank has to conduct in order to maintain the exchange rate, in view of the pressure exerted by the shortage of funding for the current account balance.

In the case of a floating exchange rate (which applies to the euro as a whole), the reserve assets are not actively used to cover a shortfall in funding for the current account, and thus there is no point in separating this heading. Exchange rate adjustments then ensure that the current account balance of the euro area is restored to equilibrium with the available flow of finance. However, this equilibrium mechanism does not operate at the level of the individual euro area countries, so that they can maintain a current account balance that deviates from the market financing, e.g. if official funding is available. In the balance of payments, these transactions are recorded under "Other investment" (mainly loans) of the central bank and the government.

In regard to the euro area countries and in the case of the central bank, this heading includes mainly, but not exclusively, the claims/liabilities recorded by the NCBs on the ECB (essentially the TARGET 2 balances). For the government, they consist mainly, but not exclusively, of the assistance that the Member States grant one another, e.g. via the EFSF and the ESM.

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(1) According to the methodology described in the Balance of Payments Manual, Fifth Edition (see IMF 1993 and 2004). However, from the last quarter of 2014, the ECB will switch to BPM6, which the IMF (IMF, 2009) presented as the new standard.
(2) Direct investment includes all financial transactions with entities in which the foreign investor has a stake of at least 10 % of the capital. It can also be broken down into equities and reinvested profits, and other capital (e.g. inter-company loans).

▶

In this article, the private net capital flow is equal to the difference between the balance on the financial account of the balance of payments and the official capital flows (other investment of the government and the central bank, including the reserve assets).

RECORDING IN THE BALANCE OF PAYMENTS OF FINANCIAL ASSISTANCE GRANTED VIA THE EFSF AND THE ESM

The recording in the balance of payments of loans granted by the EFSF and the ESM[1] requires special attention. In the case of the recipient member state, these transactions increase the official net liabilities of the government; the part of the public debt that was previously funded on the capital market (recorded under "portfolio investment") is now replaced by a loan from the EFSF/ESM (recorded under "other investment").

Since both the EFSF and the ESM resort to capital market bond issues for granting loans, the counterpart to this official financing is recorded in the private capital flows of the lender countries in so far as the sectors of those countries have subscribed to those bonds. The impact on the net official capital flow of the lender countries is different for the EFSF and ESM. In the case of the EFSF, which is not regarded as a separate institutional sector but as a foreign financial institution (Eurostat, 2011), the funding obtained via that facility is attributed in accounting terms ("rerouted") to the guarantor governments. This takes the form of a loan (in accounting terms) by the EFSF to the guarantor government, which in turn passes on the loan to the government seeking assistance. Although that increases the gross debt of the guarantor government, the impact on the government's net financing in the balance of payments is zero, as the debt to the EFSF is offset by a claim on the recipient government. In the case of the ESM, which is recognised as a foreign institutional sector (Eurostat, 2013), the loan is recorded directly as a loan from the ESM to the recipient Member State, so that the account of the guarantor government is unaffected. In contrast to the EFSF, however, the ESM has its own capital, fully paid in the sum of € 80 billion by the guarantor governments. This share in the capital creates an official net claim in the balance of payments for the guarantor governments.

The official net financing that the programme countries receive from the EFSF and the ESM therefore creates no corresponding net claim for the lender governments except for their share in the capital of the ESM. However, this does not mean that the governments bear no risk, because in the event of default their guarantees will be invoked: in the case of the EFSF, they amount to 120 % and 165 % respectively of the EFSF issues, depending on whether they were issued before or after October 2011. In the case of the ESM issues, the guarantees amount to 140 %[2]. However, these "contingent liabilities" are not recorded in the balance of payments.

(1) Since 1 July 2013, the permanent ESM has taken over the role of the EFSF. The sole responsibility of the EFSF is now to deal with the loans which it had granted to Ireland, Portugal and Greece totalling € 192 billion. The EFSF had a lending capacity of € 440 billion, as opposed to € 500 billion for the ESM. However, the amount granted jointly by the EFSF and the ESM must not exceed € 500 billion. Securities issued by the EFSF and the ESM to fund the loans benefit from an (over) guarantee provided by the euro area Member States not resorting to financing; that is beneficial for the credit quality of the issues. By 1 April 2014 the EFSF and the ESM had jointly granted € 242 billion to Ireland, Portugal, Greece, Spain and Cyprus.

(2) The guarantee is shared among the countries according to their respective shares in the ECB capital.

succeeded in cutting that deficit considerably, and from 2013 their current account actually showed a small surplus. In this way, these countries brought their external balance in line with the available private capital flow.

Going forward, the enhanced macroeconomic surveillance in the EU, with the macroeconomic imbalance procedure (MIP) as an important component, will prevent any future derailment of the countries' external balances, and that should reduce the risks of sudden stops. The EC scoreboard adopts for the current account thresholds of < −4 % and > 6 % of GDP.

However, for the programme and deficit countries, the correction of the current account is not necessarily always a good thing. Usually, a rapid correction further depresses economic activity, though that depends on the composition of the adjustment. Initially, the correction of the current account in the deficit countries was based on weak domestic demand (especially investment

demand), with potential downward pressure on infla-tion. It is highly questionable whether the correction is sustainable in that way, because a permanent im-provement requires a stronger competitive position and a structural expansion of the export sector. The latter is happening to some extent in certain countries, as is evident from their accelerating export growth. Furthermore, the adjustment of the external balances in the deficit countries also weighs on inflation in the euro area as a whole, obliging the Eurosystem to conduct an accommodative monetary policy.

Despite the improvement in the external balance, the net external debt of the deficit countries has continued to grow. In fact, a reduction in the net external liabili-ties requires either a positive current account balance or positive revaluation effects. Their history of external deficits has left the deficit countries with a substantial net external debt (see Van Nieuwenhuyze, 2013, for the relevance of that debt), which in the case of the programme countries has risen to over 100 % of their combined GDP. Here, too, the MIP applies a threshold

value, namely –35 % of GDP. It is rather unrealistic that, in the absence of positive revaluation effects[1], these countries can rapidly bring their net debt ratio down to that level, as it would require them to record relatively substantial current account surpluses for sev-eral years. The latter seems not accord with the future structural equilibrium level of the external accounts of those countries.

Although the period of large external deficits has ended, with some countries exiting their programme, the former deficit countries still carry a substantial net external debt and therefore remain subject to a refi-nancing risk. A breakdown of the net external liabilities (net international investment position, NIIP) by type of financing – by analogy with the breakdown of the financial account of the balance of payments – reveals that, since the financial crisis, this debt has been funded to an ever diminishing degree by private finance, so that

(1) Substantial positive valuation effects could result from an increase in the value of the financial assets of those countries and/or a reduction in the value or writing off (restructuring) of their debts.

