

Forster , Katrin; Vasardani, Melina A.; Ca' Zorzi, Michele

**Research Report**

## Euro area cross-border financial flows and the global financial crisis

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**NO 126 / JULY 2011**

**EURO AREA  
CROSS-BORDER  
FINANCIAL FLOWS  
AND THE GLOBAL  
FINANCIAL CRISIS**

by Katrin Forster,  
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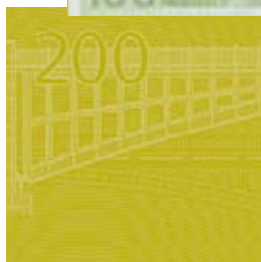
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# EURO AREA CROSS-BORDER FINANCIAL FLOWS AND THE GLOBAL FINANCIAL CRISIS<sup>1</sup>

by Katrin Forster, Melina Vasardani  
and Michele Ca' Zorzi



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**Address**

Kaiserstrasse 29  
60311 Frankfurt am Main, Germany

**Postal address**

Postfach 16 03 19  
60066 Frankfurt am Main, Germany

**Telephone**

+49 69 1344 0

**Internet**

<http://www.ecb.europa.eu>

**Fax**

+49 69 1344 6000

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## ABSTRACT

This paper analyses the impact of the global financial crisis on euro area cross-border financial flows by comparing recent developments with the main pre-crisis trends. Two prominent features of the period of turmoil were (i) the sizeable deleveraging of external financial exposures by the private sector and, in particular, the banking sector from 2008 and (ii) the significant changes in the composition of euro area cross-border portfolio flows, as investors shifted from equity to debt instruments, from long-term to short-term debt instruments and from private to public sector securities. Since 2009 such trends have started reversing. However, as balance sheet restructuring by financial and non-financial corporations continues, cross-border financial flows have remained well below pre-crisis levels. The degree of resumption and volatility of cross-border financial activity may have a major bearing on growth prospects for the euro area and may also matter from a financial stability perspective. We argue that the recent experience, first of extraordinary growth and then of scaling down of international financial activity, calls for enhanced monitoring of developments in cross-border financial flows so that the underlying risks to the domestic economy stemming from the financial sector can be better assessed. Looking forward, successful implementation of policy actions to promote macroeconomic discipline and enhance financial regulation and supervision could influence, *inter alia*, the composition and volume of cross-border capital flows, contributing to a more efficient and sustainable allocation of resources.

JEL code: E44 E58 F33 F42.

Keywords: global financial crisis, euro area, capital flows.

## NON-TECHNICAL SUMMARY

The global financial crisis that started in 2007 and intensified after the collapse of Lehman Brothers in September 2008 abruptly interrupted the more than two-decade-long process of increasing world financial integration. With the complex web of global interlinkages contributing to the spreading of the turmoil from the United States to the rest of the world, the crisis led to unprecedented declines, or even reversals, in global cross-border capital flows. Although financial markets have bounced back from their lows, cross-border capital flows have generally remained well below their pre-crisis levels.

The advanced economies, which have traditionally dominated global capital flows and were considered immune from sudden capital withdrawals, were particularly affected. Prior to the crisis, the euro area current account was close to balance, with cross-border financial flows mostly cancelling out when all components are summed. In net terms this indicated that the euro area was neither receiving nor exporting large capital flows, although significant developments were occurring in gross terms. The financial crisis, however, affected not only those countries with large current account deficits but all countries with open capital accounts.

The aim of this paper is to highlight the unprecedented adjustments triggered by the financial crisis in euro area cross-border financial flows. We find that during the turmoil there was a very sizeable scaling-down of gross external asset holdings across all types of investors and the whole range of instruments, amid soaring risk aversion, high liquidity needs, and balance sheet restructuring. Flows reversed and their volatility markedly increased, with potentially adverse effects for the real economy and financial stability. The strong increase in home bias and flight-to-safety behaviour was also manifested in shifts in the composition of cross-border financial flows, from equity to debt instruments, from long-term to short-term debt instruments and from private sector to public sector debt. At the same time, deleveraging activity in relation

to cross-border loans and deposits reached high levels. The financial crisis also changed the sectoral breakdown of the euro area's net external borrowing, with the government sector becoming the main, and for most of 2010 the only, net borrower from abroad. This was in line with the rise in government borrowing worldwide (and especially in the advanced economies), which was partly driven by higher financing needs on the part of governments in response to the crisis, but also by heightened global risk aversion on the part of investors.

As the global economy started to show signs of stabilisation in 2009 some of the trends in gross cross-border financial flows observed during the crisis abated or even reversed, towards the end of the year, particularly in the case of portfolio and direct investment. As regards other investment, deleveraging in relation to cross-border loans and deposits continued apace in 2009, with some signs of a normalisation, both on the asset and on the liability sides, only emerging in the first half of 2010.

Looking ahead, it is still uncertain which trends will prevail in the near future. Investors appear to have become more selective in qualitative terms, for example by increasingly differentiating across countries in relation to government debt securities. While the global economic outlook and fiscal developments are expected to play a key role, overall international financial flows could still be affected by the balance sheet restructuring of financial and non-financial corporations in advanced economies, including the euro area. Following the surge in international financial activity prior to the crisis, the recovery may not be synchronised across different world regions, as shown by the stronger rebound of cross-border flows to emerging markets.<sup>1</sup>

<sup>1</sup> Rottier and Veron (2010, p.3) illustrate how the share of emerging markets in the 100 largest banks has been steadily increasing and has overtaken that of Europe. These banks have engaged in a limited degree of cross-border activity, but this could change. According to these authors, one can expect that "the combination of deleveraging in the West and continued financial development in the emerging economies will certainly reinforce the trend toward multipolarity".

The significant changes in euro area cross-border financial flows brought about by the global financial crisis also have important policy implications. The reversal and heightened volatility of financial flows may have adverse impacts on short- and long-term growth prospects and may also matter from a financial stability perspective. This calls for expanding the analysis of cross-border financial flows – a challenging task, as is widely recognised. Apart from providing a better understanding of the financial transmission channel during financial crises, the identification of significant changes in cross-border financial flows and stocks could be an important element in the early detection of the emergence and build-up of macroeconomic risks and risks to financial stability. As this paper argues, along the lines of a burgeoning literature, the monitoring should be extended to developments in gross flows and not just net flows, as the latter may mask the accumulation of macroeconomic imbalances and financial risks.

This paper also underscores the need for policy actions to promote macroeconomic discipline and enhance financial regulation and supervision. The impact of the crisis on cross-border financial flows has shown that sound and stable macroeconomic policies are both important elements in keeping capital flows on a sustainable path, while preserving the gains from financial openness and mitigating the adverse consequences of turbulent times. In addition, the patterns of cross-border financial flows seen during the financial crisis call for broadening the scope of financial supervision and regulation to also include other financial intermediaries apart from banks. Prudential regulation is likely to influence the composition and, to a smaller degree, the volume of cross-border financial flows, leading to the building of additional buffers in the financial sector that could help reduce cross-country and cross-sectoral financial fragilities.



## I INTRODUCTION

Economies around the world were severely hit by the global financial crisis, particularly after it intensified in September 2008. One consequence of the crisis was that the two-decade continuous rise in international financial flows was not just interrupted, but sizeable reversals and unwinding of international exposures by the private sector and more markedly by banks were observed. As those flows have been traditionally dominated by advanced economies, it is not surprising that these were the countries and regions most affected by the crisis.

There is a burgeoning literature on the impact of the financial crisis on cross-border capital flows, reviewing the experience of the United States (e.g. Bertaut and Pounder (2009)) or taking a global perspective (e.g. Forbes and Warnock (2011), IMF (2010b), IMF (2011), OECD (2011) and Milesi-Ferretti and Tille (2011)). Other studies focus instead on banking flows, as the banking sector has significantly reduced international financial claims (e.g. Cetorelli and Goldberg (2011) and the Bank for International Settlements (2009a, b, c and d)). This paper is however the first to review the impact of the global financial crisis on all cross-border financial flows from a euro area perspective. Contrasting the recent developments with the main trends prior to the crisis and covering the full set of available indicators, relating to instruments as well as sectors, it highlights the unprecedented adjustments triggered by the financial crisis. Like other recent studies (Forbes and Warnock (2011), Broner et al. (2010) and Milesi-Ferretti and Tille (2011)), it shows that it is not enough to examine cross-border financial flows in net terms, but that it is necessary to investigate “gross” measures too, i.e. the asset and liability sides separately, as this may provide additional insights on the gradual build up of financial vulnerabilities.