CHART 9   NET EXTERNAL POSITION : BREAKDOWN BY TYPE OF FINANCING
(in % of GDP)
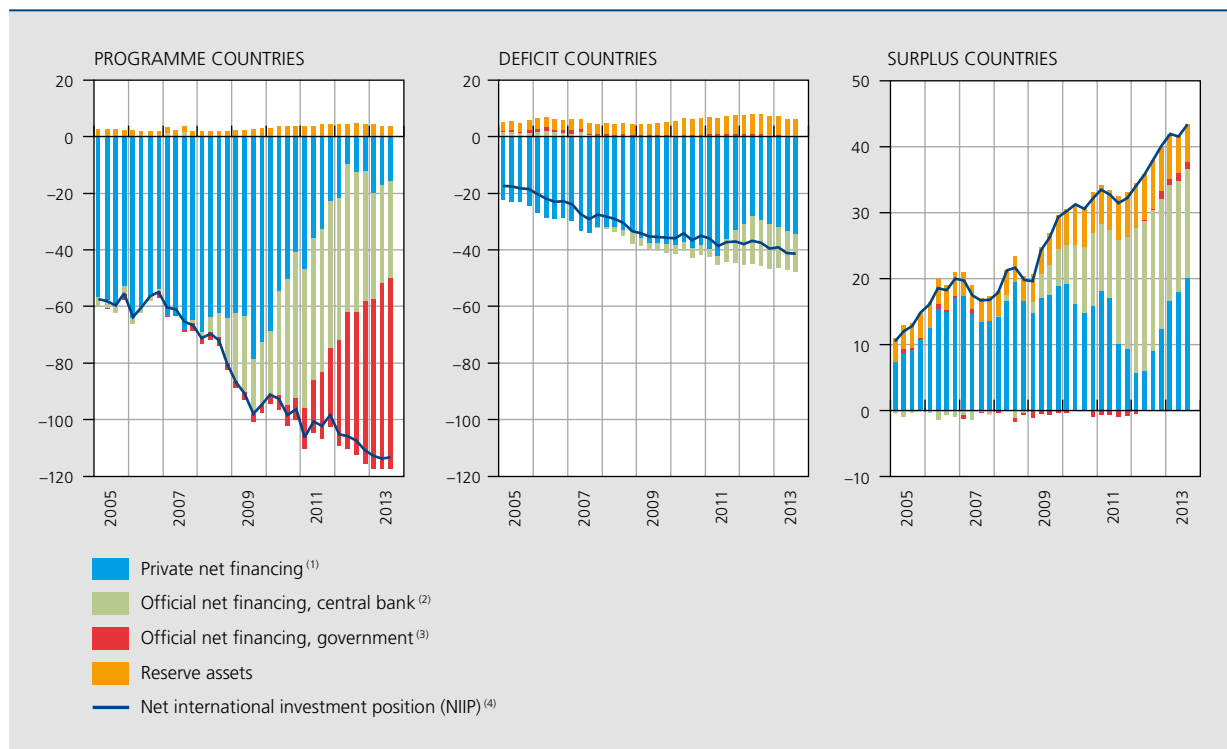
Sources : ECB, NBB.
(1) Outstanding net financing calculated as the difference between the NIIP and the outstanding official net financing (other investment of the central bank and the government, including the reserve assets).
(2) Net position that the central bank records under "other investment" in the IIP statistics.
(3) Net position that the government records under "other investment" in the IIP statistics.
(4) According to the IIP statistics. Positive (negative) values indicate outstanding net claims on (net liabilities to) the rest of the world.

it is the governments and the central banks that are exposed to the credit risk[1].

In the case of the programme countries, the net external liabilities, amounting to 113 % of GDP, are currently financed almost entirely via official sources; in the third quarter of 2013, that share exceeded 100 % of their combined GDP. Since the end of 2012, programme financing has been the slightly dominant source of funding for the programme countries, closely followed by Eurosystem financing. In the case of the deficit countries, a substantial part of the net external liabilities is still financed officially (by the Eurosystem).

For the surplus countries, this means that the private sector has less exposure to those countries, and that has in particular enhanced the stability of their financial sector. Of the total net claims of the surplus countries, more than 40 % now consists of official claims, particularly claims which the national central banks hold on the ECB (TARGET 2 balances). As described in the Box, the net claims of the governments in the surplus countries have not increased significantly. However, that does not mean that those governments are not incurring any credit risk. To ensure that the EFSF/ESM functions smoothly, they have granted substantial guarantees which could be invoked in the future in the event of a default. However, these guarantees are not illustrated in chart 9.

Since a fundamental correction of the net external debt is rather unlikely in the short term and in view of the current level of (private) financial integration in the euro area, the official financing needs to be maintained in the short term and renewed if necessary. In the longer term, it is vital to restore confidence so as to revive private financing and enable the outstanding amount of official funding to be scaled down. Increased financial integration in the euro area is therefore essential for the sustainability of the external positions. The concluding section will return to this issue, after the price aspect of financial integration has been examined in the next section.

3.3 Interest rates

Apart from volumes, prices or their equivalent – yields or interest rates – are another way of measuring financial integration. The no arbitrage characteristics of an integrated market imply that interest rate differentials between

countries reflect expected exchange rate fluctuations and differences in risk premia for the various instruments. In a genuine monetary union, where, by definition, exchange rates are not expected to change, the interest rates on two financial assets with similar characteristics (in regard to liquidity risk and credit risk, for example) ought to be the same.

It is therefore desirable for this aspect of financial integration to be fulfilled in a monetary union: monetary policy decisions implemented on the basis of a single key interest rate for all Member States must be transmitted in the same way to the real economy throughout the union. If differences between the interest rates on two financial instruments are due solely to the issuer's country of origin – and not to fundamental risk factors – that indicates fragmentation and distortion in the transmission of monetary policy. This section examines the price aspect of financial integration in various financial market segments in the euro area, focusing primarily on developments since the start of the crisis. For that purpose, we look at trends and developments in benchmark rates and bank interest rates in the various countries, and examine whether or, if so, to what extent, monetary policy decisions are transmitted to the interest rates of various euro area countries.

BENCHMARK RATES

The first stage in the monetary transmission mechanism concerns the transmission of the policy interest rate to benchmark rates. We first analyse the trends on the interbank market and the sovereign debt markets, given that interest rates on those markets form the reference for pricing contracts on other financial markets, such as the corporate bond or retail banking market. Interbank rates and sovereign bond yields in the various monetary jurisdictions depend on the level of the policy interest rate set by the respective central banks and how that rate is expected to change; they therefore depend on the specific characteristics of the jurisdiction concerned, and in particular its (implicit) inflation target, potential growth and position in the economic cycle. That is why, prior to 1999, the differences in the policy interest rate – which primarily reflected divergent actual and expected real growth and / or inflation between countries – were one of the main reasons for the differences between benchmark rates. The risk premia associated with those benchmark rates, e.g. on account of the exchange rate risk, also played a part in the divergences apparent between countries before the introduction of the euro. The process leading to the third stage of EMU, involving adherence to the convergence criteria laid down by the Maastricht Treaty, also implied a significant convergence in the benchmark interest rates. In addition, the introduction of the single

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(1) In view of the due dates of the EFSF and ESM loans, this risk could persist for a long time. For instance, the latest dates for repayment of the loans granted by the EFSF to Portugal, Ireland and Greece are currently 2040, 2042 and 2050 respectively. For the ESM loans to Spain and Cyprus the dates are 2027 and 2030 respectively.

currency eliminated the devaluation risk, removing the second key factor behind the divergence between interest rates on instruments from various euro area countries.

This sequence of events is clearly apparent on the interbank markets: the divergences between countries as measured by the standard deviation were significant before 1996 but diminished considerably in the run-up to EMU. Divergences remained negligible from the introduction of the euro in 1999 to the initial turbulence on the financial markets in 2007. From 2007, and particularly from the last quarter of 2008, a heightened risk perception in a climate of extreme uncertainty in the financial sector contributed to a fragmentation of the money markets along national borders. Various factors may have been behind this. For one thing, banks may be better informed about the situation of banks in their home country, so that their decisions on lending differ from those of their foreign counterparts. Also, as the crisis unfolded, the situation of public finances began to be linked ever more closely with the risk associated with the banks, so that the vulnerability of the fiscal position in certain countries also contributed towards higher financing costs for their national banking systems[1]. This second effect seems to be the reason why the dispersion between secured interbank interest rates at the height of the sovereign debt crisis in 2011 and 2012 was more important than that of unsecured interest rates. In fact, government bonds are often used as collateral for secured loans on the interbank markets, which means that a credit risk linked to a specific government reduces the value of the collateral available

to the banks, and thus restricts their access to funding. That effect was heightened by the strong preference for the home market in the government bonds held (see section 3.1), exacerbating this risk of correlation between the public sector and the banking system in each country.

Apart from their effect on the banks' portfolios and their funding costs, government bond yields are a fundamental element in the monetary transmission mechanism since they generally act as the benchmark for prices of other fixed-income securities in each country. Furthermore, the effects of the crisis in the euro area were reflected primarily in government bond yields. It is therefore relevant to examine the movement in those yields when analysing financial integration in the euro area. Like interbank interest rates, government bond yields in the euro area diverged at the beginning of the 1990s as a result of the aforesaid nominal differences and the disparities in the various governments' solvency characteristics. In the years prior to the introduction of the euro, yields showed a marked tendency to converge and differences between countries became much smaller. That trend was confirmed after 1999 as a result of the convergence of inflation risks and the elimination of the exchange rate risk in

(1) The "sovereign-bank loop", or the link between the financing costs of banks and governments, operates in both directions via various channels. In the case of feedback from government to banks, if a national government is in a vulnerable fiscal position it could be unable to support the banks, potentially leading to losses – at least in terms of market value – on the banks' portfolios of government bonds. In the case of feedback from the banks to the government, a financial sector in a critical situation can place a serious financial burden on public finances. The mere impression that a banking sector is vulnerable is enough to drive up risk premia for the government.

CHART 10   FRAGMENTATION ON EURO AREA MONEY MARKETS
(standard deviation between countries, in basis points)
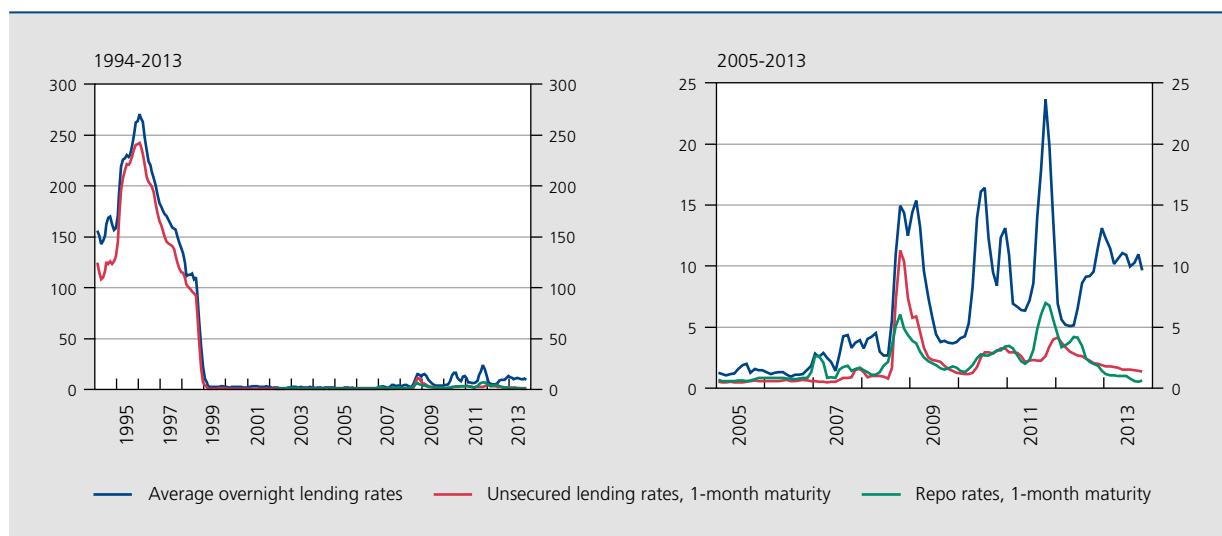
Source: ECB.

the context of the Monetary Union. However, between 1999 and 2008, the wide variations in solvency between governments were accompanied by exceptionally similar yields on government bonds in the euro area countries, despite the no bail-out clause. This suggests that, during the first ten years of the euro, the pricing of risk was most probably not efficient, leading to excessive convergence in the yields of the various euro area sovereigns.

That finding is in stark contrast to the outbreak of the financial and economic crisis, and particularly the sovereign debt crisis in the euro area, which caused an increased risk perception among investors, who retreated behind their national borders. The outflow of capital from the countries seen as riskier was accompanied by a surge in the yields on the sovereign bonds of those countries. From mid-2011, fears that the single currency could be reversed – initially associated to a very small group of countries – contributed to a widening divergence of yields along national borders: while some governments were forced to exit the financial markets, others regarded as safe havens saw their financing costs fall sharply as a result of the capital inflow.