The paper is structured as follows. Chapter 2 presents some stylised facts illustrating the rising importance of cross-border financial flows prior to the crisis and summarises the main

channels through which those flows can affect individual economies. Chapter 3 reviews the main pre-crisis trends in euro area cross-border financial flows, examines the significant changes brought about by the crisis and discusses recent developments and future prospects. Finally, Chapter 4 explores how cross-border financial flows can help policymakers in their assessments and seeks to identify possible lessons.

## 2 THE INCREASING ROLE OF CROSS-BORDER FINANCIAL FLOWS

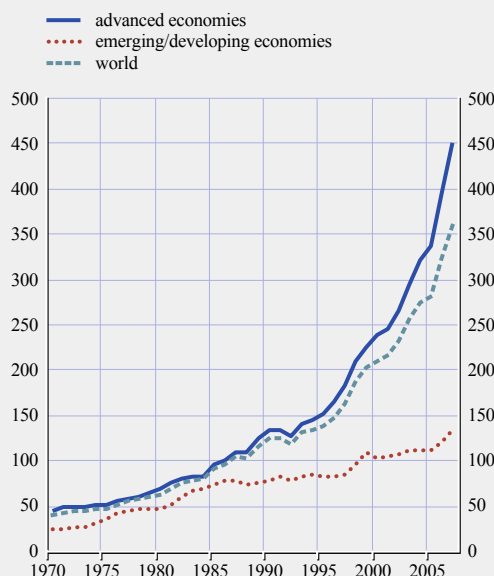
The global financial crisis that started with the meltdown of the United States sub-prime mortgage market in 2007 was preceded by more than two decades of increasing world financial integration. During that period, advanced and emerging economies became more accessible to a growing array of financial investors through the lifting of capital restrictions, and more interlinked through larger cross-border financial holdings. Offering new opportunities to diversify risk internationally, those developments, together with advances in financial innovation, resulted in higher availability of capital worldwide, contributing to a better allocation of resources while enabling a strong global economic expansion to take place. Rising financial integration and the creation of innovative financial instruments were the underlying factors that allowed private economic agents to gradually increase their leverage, which, at the aggregate level, also meant that markets and countries were becoming more prone to domestic and external shocks. Providing the background for the analysis of the impact of the financial crisis on euro area cross-border financial flows, this chapter briefly looks at the main drivers underlying the rise in international financial flows prior to the crisis. In parallel, it summarises the benefits and costs of financial integration by also providing an overview of the main channels through which cross-border financial flows affect the domestic economy.

### 2.1 GLOBAL FINANCIAL LIBERALISATION AND INNOVATION

The degree of global financial market integration has increased significantly since the late 1980s. Total cross-border financial assets and liabilities almost tripled from 125% of global GDP in 1990 to 360% in 2007, with the advanced economies<sup>2</sup> accounting for the largest part of this increase (see Chart 1). The rapid expansion in cross-border financial activity was broad-based

Chart 1 International financial integration

(sum of outstanding amounts of cross-border assets and liabilities as a percentage of GDP; unweighted averages)



Sources: ECB staff calculations based on the updated and extended version of the External Wealth of Nations Mark II database developed by Lane and Milesi-Ferretti (2007). Last observation refers to 2007.

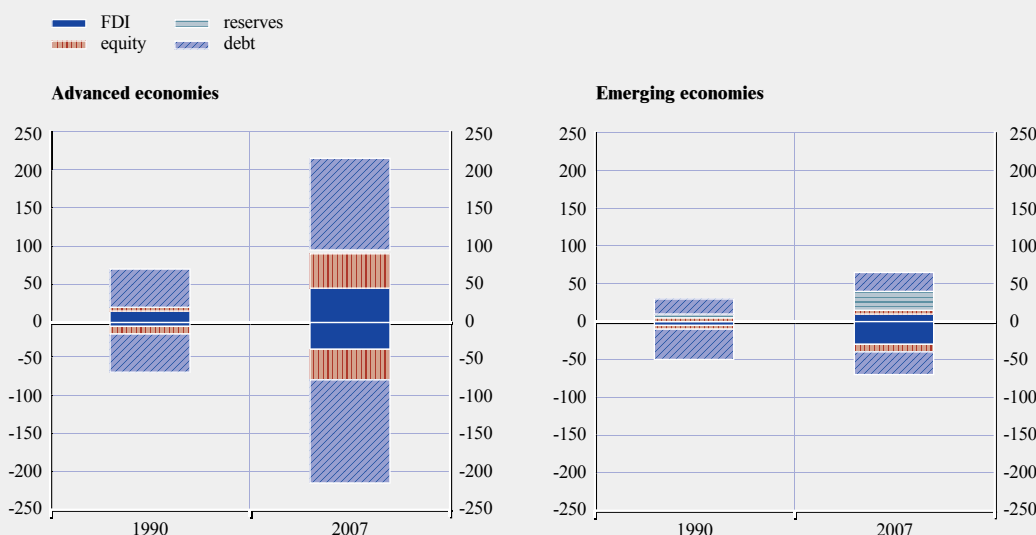
across different types of investment (see Chart 2) and was mainly fostered by the liberalisation of national financial markets, a process which was initiated in the advanced economies but gradually spread to the emerging world. The progressive easing or abolishing of capital controls and other financial account restrictions, together with an improving economic environment and international investment prospects, encouraged capital to flow around the global economy.

The liberalisation of global financial markets was also accompanied by a process of financial innovation and deepening, which gathered pace in the years prior to the global financial crisis. The establishment of increasingly liquid markets

2 Country groups are according to the IMF World Economic Outlook classification. The group of advanced economies includes the euro area, the United States, Japan, the United Kingdom, Canada, Australia, Denmark, Iceland, Israel, New Zealand, Norway, Sweden and Switzerland, as well as the newly industrialised Asian countries Korea, Singapore, Taiwan and Hong Kong.

**Chart 2 International financial integration by type of investment**

(sum of outstanding amounts of cross-border assets and liabilities as a percentage of GDP)



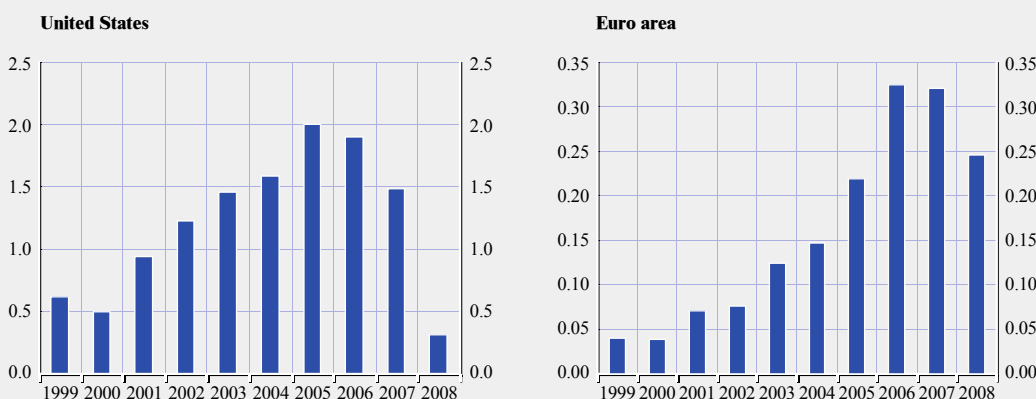
Sources: ECB staff calculations based on the updated and extended version of the External Wealth of Nations Mark II database developed by Lane and Milesi-Ferretti (2007). Last observation refers to 2007.

for new financial instruments, such as securitised debt and other derivative contracts – issued in part by new financial entities, such as special purpose vehicles (SPVs) – largely accounted for the massive surge in cross-border purchases of financial assets in the major advanced economies, in particular over the period from 2005 to mid-2007. Originally intended to improve the

distribution of risk across savers, such instruments were extensively used by a number of financial institutions, including hedge funds and private equity funds in search of higher returns. Chart 3 shows the rampant growth, first in the United States and somewhat later in the euro area, in the issuance of asset-backed securities (ABSs) and mortgage-backed securities (MBSs) over the

**Chart 3 Total issuance of ABSs and MBSs**

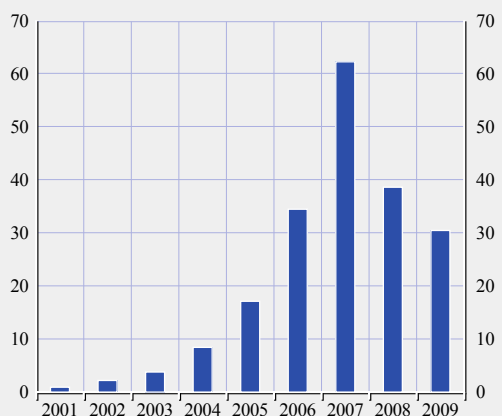
(USD millions)



Sources: Poloni and Reynaud (2009).