In the face of this situation, and in order to prevent these distortions on the interbank market and the markets in sovereign debt from jeopardising the singleness of
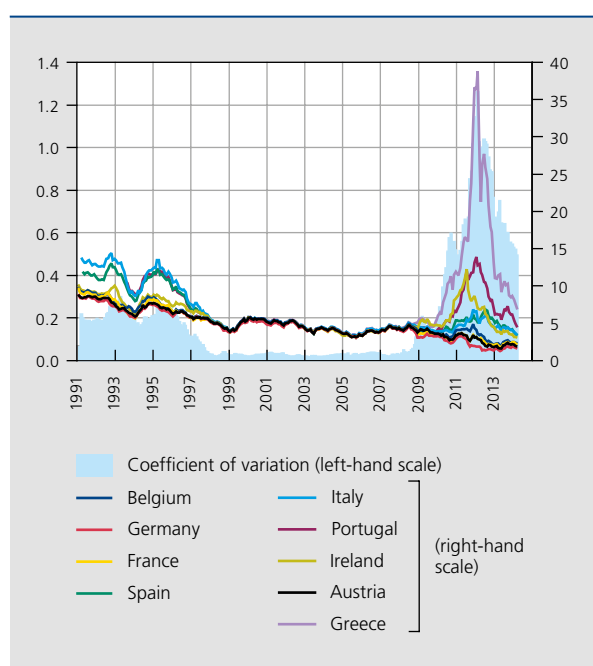
monetary policy in the euro area, the ECB took a number of unconventional measures which helped to alleviate the effects of the fragmentation of interbank rates and sovereign bond yields. The measures intended to facilitate financing for banks included the provision of liquidity on favourable terms, two programmes for the purchase of covered bonds, and the extension of the list of eligible collateral, which eased the banks' financing problems despite the deterioration in their assets. More specifically aimed at countering the disruption of the monetary policy transmission mechanism, two programmes were devised to address the unjustified divergences in sovereign bond yields. Under the Securities Markets Programme (SMP), the Eurosystem purchased government securities on the secondary markets between 2010 and 2012 to restore the smooth operation of certain market segments, in order to safeguard the transmission of monetary policy. The SMP was terminated when the ECB introduced the outright monetary transactions (OMT) programme, which similarly addresses distortions in the monetary transmission mechanism, particularly in the light of the perception that sovereign bond yield differentials were also fuelled by an increase in the redenomination risk, i.e. the risk that a country might leave the euro area. The increase in yields in some countries more severely affected by the crisis and, as a mirror image, the decline in yields in countries regarded as safe havens, were therefore both considered excessive and not entirely justified by the economic fundamentals[1]. Consequently, the aim of the OMTs was to eliminate the redenomination risk to prevent "destructive scenarios with potentially severe challenges for price stability in the euro area" (ECB, 2014).

Other European and national authorities also adopted various economic, structural and institutional measures as the crisis intensified. Key European measures were a strengthening of economic governance in the EU and steps towards the creation of a banking union. Together with the OMT programme, those measures succeeded in reducing the fragmentation on the money markets and sovereign bond markets by restoring confidence in certain market segments. That greatly reduced the divergence of benchmark yields between countries, particularly from the summer of 2012, although the spread remained very wide compared to that prevailing before the crisis (and in some cases, even compared to the pre-euro period).

BANK LENDING RATES

Since benchmark markets have an impact on the banks' financing costs and on the value of their portfolio, they are a key factor in determining the interest rates that

CHART 11   FRAGMENTATION ON EURO AREA SOVEREIGN BOND MARKETS

(ten-year bond yields and coefficient of variation, in %)

Coefficient of variation (left-hand scale)

Belgium
Germany
France
Spain
Italy
Portugal
Ireland
Austria
Greece

(right-hand scale)

Source: Thomson Reuters Datastream.

(1) For more information on this point, see Dewachter et al. (2014, forthcoming in the Journal of Banking and Finance).

banks apply to their customers. The developments in interbank rates and sovereign bond yields, and particularly the convergence and subsequent divergence seen since the introduction of the euro, may therefore have been reflected in other financial markets, including retail markets. In a monetary union, the efficient transmission of monetary policy to all countries and markets is a fundamental feature of financial integration within the union. Against that backdrop, it is therefore appropriate to examine developments in bank interest rates in each country as the final stage in the transmission of monetary policy.

In order to assess the extent to which price conditions on retail banking markets became fragmented following the divergences on the reference markets, and the factors causing that fragmentation, we shall proceed to analyse the trends in retail interest rates. This article focuses in particular on developments in bank interest rates before – and, especially, during – the crisis. More particularly, it looks at the interest rate on bank loans to non-financial corporations (NFCs), for two reasons. First, bank loans are still the principal source of credit for the non-financial private sector in the euro area, while the level of financing raised via other financial intermediaries or directly on the markets is relatively low, particularly for small and medium-sized firms. Second, the analysis focuses on the cost of borrowing for NFCs (as opposed to households) because that is a fundamental determinant of corporate investment and hence economic growth. It should be noted that the bank lending rate for non-financial corporations varied more widely than the rate on loans to households for house purchase because a larger proportion of loans to NFCs is unsecured or not backed by collateral [1], so that changing risk perceptions have a bigger impact on the rates charged to NFCs.
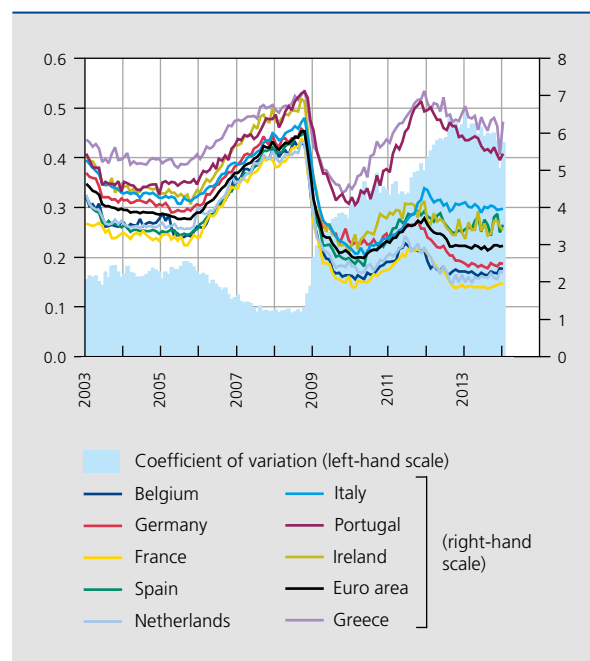
As in the reference markets, the dispersion between bank lending rates [2] as measured by the coefficient of variation between countries stood at low levels between 2003 (the beginning of the series of harmonised data for the countries) and the end of 2008. During the economic expansion between 2006 and the summer of 2007, the dispersion diminished. Following the collapse of Lehman Brothers, the divergences began to increase. In the summer of 2011, when the sovereign debt crisis intensified and spread to a large number of countries, discrepancies between bank lending rates in different countries actually increased further, reaching a peak between August 2012 and August 2013, a period in which the fragmentation

of benchmark markets had begun to turn around. During 2013, the dispersion between retail interest rates applied in the various countries began to diminish, albeit to a lesser extent than the aforesaid reduction in divergence on sovereign bond markets, and the discrepancy was still very substantial at the beginning of 2014. As a result, NFCs in some euro area countries face short-term borrowing costs comparable to those prevailing in the first half of the 2000s, even though the policy interest rate is currently close to the zero lower bound. Following the 400 basis point cut in the rate on the main refinancing operations between August 2008 and January 2014, the bank lending rate on short-term loans to NFCs declined by more than 300 basis points in some countries (such as Germany, the Netherlands, France and Belgium), while interest rates in the countries hardest hit by the crisis (Spain, Italy, Portugal and Greece) fell by only 165 basis points on average over the same period.