**Chart 4 Global credit derivatives market**

(USD trillions)



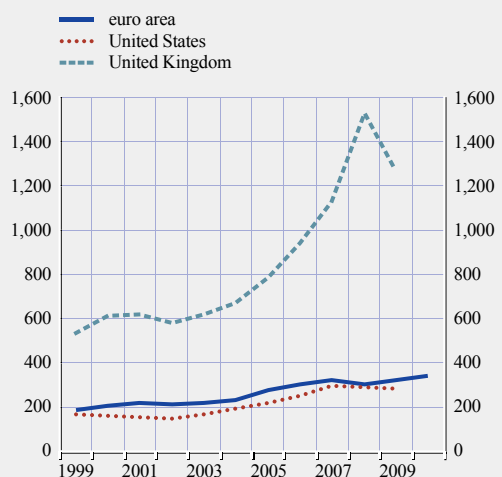
Source: ISDA.

past ten years (Moutot and Vitale (2009)), while Chart 4 illustrates the sudden, sharp increase in global credit derivatives over the three years preceding the crisis.

Overall, international financial integration, as measured by the sum of cross-border assets and

**Chart 5 Financial integration of selected advanced economies in the years prior to the crisis**

(sum of outstanding amounts of cross-border assets and liabilities as a percentage of GDP)



Sources: ECB and Haver Analytics.  
Note: Last observation refers to 2010, except for the United States and United Kingdom (2009).

liabilities, increased from 188% in 1999 to 325% of GDP in 2007 for the euro area, this being comparable to the upward trend seen in the United States, while the rise was even sharper in the case of the United Kingdom. This is not surprising, considering that the financial sector represents a high share of total value added in the United Kingdom and is highly exposed to cross-border activities, given its international intermediation role (see Chart 5).

## 2.2 BENEFITS AND COSTS OF INTERNATIONAL FINANCIAL INTEGRATION<sup>3</sup>

The increase in global financial integration due to financial liberalisation and innovation, as documented by the rapid pre-crisis expansion of cross-border financial flows, highlights the rising weight of international financial transactions relative to trade transactions. At least in the short to medium term, this makes cross-border financial flows potentially as important as trade flows in determining the dynamics of exchange rates and interest rates (Moutot and Vitale (2009)).

While the more recent debate has naturally focused on the destabilising impact of the global financial integration process, both as an underlying component and amplifier of the international transmission mechanism, the financial integration process has also clearly been beneficial. The case for greater financial integration and openness generally revolves around three main considerations:

- (1) *Benefits from international risk sharing.* By allowing a country to borrow in “bad” times and lend in “good” times, financial openness enhances consumption and income risk-sharing, while reducing the volatility of consumption growth. This “counter-cyclical role” of world capital markets is particularly important if shocks are temporary. Besides, improved risk-sharing enhances in turn the ability of countries to specialise in

<sup>3</sup> This section mainly draws from Agénor (2003) and González-Páramo (2010).

their most productive sectors, leading to increased economic efficiency.<sup>4</sup>

- (2) *Positive impact on domestic investment and growth.* The ability to draw on an international pool of resources should stimulate domestic investment and growth. While this channel mostly applies to emerging countries, whose investment is no longer constrained by the restricted pool of domestic savings, the financial integration process also amplifies growth opportunities in developed countries. In addition to the benefits from improved risk-sharing, cross-border banking enhances the ability of countries to specialise in their most productive sectors. This leads to increased economic efficiency, reduces the risk of crisis due to the mis-pricing of investment risk<sup>5</sup> and ultimately fosters an optimally diversified economy, which may be expected to be less prone to recessions.<sup>6</sup>
- (3) *Greater depth of the domestic financial system.* A common argument in favour of financial openness is that it increases the depth and breadth of domestic financial markets and makes the financial intermediation process more efficient by lowering costs and “excessive” profits associated with monopolistic or cartelised markets. For example, it is argued that foreign bank penetration may improve the quality and availability of financial services and serve to foster the development of the domestic banking supervisory and legal framework. Furthermore, pre-crisis research had suggested that the cross-border diversification of large banks improves the soundness of the banking system by making individual bank failures less likely.

However, the recent crisis has also shifted the focus of attention back to costs and the potentially destabilising impact of financial integration. While costs and risks had been mostly discussed with regard to emerging economies, they also appear to be relevant for advanced economies and at the global level.<sup>7</sup>

- (1) *Costs from misallocation of resources.* Cross-border flows may be channelled to the less productive sectors and fuel domestic bubbles. For example, external credit may be channelled to non-tradable sectors, contributing to construction booms or supporting consumption over productive investment, in which case it is ultimately detrimental to the economy’s potential growth.
- (2) *Costs from pro-cyclicality and volatility of cross-border flows.* Pro-cyclical and highly volatile short-term financial flows, including those owing to herding and contagion effects, may heighten the risk of economic and financial disruption, for example via a sudden halt in flows from foreign banks. Furthermore, large financial inflows may also have undesirable macroeconomic effects through other channels, including rapid monetary expansion (due to the difficulty and costs of pursuing sterilisation policies), inflationary pressures (resulting from the effect of financial inflows on domestic spending and asset prices) and price competitiveness losses (through their impact on the real exchange rate). While, under a flexible exchange rate, growing external deficits may eventually lead to a realignment in relative prices and induce self-correcting movements in trade flows, under a fixed exchange rate regime (or a monetary union for that matter), the continuous gradual losses in price competitiveness eventually erode the confidence of investors in the long-term prospects of the economy. The self-adjustment mechanism, which should operate through the impact of current account deficits on monetary aggregates, may be impaired or considerably delayed in the presence of financial inflows.

4 Kalemli-Ozcan, Sorensen and Yosha (2003).

5 Giannetti and Ongena (2009).

6 Manganelli and Povov (2010).

7 For an early perspective on the challenges for and resilience of the global financial system in the light of the globalisation process, see Greenspan (1997).



(3) *Other potential costs.* As discussed in Moutot and Vitale (2009), large cross-border financial flows may have a sizeable impact on the price of assets by affecting both their supply and demand, as well as the premia that investors require to hold them (see in particular Bernanke (2007)). This in turn can contribute to making the link between money and prices unstable in the short to medium term, so that the direct interpretation of monetary aggregates becomes more difficult.

Finally, a more controversial element in the discussion is the extent to which financial flows may be a destabilising force per se, or whether they merely represent a counterpart of other macroeconomic imbalances. For any given country with a current account deficit, for instance, keeping reserves constant would mean that the country must cover its financing needs by tapping international capital markets. Such an inflow of capital may, however, protract (or aggravate) the current account imbalance. Similar questions could be posed at the global level. To what extent have the rise in global liquidity and in cross-border flows constituted an opportunity to raise finance and contributed to optimising intertemporal consumption? Could cross-border financial flows have also destabilised the global economy and led to excessive current account divergence? What is the relationship between the increase in financial globalisation and global imbalances, considering that the latter are persisting while international cross-border activity and global liquidity appear more subdued?<sup>8</sup>

While these questions are beyond the scope of this paper, one has to recognise how closely these issues are interlinked.<sup>9</sup> Similar arguments can also be made with regard to banking integration, where lack of transparency, wrong incentives, sub-optimal regulation and flawed banking business models may have been the main source of financial instability.<sup>10</sup>

<sup>8</sup> For a discussion on how global imbalances, following a temporary correction that coincided with the financial turmoil, may still pose significant risks to the global economy, see ECB (2010b).

<sup>9</sup> It has been argued for instance that the pre-crisis boom in the US real estate and securitisation markets reflected to some extent the high foreign demand for safe assets resulting from “excess world savings” in the context of persistent global imbalances. Strong foreign demand for financial assets not only pushed down the United States’ risk-free interest rate, but also compressed the risk premia on risky assets. The low cost of financing fostered in turn an increase in the level of leverage of the domestic financial sector, which exacerbated systemic risk.

<sup>10</sup> Altunbas et al. (2011) analyse measures of bank distress during the recent turmoil for a large panel of institutions, showing there is a correlation with their pre-crisis business models.

### 3 THE FINANCIAL CRISIS AND EURO AREA CROSS-BORDER FINANCIAL FLOWS

This chapter describes the main trends of euro area cross-border direct, portfolio and other investment transactions prior to the crisis and thereafter. A stock analysis complements the flow analysis, while special issues, such as intra-euro area financial activity and the international dimension of bank deleveraging, are discussed in separate boxes.