Such large variations in the pass-through of the reduction in the policy interest rate suggest problems in the transmission of monetary policy to bank lending rates, so that the easing of monetary policy had little effect in the countries that, in view of their economic situation, were most

Coefficient of variation (left-hand scale)

Belgium	Italy
Germany	Portugal
France	Ireland
Spain	Euro area
Netherlands	Greece

(right-hand scale)

Source : ECB.
(1) Calculated as a weighted average of the interest rates on loans up to one year (including long-term loans at floating rates and an initial interest rate fixation period up to one year) and overdraft facilities granted by banks to non-financial corporations (cf. ECB, 2013).

(1) Since June 2010, around 30 % on average of new bank loans to NFCs in the euro area are secured or backed by collateral (data from the ECB's survey of Monetary Financial Institutions' Interest Rates (MIR survey)).
(2) The bank interest rates used here are from the ECB's MIR survey with harmonised methods for all euro area countries. The series, published monthly, begins in January 2003.

in need of it. In fact, that defective pass-through may have been due to genuine problems in the monetary policy transmission mechanism, or it may have reflected other poorly identified factors. In that case, a simple analysis of the movements in bank lending rates without taking proper account of the underlying characteristics of the respective banks and economic conditions could lead to an incomplete assessment of the transmission mechanism.

To gain a better insight into the factors behind these variations in the transmission of benchmark rates to retail rates from one country to another, it seems useful to examine the link between the bank lending rate (expressed as the difference in basis points between the cost of borrowing indicator of NFCs up to one year and the three-month interest rate on overnight interest rate swaps, averaged over the period in question [1]) and a factor connected with the financial health of the banking sector – the Tier 1 capital ratio – on the one hand, and a macroeconomic factor – non-performing loans (NPL) – on the other.

In regard to the first of these factors, the chart shows how the level of capitalisation of the national banking system has a negative correlation with the bank lending rate. Between 2008 and the first half of 2013, there was a steep rise in the Tier 1 capital ratios owing to the recapitalisation of the banks following the crisis, but

this was associated with a strong increase in the variations between countries: although the differences in the level of capitalisation between national banking sectors were already considerable in 2008 (ranging from 6.6 % to 12.7 %), they grew even larger in the ensuing years so that, in the first half of 2013, they ranged between 10.7 % and 19.1 %. The observed negative correlation implies that better capitalised banks charge lower interest rates on new loans. Moreover, that link became stronger during the crisis, with a steeper curve (indicating that a deterioration in bank capitalisation caused the bank lending rate to rise more sharply in 2013 than before the crisis) but a lower R-squared. Weaker banks, with a low level of capitalisation or higher financial leverage, find it harder and more expensive to access funding. The fact that the bank lending rate became more sensitive to the financial soundness of the national banking system may indicate that banks in those countries need to boost their profits and thus improve their capital position, or rearrange their risk-weighted assets.

Similar findings apply in the case of the correlation between bank lending rates and borrower risk. By assessing borrower risk in terms of non-performing loans (as a

[1] By taking the spread between the bank interest rate and a risk-free benchmark rate, it is possible to abstract from variations in the level of the policy interest rate between the periods considered.

CHART 13   DETERMINANTS OF HETEROGENEITY BETWEEN BANK LENDING RATES IN THE EURO AREA

(spreads in basis points)
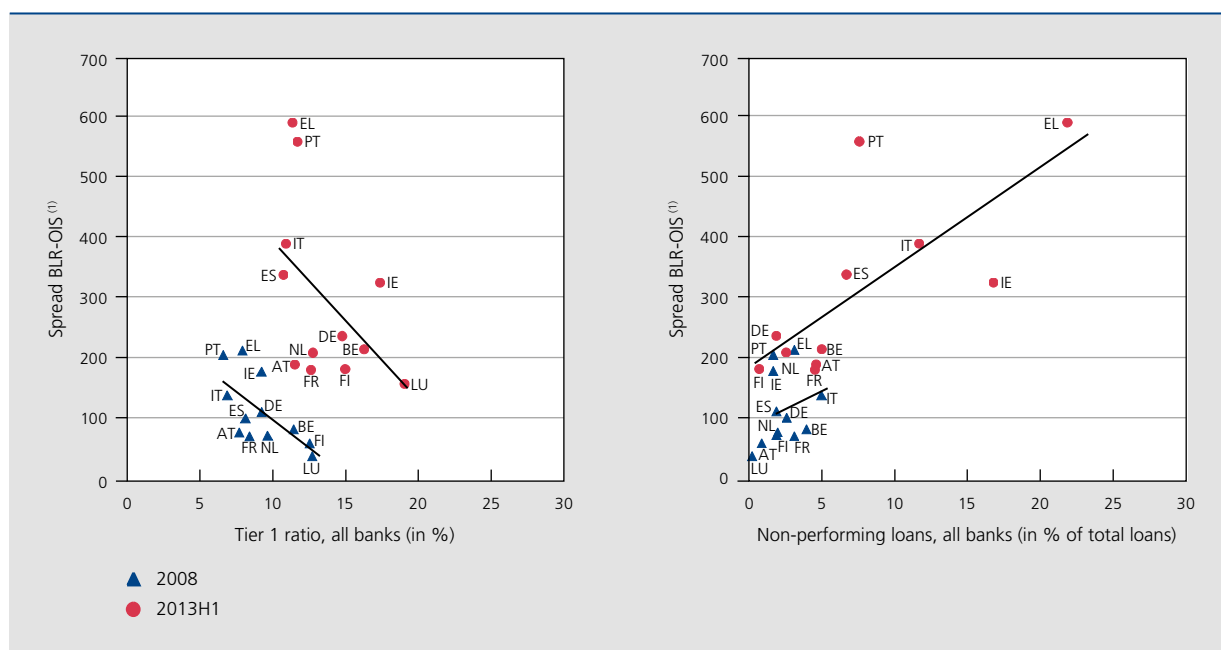
Sources: Thomson Reuters Datastream, ECB (MIR survey and consolidated banking data).
(1) Spread between the short-term cost of borrowing indicator for non-financial corporations and the three-month rate on overnight interest rate swaps (OIS).

percentage of total loans), we find that a larger proportion of non-performing loans is closely linked to larger spreads of bank lending rates[1], particularly following the crisis. During the crisis, there was a considerable increase in the variation between countries in the percentages of non-performing loans. At the same time, the regression line became somewhat steeper but the R-squared of the relationship became smaller.