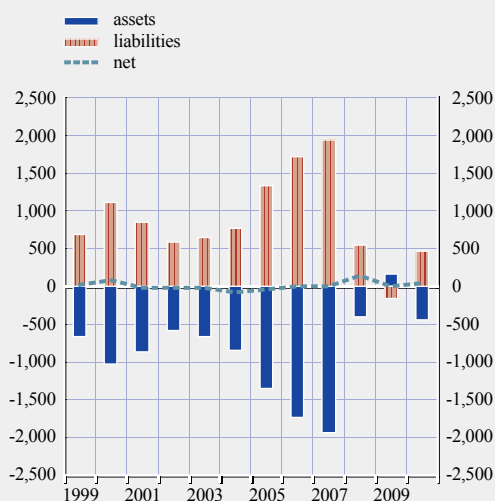
#### 3.1 MAIN TRENDS PRIOR TO THE CRISIS

Against the backdrop of increasing global financial liberalisation and innovation and in line with similar developments in other advanced economies, euro area cross-border financial flows strongly accelerated in the years prior to the financial crisis (see Chart 6). This was reflected both in increasing (net) purchases by euro area residents of foreign assets (captured by the asset side of the financial account) and in rising financial investment by non-residents in the euro area (captured by the liability side).<sup>11</sup> However, the high correlation between the flows recorded on the asset side of the euro area financial account and those recorded on the liability side<sup>12</sup> had resulted in net flows being close to balance for most of the period since the introduction of the euro.

The introduction of the euro in 1999 has certainly been another factor boosting euro area cross-border financial flows.<sup>13</sup> Relevant here is the increased international role of the euro and the growing international role of euro area banks. A remarkable feature is however, that in

Chart 6 Euro area financial account

(EUR billions; annual flows)



Source: ECB.  
Note: Inflows (+); outflows (-).

spite of all the globalisation trends and the rise of new opportunities in emerging markets, the introduction of the euro has fostered even stronger cross-border financial integration in Europe (Box 1).<sup>14</sup>

- 11 Following the balance of payments convention, outflows (e.g. increases in euro area residents' assets abroad) are depicted with a negative sign, while inflows are recorded with a positive sign.
- 12 For simplicity, we use the term "gross flows" when referring to the financial flows on either the asset or the liability sides of the financial account separately, and the term "net flows" when referring to their balance.
- 13 De Santis (2010) argues that the monetary policy framework of the euro area and the establishment of EMU help explain the changes in portfolio asset allocation in the euro area over the turbulent period 1999-2001. For a pre-crisis comparison between the degree of financial integration in Europe and Asia see Eichengreen and Park (2003).
- 14 For more details, see ECB (2008).

#### Box 1

##### CROSS-BORDER FINANCIAL INTEGRATION OF THE EURO AREA

The EMU process and the subsequent introduction of the euro in 1999 had a catalytic effect on cross-border financial activity in Europe. In this box, we review the strong pre-crisis increase in intra-euro area financial activity, go on to assess the geographical breakdown of euro area financial assets and conclude by examining the impact of the crisis on different segments of euro area financial markets.

## Intra-euro area financial activity

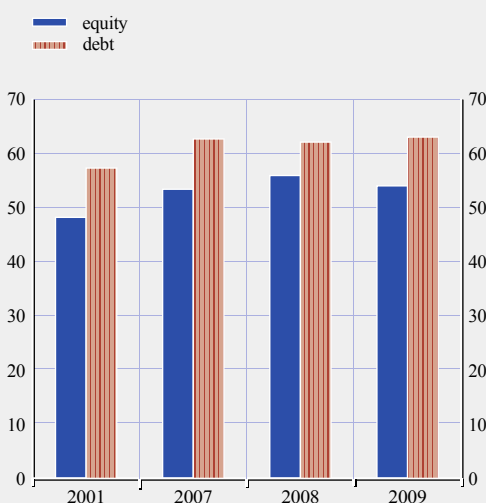
After the launch of the euro, foreign direct investment within the euro area increased, as the elimination of exchange rate risk and the reduction in transaction, fixed and financing costs facilitated the reallocation of capital among euro area countries, particularly in the manufacturing sector. The creation of common technological platforms, the potential benefits of greater diversification and an appetite for higher expected returns were further factors that help explain the expansion of intra-euro area portfolio investment (see Chart A).

In terms of product composition, this phenomenon was broad-based as intra-euro area portfolio holdings increased, both in terms of equity and debt instruments (corporate and government bonds) (De Santis (2010), De Santis and Gerard (2009) and Baele et al. (2004)). Following the introduction of the euro, residents of the euro area diversified their sovereign bond holdings across different euro area countries, thus contributing to the decline of yield spreads vis-à-vis German government bonds to very low levels (see Chart B) until the intensification of the global financial crisis in September 2008. The explanations generally put forward for this were: (i) the anchoring of inflationary expectations owing to the credible common monetary policy; (ii) the elimination of exchange rate risk premia; (iii) positive confidence effects of EMU membership on creditworthiness; and (iv) the progress made in some countries in real convergence (notwithstanding some concerns of rising risks of overheating).

Over this period, intra-euro area bank exposure also increased remarkably, with euro area credit institutions increasingly allocating available savings to euro area countries, particularly those that needed to finance large, either public or private, debts. Countries such as Greece, Ireland,

**Chart A Intra-euro area portfolio holdings of debt and equity**

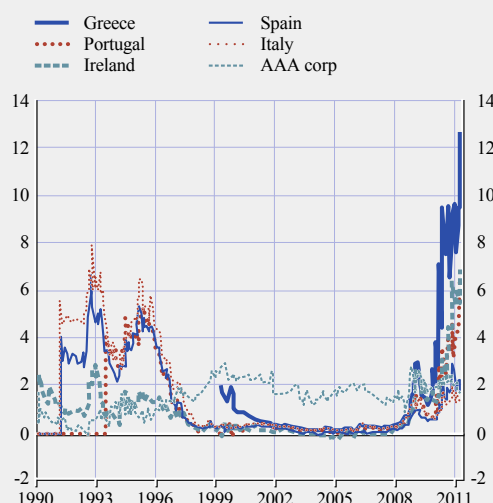
(as a percentage of total holdings; EUR billions)



Sources: CPIS and ECB staff calculations.

**Chart B Sovereign bond yield spreads of selected euro area countries**

(in basis points; end-of-month data for the period 1990 to end-April 2011)



Sources: Datastream and ECB staff calculations.

Notes: Bond yield spreads vis-à-vis the German 10-year government bond. "AAA corp" denotes euro area AAA-rated corporate bond yields (maturity 7-10 years).

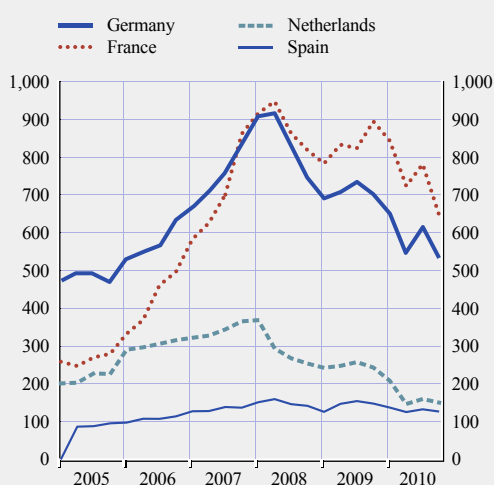
Italy, Portugal, and Spain, indeed attracted sizeable amounts of additional funds in the years prior to the crisis, mostly from German and French banks (see Chart C). This coincided with the period when German and French banks took a very active role internationally by expanding their cross-border operations as well as increasing lending through local subsidiaries and branches. This expansion was, however, even stronger within the euro area, with the claims of German and French banks on the aforementioned countries increasing from about 15% to about 20-25% of their total foreign claims (see Chart D).

Prior to the crisis increased intra-euro area financial activity led to a further disconnect between domestic savings and investment (Blanchard and Giavazzi (2001)). Intra-euro area financial flows, coupled with flows from the rest of the world, made possible the financing of large current account deficits in some member countries (European Commission (2009 and 2010)) for a prolonged period of time. While expectations of convergence and low financing costs contributed to rising current account divergence in the euro area (Ca' Zorzi and Rubaszek (2011)), structural reforms were often inadequate to support growth over long-term horizons. However, following the financial crisis, the degree of segmentation of euro area bond markets increased, as pressures on sovereign debt intensified in some countries.

A range of indicators show that, in euro area countries with large current account deficits, the banking sector has acted as an intermediary, turning inflows of capital into household and corporate debt. In many cases, relatively short-term financing, in the form of cross-border deposits from the rest of the world (a more volatile source of finance than domestic deposits), has accounted for the largest part of the increase in the net external liability positions of the respective countries, while portfolio investment and, especially, foreign direct investment have played a secondary role (European Commission (2009)).

**Chart C Foreign claims of selected euro area countries vis-à-vis the group of countries comprising Greece, Ireland, Italy, Portugal and Spain**

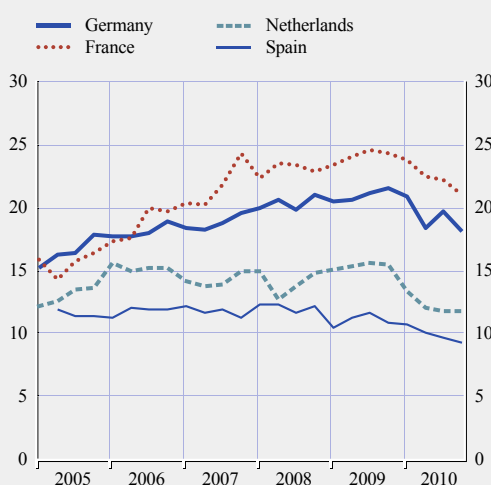
(USD billions)



Sources: BIS consolidated banking statistics and ECB staff calculations.

**Chart D Foreign claims of selected euro area countries vis-à-vis the group of countries comprising Greece, Ireland, Italy, Portugal and Spain**

(as a percentage of total foreign claims)



Sources: BIS consolidated banking statistics and ECB staff calculations.

### Geographical breakdown of euro area financial assets

The increased financial integration in the euro area was matched by the abundant flow of capital from the euro area countries to Central Europe and South-Eastern Europe (CESEE). These flows were particularly large and financed sizeable current account deficits that persisted until the start of the global financial turmoil, before reversing in some cases rather suddenly and sharply (Ca' Zorzi et al. (2011)). Development of the financial sector and the widespread ownership by euro area banks of the CESEE banks appear to have contributed significantly to boosting credit growth and supporting economic activity in several CESEE countries before the crisis (Gardo and Martin (2010)). As the crisis unfolded, however, these factors had stabilising effects, as parent banks had the incentive to preserve the viability of their subsidiary banks. Moreover the European Bank Coordination Initiative, known as the “Vienna initiative”, appears to have helped limit the degree of retrenchment of the euro area banking sector, particularly from the subsidiaries and offices situated in the most vulnerable countries, where IMF/EU programmes were already in place (Cetorelli and Golberg (2011), Constâncio (2010), Ostry et al. (2010), Milesi-Ferretti and Tille (2011) and De Haas et al. (2011)).

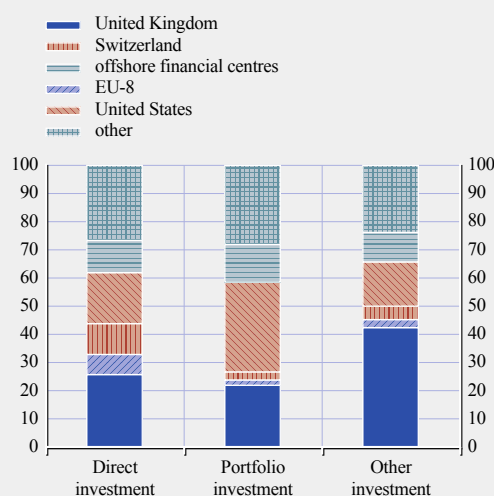
Although the flows to CESEE were important for the recipient economies and for the balance sheets of individual euro area parent banks, for the euro area as a whole they represented a small fraction of its international exposure, as illustrated by the geographical breakdown of euro area financial assets (see Chart E). Euro area financial assets prior to the crisis were indeed mostly held vis-à-vis other major advanced economies, primarily the United Kingdom and the United States, as well as offshore financial centres. This geographical distribution did not change with the financial crisis.

### Impact of the crisis on different segments of euro area financial markets

The crisis affected the various sectors of the financial markets in Europe to very different degrees (ECB (2010a)). The most integrated ones, such as the money markets, showed clear signs of retrenchment within national borders. The bond and retail banking markets, by contrast, were less affected, but also witnessed some strains. As the financial crisis unfolded and fiscal problems in some European countries escalated, the process of euro area financial integration, in particular of sovereign bond markets, witnessed a partial moderation in 2009 (Balli et al. (2010)). Sovereign bond yield spreads (vis-à-vis the German bond) widened across euro area countries, while foreign and resident investors displayed flight-to-quality behaviour, influenced by a reassessment of borrower's creditworthiness, partly reshuffling

**Chart E Geographical breakdown of euro area financial assets by main instrument, as at the end of 2007**

(outstanding amounts)



Sources: ECB staff calculations. The EU-8 aggregate includes the Czech Republic, Hungary, Poland, Slovak Republic, Estonia, Latvia and Lithuania.



their portfolios to increase the weight of specific euro area government bonds (ECB (2010a)).<sup>1</sup> Meanwhile, the financial crisis revealed some potentially destabilising effects of strong intra-euro area, and more broadly intra-European, bank linkages, since the latter acted as transmission channels, amplifying and propagating the shock and turning it into a systemic event. Finally, equity markets did not show any appreciable retreat from cross-border integration, possibly owing to institutional features such as the fact that they are more transparent and more liquid than debt markets.

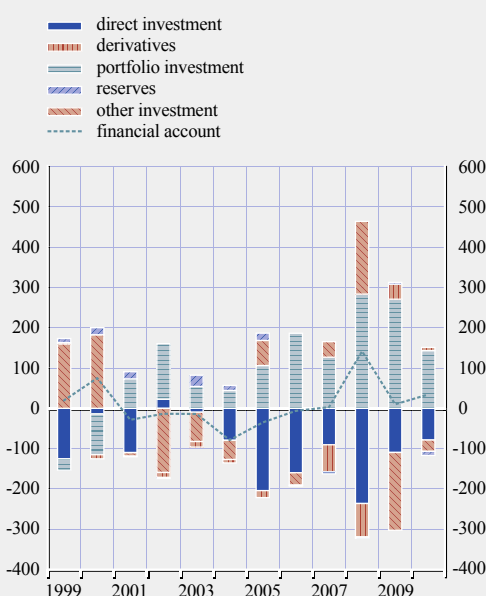
All in all, the reversal of some volatile and short-term forms of finance made countries that had heavily relied on these flows highly vulnerable to changing global financial conditions and less able to sustain their external asset positions.

1 For more details on the impact of the crisis on euro area debt market as a whole, see Section 4.

A broad overview of the financial account since 1999 allows one to trace the main trends in the euro area balance of payments (see Chart 7). A persistent feature has been that the euro area has received, repeatedly over the years, net inflows of portfolio investment that have been counterbalanced by net outflows of direct investment.

**Chart 7 Components of the euro area financial account**

(EUR billions; net annual flows)



Source: ECB.  
Note: Inflows (+); outflows (-).

Direct investment was largely driven by equity capital and, secondarily, by re-invested earnings and other capital, the latter consisting mainly of inter-company loans.<sup>15</sup> Portfolio investment generally reflected inflows in both equities and bonds and notes, while money market instruments (i.e. debt securities with an initial maturity of less than one year) accounted for a relatively minor share of total net portfolio investment flows in most years (see Chart 8). Financial derivatives<sup>16</sup> and official reserves typically played a minor role. Finally, other investment, a residual component in the financial account mostly comprising loans, currency and deposits<sup>17</sup>, was more volatile, being large and positive (i.e. net inflows) in 1999 and 2000 and sizeable and mostly negative (i.e. net outflows) over the period from 2002 to 2007 (see Chart 9).

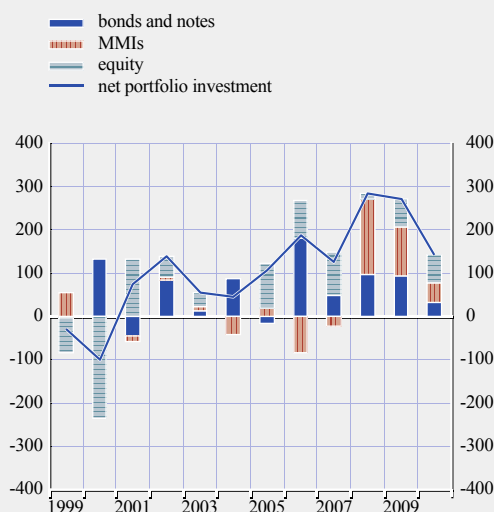
15 The “other capital” category of direct investment covers all financial transactions (borrowing and lending of funds) between direct investors and their subsidiaries, branches and associates. In the case of transactions between affiliated banks (monetary financial institutions (MFIs)), or special-purpose entities (SPEs) whose sole purpose is to act as a financial intermediary (e.g. brokers), and other financial intermediaries, direct investment transactions are confined to those that are permanent in nature (debt or equity).

16 Financial derivatives include options, futures, swaps, forward foreign exchange contracts and credit derivatives.

17 Other investment includes all financial transactions not covered by direct investment, portfolio investment, financial derivatives or reserve assets. It can be sub-divided into (i) trade credits, (ii) loans, currency and deposits and (iii) other assets/other liabilities. Repo-type agreements that are treated as collateralised loans in the balance of payments statistics are also included.