The close link evident between the level of bank lending rates and these two types of factors seems to indicate that the transmission of monetary policy is influenced by the economic and financial situation in each country, particularly since the start of the crisis. In order to conduct a more structural analysis of the reasons for the wide differentials between bank lending rates in the euro area countries, we estimate an econometric model that eventually incorporates these two types of risk. The analysis is conducted for four euro area countries which recorded divergent bank lending rates during the crisis (Belgium, Germany, Italy and Spain), via vector error correction models (VECMs), which are often used to model the effects on bank interest rates[2]. Models of this type enable us to estimate the long-term relationship between benchmark rates and bank lending rates. This method also models the short-term response of bank lending rates to changes in the benchmark rate, and the adjustment towards the new long-term equilibrium. This section concentrates mainly on the estimated long-term relationship between the variables.

The analyses were conducted with the aid of the indicator of short-term borrowing costs for non-financial corporations (CBI), already mentioned: that indicator is calculated as a weighted average of the interest rates on loans with a maturity of up to one year (including long-term loans at variable interest rates with the rate initially fixed for less than one year) and on overdraft facilities granted by banks to non-financial corporations. The three-month interest rate on overnight interest rate swaps (OIS), an approximation of the expected overnight interest rate for the next three months, serves as the benchmark short-term risk-free interest rate. We estimate the VECMs with the aid of a simple two-stage methodology defined in Lütkepohl and Krätzig (2004). The estimated equation is as follows:

$$\Delta cbi_t = \alpha_{cbi}(cbi_{t-1} - \beta ois_{t-1} - \gamma) + \sum_{i=1}^{n} \delta_{cbi,t-i}\, \Delta cbi_{t-i} + \sum_{i=1}^{n} \theta_{cbi,t-i}\, \Delta ois_{t-i} + u_{cbi,t}$$

(1) High borrower risk may also imply that the bank already has risky assets on its balance sheet. This would also increase its financing costs, and therefore drive up the interest rate offered on loans.
(2) See for instance ECB (2009), Cordemans and de Sola Perea (2011).

in which cbi is the cost of borrowing indicator and ois is the market interest rate taken as the benchmark (three-month OIS), the α-coefficient represents the speed of adjustment towards the long-term equilibrium, β is the degree of transmission of the market interest rate in the long term, γ is a constant in the long-term equation reflecting the spread, δ and θ measure the short-term dynamics and u is the error term. A β-coefficient equal to 1 indicates a complete pass-through from market rates to bank lending rates in the long term. The term in brackets is the equation of cointegration, which is the long-term relationship between the interest rates, while the rest of the equation shows the short-term dynamics. The number of lags (n) used in each model is selected according to the Schwarz information criterion.

First, we apply this model to the pre-crisis period, between January 2004 and August 2008. That enables us to observe the operation of the monetary transmission mechanism in each country "in normal times", and when the divergence between rates was small. Table 1 shows the estimated long-term coefficient for the money market interest rate. Column 1 reveals that, before the crisis and on the basis of the simple model described above, transmission to the bank lending rate was largely complete and was similar for the five countries analysed: the long-term coefficient of the OIS rate was between 0.91 and 1.25, that is, very close to 1. For Spain, the coefficient of more than 1 indicates a more than complete pass-through, which means that in the long term the bank rate would rise or fall by more than the original change in the market interest rate. The adjustment towards the long-term equilibrium (α, not shown in the table) was estimated to be faster in Belgium and Germany than in Spain and Italy, whereas the estimates of the constant γ (not included in the table) diverge between the countries considered, ranging from low in Spain to high in Germany and Italy.

By extending the same analysis to the entire sample period (up to January 2014), it is possible to examine whether the crisis and the fragmentation apparent in other markets led to a structural change in the link between market interest rates and bank lending rates in each of the countries. Column 2 in table 1 shows that the transmission of the market rate in all the countries considered was hampered, although to widely varying degrees: for Belgium and Germany, the long-term coefficient on the benchmark rate declined slightly but remained high and relatively close to 1. Thus, in some countries less hard hit by the crisis, the simple model in which the bank lending rate is linked only to the short-term market interest rate can account for the behaviour of the bank rate during the crisis. In contrast, in the countries where the crisis had a more important impact, the decline in the long-term

	Bivariate, pre-crisis	Bivariate, entire sample period	All factors, entire sample period
Belgium	1.01 (0.07)	0.75 (0.04)	0.94 (0.05)
Germany	0.92 (0.04)	0.79 (0.04)	0.83 (0.02)
Italy	0.91 (0.08)	0.47 (0.17)	0.96 (0.02)
Spain	1.25 (0.07)	0.31 (0.14)	1.23 (0.04)

Source : own calculations.

pass-through was much more acute : in Italy it was down from 0.91 to 0.47, while in Spain it dropped from 1.25 to 0.31. The estimated link between the benchmark rate and the bank rate therefore appears to have been broken in the countries which were under greater stress[1]. In Belgium and Germany, the speed of the adjustment towards the long-term equilibrium slowed considerably, while it became insignificant in Spain and Italy. The constant included in the long-term equation increased in all countries, but the rise was much greater for Italy and Spain.

A more detailed analysis may help to determine the factors behind this change in the long-term pass-through of the market interest rate. To that end, and in view of the said close link between, on the one hand, the financial health of a country's banking sector and its macroeconomic situation and, on the other hand, the bank lending rate, we estimate a model with two variables representing these two main risks. Since this model is estimated at a monthly frequency, the unemployment rate is added as an indicator of the economic vulnerability of each country and as an approximation of the risk associated with the borrowers. An unweighted monthly average of five-year credit default swap (CDS) premia for the banks established in each of the countries considered is also included, to approximate the perceptions relating to the financial health of the national banking system and, hence, the financing costs that banks face (on average) in each country. It is worth remembering that the CDS premia for banks are closely correlated with government bond yields as a result of the sovereign-bank loop. The close link between the banks and the government also implies that our analysis will be unable to determine the significance of banking risk versus sovereign risk in setting

the bank lending rate[2]. To some extent, the same reservation applies to the identification of the other variables : in fact, the unemployment rate shows a strong positive correlation with the health of the financial sector in Italy and Spain[3], which implies that a strict interpretation and differentiation of the effects of each type of risk is not necessarily possible.

These two variables are included in the error correction term (the long-term relationship) and in the short-term dynamics. A dummy variable is also included in the crisis period (from September 2007)[4]. As in the case of the simple model, the emphasis is on the estimated equation for the cost of borrowing indicator, which stands as follows :

$$\Delta cbi_t = \alpha_{cbi}(cbi_{t-1} - \beta ois_{t-1} - \zeta unemp_{t-1} - \eta cds_{t-1} - \gamma)$$
$$+ \sum_{i=1}^{n} \delta_{cbi,t-i} \Delta cbi_{t-i} + \sum_{i=1}^{n} \theta_{cbi,t-i} \Delta ois_{t-i}$$
$$+ \sum_{i=1}^{n} \mu_{cbi,t-i} \Delta unemp_{t-i} + \sum_{i=1}^{n} \omega_{cbi,t-i} \Delta cds_{t-i} + u_{cbi,t}$$

The long-term coefficients of market interest rates (β) obtained from the estimated equation by using all risk factors for the entire sample period are shown in column 3 of table 1. As a result of the inclusion of the risk factors, the estimated long-term pass-through of the market interest rate returns to a level comparable to that prevailing before the crisis, which therefore shows that, strictly speaking, the fall in the market interest rate was in fact fully transmitted to the bank rate even in the countries hardest hit by the crisis, but that the presence of financial and economic risks drove up bank rates and thus masked the 'full' transmission. The speed of the adjustment towards the long-term equilibrium increased to a level comparable to that prior to the crisis in Germany, and higher in Belgium, Spain and Italy, so that all the α-coefficients of the various countries were more similar.

Table 2 shows the long-term coefficients of CDS premia for banks (η) and the unemployment rate (ζ). The problems in the banking sector were a major significant factor for the banks in determining interest rates in Germany and Italy, while they were apparently less relevant in Belgium, and of no importance in Spain. The CDS premia for banks in

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(1) In the case of Italy and Spain, that conclusion is reinforced by the insignificance of several of the estimated coefficients.

(2) In this connection, Al-Eyd and Berkmen (2013) conclude that "the information in sovereign risk appears to be captured in financial sector risk and bank bond spreads", since the coefficients of the sovereign risk variables are not significant in their analysis if the variables for the financial sector risk are included.

(3) However, the correlation is negative for both Germany and Belgium.

(4) Inclusion of the crisis variable in a bivariate model for the entire sample period does not alter the finding that the transmission of monetary policy was seriously impeded in Spain and Italy during the crisis.

Spain only have a significant, major impact on bank rates if the analysis is performed by excluding unemployment from the model. This could mean that the CDS premia for banks largely reflect the credit risk associated with the deterioration in the macroeconomic situation in Spain, as explained above. In regard to the macroeconomic risk, the unemployment rate was a relevant variable for determining the price of credit for non-financial corporations in Belgium, Spain and – especially – Italy, whereas it appeared less significant in Germany. Apart from the scale of the economic decline in the various countries and the increase in borrower risk, that may be attributable to the fact that a weak macroeconomic situation has a more pronounced effect on a fragile banking system than on a sound one.

In order to illustrate the economic relevance of these factors for bank lending rates, two counterfactual scenarios are calculated for each country on the basis of the estimated model for the entire sample period, including the two risk factors. In the first scenario, it is assumed that the CDS premia for banks remain unchanged at their August 2008 level, prior to the intensification of the financial crisis. In the second scenario, it is the unemployment rate that remains constant at the August 2008 level. All other variables (benchmark interest rate and either financing stress or the macroeconomic risk indicator) behave according to the observations, so that an implicit bank lending rate can be calculated.

Despite the simple structure of the model, it is possible to draw some cautious conclusions from these counterfactual scenarios. First, it seems that the CDS premia for banks had a greater influence at the height of the sovereign debt crisis (between 2011 and 2012), while unemployment was a bigger factor in the high bank lending rate towards the end of the sample period, particularly in 2013, owing to the higher unemployment figures

recorded at that time. Second, the increase in the CDS premia (reflecting both the credit risk and the ensuing rise in banks' financing costs) had a relatively minor influence on the bank rate payable by non-financial corporations in Belgium and Germany, in contrast to Italy where the impact was substantial. According to this model, the estimated financial health does not seem to have played a major role in determining the high bank rate in Spain. In fact, the model indicates that rising unemployment was the main factor contributing to the high level of Spanish bank rates; this result can be attributed to the steep rise in unemployment and the relatively large long-term effect of unemployment on interest rates. The level of unemployment also had a significant influence on the Italian bank rate, and a (more moderate) impact on the interest rates charged by Belgian banks. The level of unemployment also influenced the bank rate in Germany, though the effect was the opposite of that seen in other countries because German unemployment has been falling since June 2009. If the unemployment rate had remained unchanged, the German bank rate would therefore have been higher, on average, since 2011[1].

The findings described here are in line with those of Al-Eyd and Berkmen (2013). They confirm that, without controlling for factors such as bank credit risk and financing costs, the long-term transmission of market rates to bank rates was weakened during the crisis for the countries most seriously affected. In contrast to our results, they do not find that the real economy (measured on the basis of the PMI and indices of economic uncertainty) had any impact on the bank rate. The ECB (2013) draws conclusions similar to ours, which also indicate that sovereign bond yield spreads and macroeconomic and credit risk had a significant influence on bank rates in Italy and Spain, but not in France or Germany. In contrast to our findings, it seems that bank risk has no major influence on determining the interest rate, although that may be due to the inclusion of sovereign bond yield spreads in the regressions: as already stated, the sovereign-bank loop makes it difficult to distinguish between the two effects.

Overall, the results of those analyses and this article seem to suggest defective transmission of monetary policy decisions to bank rates. That is not necessarily due to problems in the transmission mechanism itself, but may be because the determination of the interest rate in some countries was greatly influenced by the serious deterioration in the financial system's soundness (and risk perception) and the national macroeconomic situation.

TABLE 2   **LONG-TERM COEFFICIENTS OF RISK FACTORS**
(standard errors are shown in brackets)

	Bank CDS	Unemployment
Belgium	0.11 (0.05)	0.15 (0.10)
Germany	0.27 (0.06)	0.07 (0.03)
Italy	0.20 (0.03)	0.23 (0.02)
Spain	0.03 (0.03)	0.16 (0.01)

Source : own calculations.

(1) Given the simplicity of the model, several caveats apply to these initial results. A more full and detailed analysis is required to truly and fully identify the contribution of the different shocks.