**Chart 8 Portfolio investment by instrument**

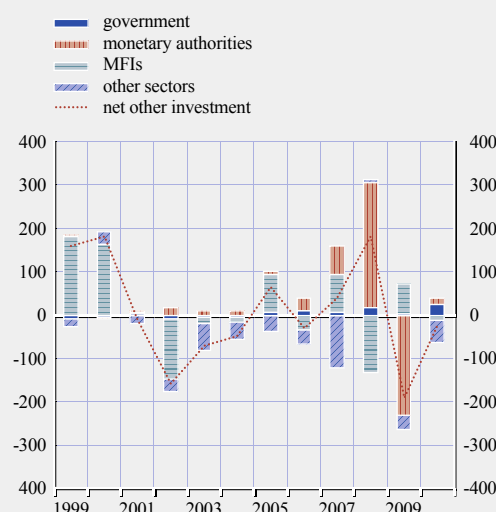
(EUR billions; net annual flows)



Source: ECB.  
Notes: MMIs stands for “money market instruments”. Inflows (+); outflows (-).

**Chart 9 Other investment by institution**

(EUR billions, net annual flows)



Source: ECB.

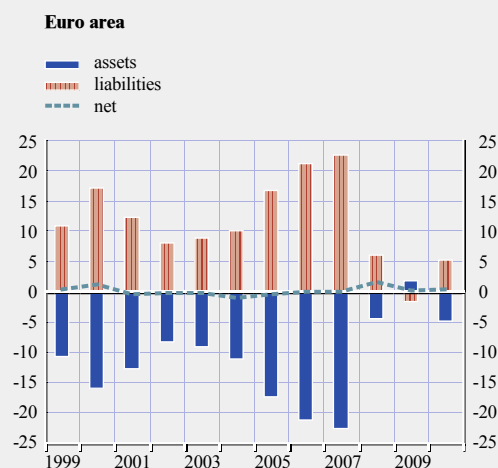
### 3.2 THE IMPACT OF THE CRISIS

Although the size, direction and composition of net flows is what matters from a macroeconomic perspective (for aggregate demand, monetary aggregates and exchange rate developments), netting out assets and liabilities may lead to a loss of valuable information that might otherwise help gauge investors' motivations. For example, while an increase in net inflows in equities may reflect an increase of investment in euro area equities by non-residents, it can also reflect the liquidation of equity positions abroad and the repatriation of funds by residents. Understanding these differences is important to accurately interpret international investors' incentives and capital movements, especially in periods of turmoil.

It is worth noting that the crisis has affected euro area asset and liability flows on a much larger scale than net flows (see Chart 10), reflecting the process of reduction or, in many cases, reversal of cross-border financial investment by resident and non-resident investors. A similar

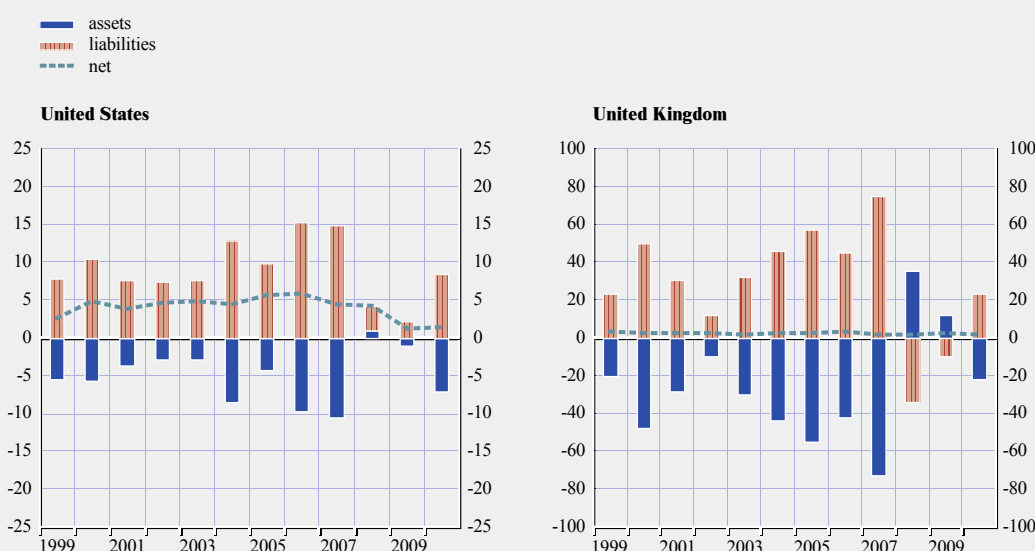
conclusion may be drawn from developments in the financial accounts of other major advanced economies, such as the United States and the United Kingdom (see Chart 11).

**Chart 10 Financial flows as a percentage of GDP**



Source: ECB.  
Note: Inflows (+); outflows (-).

Chart 11 Financial flows as a percentage of GDP



Sources: Bureau of Economic Analysis and UK Office of National Statistics.

The ratio of euro area external assets to GDP, as well as that of euro area external liabilities to GDP after reaching the level of 23% in both cases (€2 trillion) in 2007, fell to about 5% in 2008 and just 2% in 2009. Net flows which, for comparison, were close to balance (€3 billion) in 2007, amounted to just 1.3% of GDP in 2008 and fell to 0.3% in 2009, in line with the developments in the current account balance (see Chart 10).

These figures show that: (i) asset and liability flows can be far larger than net flows, (ii) external financial flows can be volatile and easily reversible under certain conditions<sup>18</sup> and (iii) low net flows may mask the gradual build up of macroeconomic imbalances and financial risks. The larger the ratio of assets or liabilities to GDP, the more vulnerable a country is to abrupt changes in financial market conditions and to adverse wealth and balance sheet shocks.

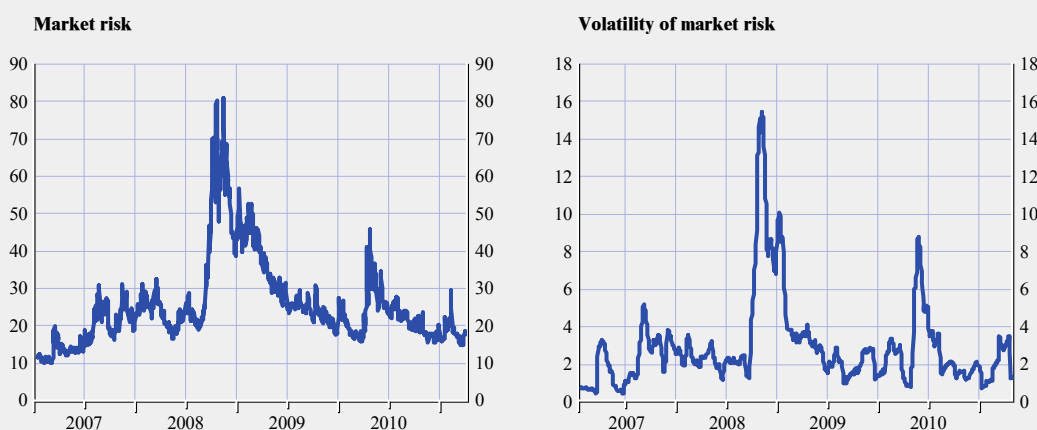
Indeed, the collapse of Lehman Brothers in September 2008 and the ensuing intensification and synchronisation of the global financial crisis marked a break in the surge of gross

cross-border financial flows. In the euro area a sizeable scaling down of external financial transactions by both residents and non-residents was recorded in 2008 (see Charts 6 and 10), which was evident across the whole range of investment instruments. The only exceptions were investment in euro area debt by non-residents and inter-company loans abroad by residents, which both increased (see Tables 1 and 2 in the Annex).

A number of extraordinary circumstances amplified the reduction in gross cross-border investment – and in some cases resulted in disinvestment by euro area residents and non-residents during the crisis. First, liquidity shortages owing to the breakdown of the interbank and asset-backed securities markets triggered initially significant (fire) sales of

18 A study by Broner et al. (2010) finds that for high-income countries during the 2000s, the volatility of gross financial flows is significantly higher than that of net financial flows. For example, the median standard deviation of gross inflows from abroad increased to 9.16 in the 2000s from 2.66 during the 1970s, while the volatility of net flows increased from 2.41 in the 1970s to 3.60 in the 2000s.

**Chart 12 Risk dynamics during the crisis**



Sources: Datastream and ECB staff calculations.

Notes: The market risk measure on the left-hand side refers to the CBOE SPX volatility VIX index. The volatility of market risk is the 30-day standard deviation of the VIX index. See Bacchetta, Tille and van Wincoop (2010). Last observation refers to May 2011.

other assets to raise cash. Second, heightened uncertainty and asymmetric information between lenders and borrowers resulted in a sudden rise in risk aversion, which led to a certain amount of herd behaviour among international investors. Third, extensive balance sheet restructuring in both the financial and non-financial sectors, triggered partly by solvency concerns, induced a further decrease in euro area cross-border financial flows.

The prominent role of sudden gyrations in markets' risk perceptions, confidence and tolerance during this financial crisis episode has recently attracted attention in the literature as a determinant of cross-border activity (Forbes and Warnock (2011)). It has been argued that part of the rise in market risk that emerged in the last quarter of 2008 (see Chart 12) can be explained by shifts in the risk assessment of current as well as future asset prices, in an environment of large negative wealth shocks, weak fundamentals and economic and financial imbalances (Bacchetta et al. (2010)). This suggests that some degree of additional immeasurable risk, referred to as Knightian uncertainty, might have intensified the typical risk aversion behaviour seen during times of high risk, leading to a broadly-based

loss of confidence on the part of investors (Caballero and Krishnamurthy (2008)).

Taken together, these three factors not only led to a scaling down of gross cross-border direct investment, portfolio investment and other investment, they also resulted in changes in the composition of euro area cross-border portfolio flows.

### 3.2.1 SHIFTS IN THE COMPOSITION OF PORTFOLIO INVESTMENT

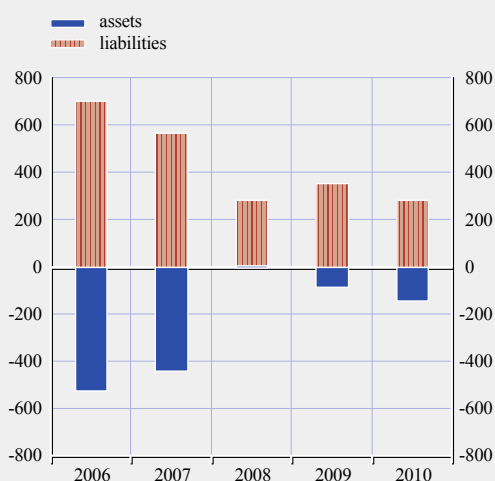
As the global financial turmoil that started in mid-2007 developed into a full-blown crisis in 2008, investors shifted from (i) equity to debt instruments (flight to safety), (ii) long-term to short-term debt instruments and (iii) private sector securities to public sector debt.

While euro area residents engaged in large-scale portfolio disinvestment abroad and repatriation of funds, foreign investors continued to purchase portfolio assets in the euro area, albeit at a decelerating pace (see Chart 13).

This mainly reflected developments in the debt market. Foreign investors purchased sizeable amounts of euro area money market instruments,

**Chart 13 Portfolio assets and liabilities of the euro area**

(EUR billions; annual flows)



Source: ECB.  
Note: Inflows (+); outflows (-).

which more than offset their reduced investment in euro area bonds and notes (see Chart 14). Euro area investors, by contrast, decreased significantly their purchases of both long and

short-term debt instruments abroad as a result of increased home bias (see Chart 15).<sup>19</sup>

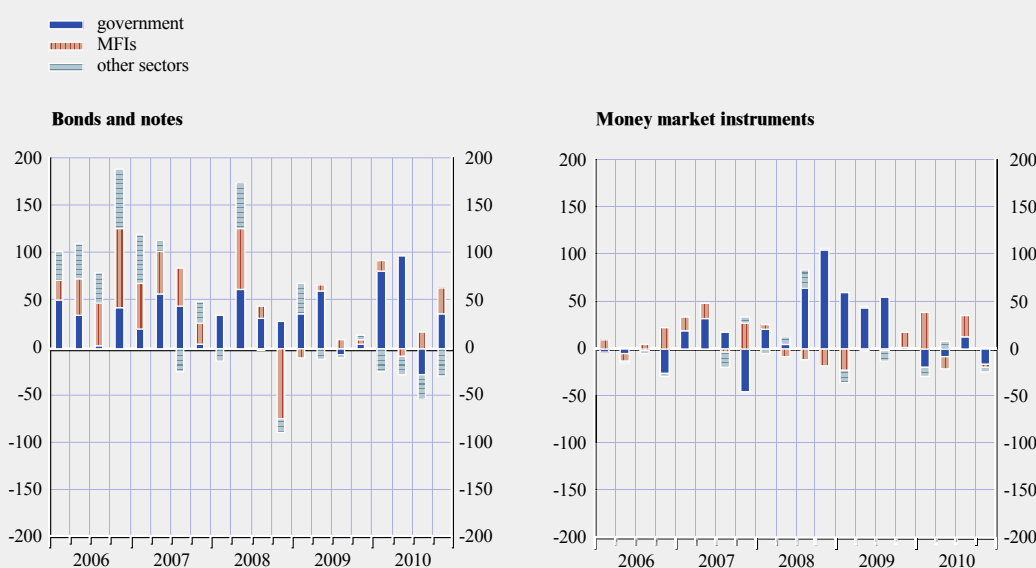
The shift in foreign investors' preferences away from assets with longer-term maturity (bonds and notes) to safer and more liquid short-term assets (money market instruments), was accompanied by a move away from debt issued by euro area MFIs to government debt, both long-term and short-term (see Chart 16). In particular, foreigners strongly disinvested in MFI bonds in the fourth quarter of 2008 and in the first three quarters of 2009, in spite of government guarantees for such securities, possibly due to growing uncertainty about the extent of the euro area banking sector's exposure to "toxic" assets and fears of systemic spillovers.

At the same time, investors withdrew from equity markets in the midst of the crisis. Foreign investors' large disinvestment in euro area

<sup>19</sup> See, also, the box entitled "Financial integration and the financial crisis in 2008: a cross-border portfolio allocation perspective", *Monthly Bulletin*, ECB, May 2010.

**Chart 14 Non-euro area residents' investment in euro area bonds and notes and money market instruments, by issuing sector**

(EUR billions; quarterly flows)

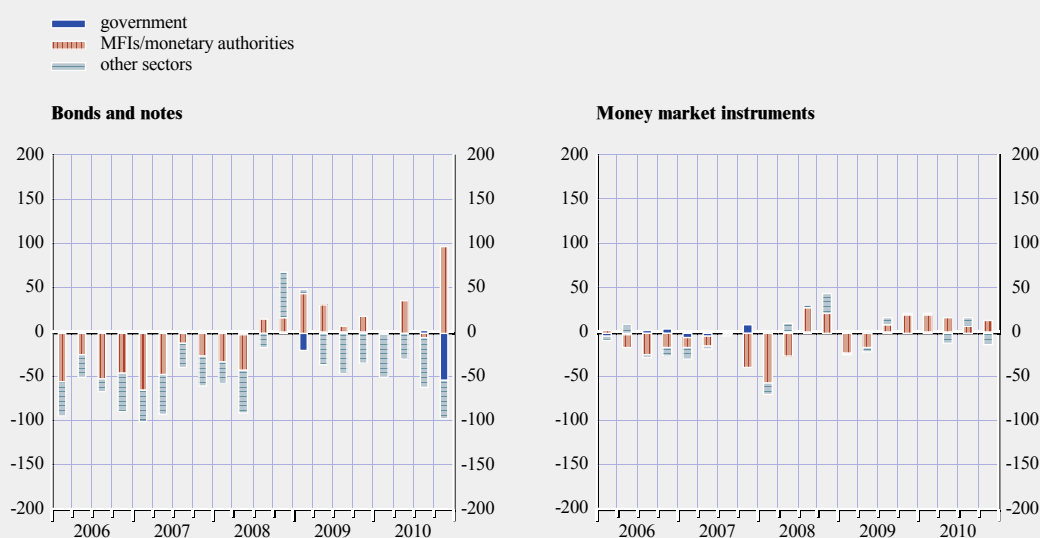


Source: ECB.  
Notes: MFIs stands for "monetary financial institutions". Last observation refers to Q4 2010. Inflows (+); outflows (-).



**Chart 15 Euro area residents' investment by sector in bonds and notes and money market instruments abroad**

(EUR billions; quarterly flows)



Source: ECB.

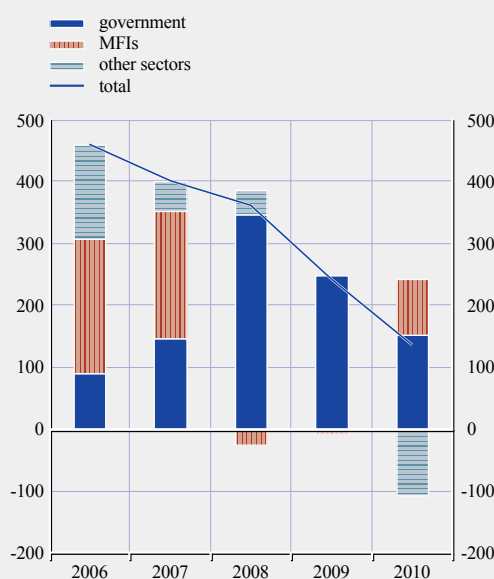
Notes: MFIs stands for "monetary financial institutions". Last observation refers to Q4 2010. Inflows (+); outflows (-).

equities in the second half of 2008 and the first quarter of 2009 was concentrated on non-MFI

sectors, while euro area investors also liquidated equity investments abroad (see Chart 17).