BELGIUM

GERMANY

SPAIN

ITALY

— Actual rate
— Rate at constant CDS
— Rate at constant unemployment
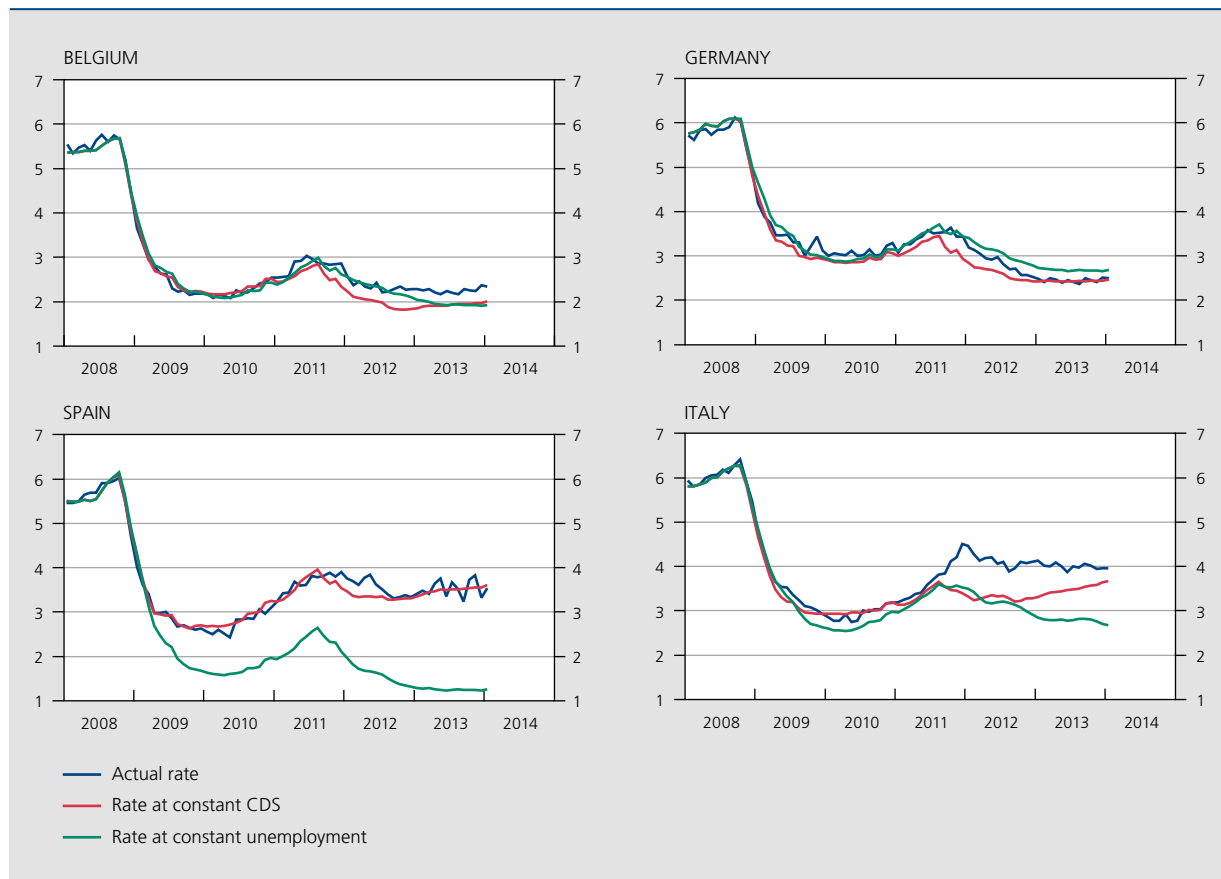
Sources: Thomson Reuters Datastream, ECB, own calculations.

Conclusions

It is evident from the analysis of the cross-border capital flows and analysis of benchmark rates and bank lending rates that the process of financial integration between the euro area countries during the initial years of monetary union went into reverse from 2007, and that reversal intensified after 2011. In view of the accumulation of large macroeconomic imbalances and substantial interbank and debt positions in an imperfect institutional framework, financial integration in the euro area proved unstable in the context of a financial crisis. Those factors were at the root of a reappraisal of the risks, causing cross-border capital flows to dry up during the recent crisis. The resulting home bias fuelled the vicious circle between governments and banks: their risk perceptions became excessively interlinked, thus exacerbating the fragmentation in the euro area.

The European authorities responded to this situation by taking action to maintain financial integration, and also adopted measures to establish a more sustainable form of financial integration in the future. That is desirable for at least two reasons. First, in a monetary union, financial integration facilitates the efficient transmission of monetary policy decisions to the various market segments of the union. Next, in the context of large external imbalances, it is vital to reactivate cross-border private financial flows in order to ensure that the imbalances can be funded on a sustainable basis. The European Union authorities intervened on two fronts. In the short term, they created financing mechanisms to ease the immediate pressure on funding and, with a longer term perspective, they adjusted the institutional framework to foster a more complete and sustainable form of financial integration in the euro area countries.

The first set of measures include the funding provided by both the Eurosystem and the European assistance mechanisms, the EFSF and the ESM. In addition, the ECB launched two programmes for the purchase of securities (SMP and OMTs) in order to counteract impediments to the monetary policy transmission mechanism and particularly the redenomination risk.

The strengthening of economic governance and the creation of the banking union are measures for the longer term. These initiatives could help to restore and improve financial integration in the euro area, respectively by addressing the underlying macroeconomic causes of the decline in financial integration, and by creating an institutional framework that fosters sound financial integration.

The introduction of the European Semester, which strengthens fiscal policy supervision, and the enhanced surveillance of internal and external macroeconomic imbalances with the launch of the macroeconomic imbalance procedure, are important steps which ought to prevent the accumulation of excessive imbalances in the future. Together with other elements that reinforce the "economic pillar" of EMU, such as the 2020 strategy, they should ultimately restore sustainable economic growth, which is an essential precondition for attracting international investors and encouraging financial integration from the demand side.

Currently, most of the countries in difficulty have largely corrected their flow imbalances, as is evident from the reversal of their current account balances, facilitating a return to the markets. However, this article shows that substantial stock imbalances still persist. A return to financial integration would help to contain the associated refinancing risk and thus ensure that the net external debt of those countries can be financed in a sustainable way.

On the supply side, the creation of the banking union, transferring national supervision and bank resolution to the European level, could lead to more efficient financial integration since it will internalise the negative externalities associated with cross-border capital flows. The establishment of the single supervisory mechanism (SSM) will also permit better identification of the risks, and should safeguard cross-border banking/financial flows and hence integration. Finally, elements of cross-border risk-sharing, such as the creation of the single resolution mechanism (SRM), will encourage *de facto* integration when it is most needed. The current legislation defines a common resolution fund financed by all banks. Ideally, the SRM should also be supported by a reliable backstop in order to guarantee its credibility and ensure that it can cope with systemic shocks.

These efforts to create a genuine banking union are an important step forward in the institutional framework of the euro area, and are expected to promote and improve financial integration. Nevertheless, integration could ultimately benefit from a more broadly defined financial union (including capital markets and non-bank financial intermediation), which would be an even better guarantee of the free and efficient allocation of capital within the Monetary Union. In addition, EMU could also benefit from deeper integration, to prevent financial integration from outpacing the integration in other areas and thus to prevent it becomes self-defeating.

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