**Chart 16 Non-euro area residents' investment in euro area debt (by issuing sector)**

(EUR billions; annual flows)



Source: ECB.

Notes: MFIs stands for "monetary financial institutions"; the Eurosystem is excluded, as it does not issue debt securities.

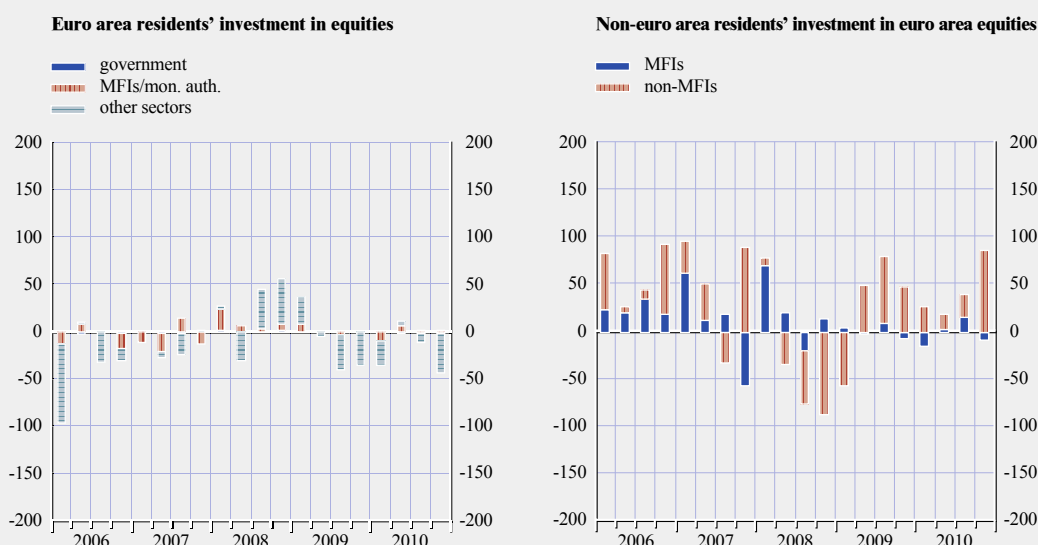
As risk aversion surged, increasing home bias and stronger preferences for safer and more liquid assets became the main drivers of the developments in cross-border portfolio flows during the crisis. Other factors – such as interest rate differentials – that traditionally had played a major role in explaining bond flows seemed less relevant (see Chart 18). Meanwhile, the halt of the convergence process in euro area bond markets, as evidenced by widening government bond spreads, implied that country-specific risk factors were playing an increasing role. Equity flows, by contrast, remained broadly in line with relative stock price developments in the euro area and other major financial centres, such as the United States (see Chart 19), but have largely suffered from a highly synchronised stock market downturn worldwide and from the adverse impact of persistent global risk factors.

### 3.2.2 DELEVERAGING IN OTHER INVESTMENT

In other investment, which mainly comprises loans and deposits, significant cross-border

Chart 17 Cross-border investment in equities

(EUR billions; quarterly flows)



Source: ECB.

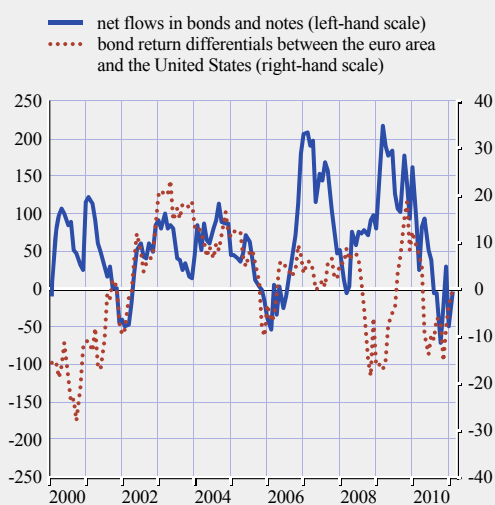
Notes: MFIs stands for "monetary financial institutions". Last observation refers to Q4 2010. Inflows (+); outflows (-).

deleveraging activity by euro area residents and non-residents has been particularly evident (see Chart 20).

After showing a strong upward trend prior to the crisis, with annual flows rising from about €150 billion in 2003 to about €600 billion

Chart 18 Bond yield differentials

(EUR billions; 12-month cumulated flows)

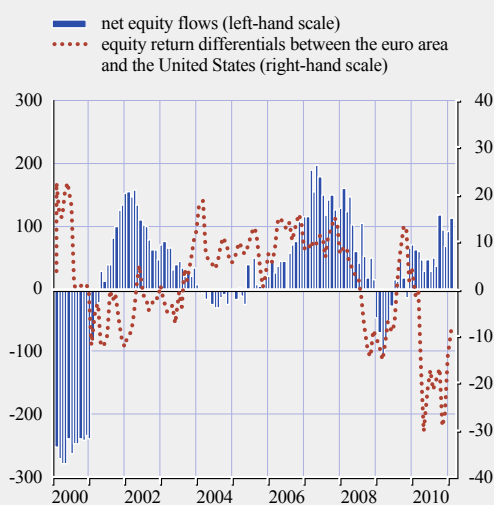


Sources: ECB and Datastream.

Note: Last observation refers to February 2011.

Chart 19 Equity return differentials

(EUR billions; 12-month cumulated flows; percentage change)

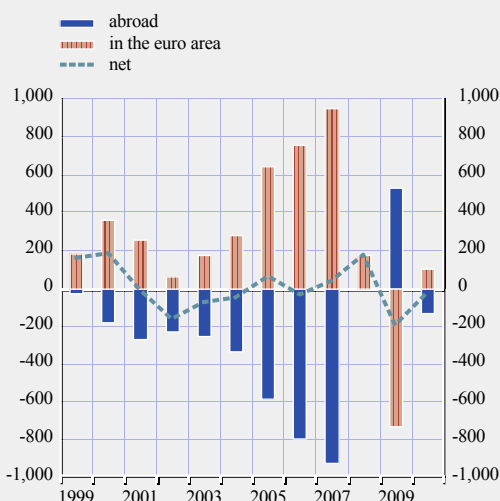


Sources: ECB and Datastream.

Note: Last observation refers to February 2011.

**Chart 20 Other investment assets and liabilities of the euro area**

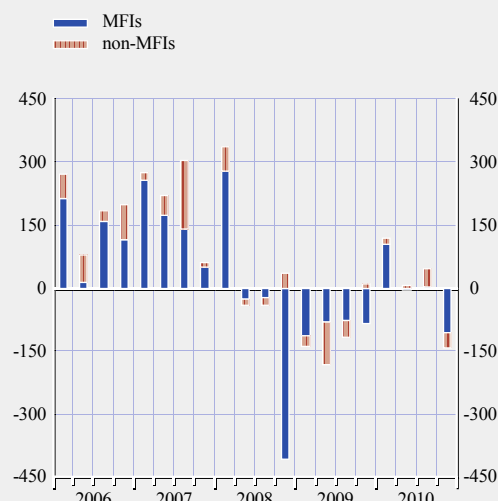
(EUR billions; annual flows)



Source: ECB.  
Note: Inflows (+); outflows (-).

**Chart 22 Other investment external liabilities of euro area MFIs and non-MFIs**

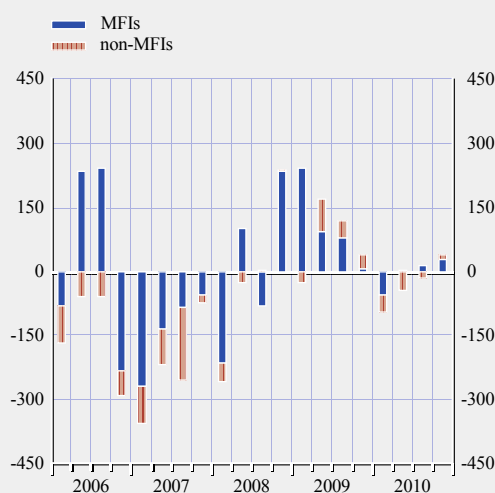
(EUR billions; quarterly flows)



Source: ECB.  
Notes: Inflows (+); outflows (-). Non-MFIs include financial institutions other than banks, such as hedge funds, insurance funds and pension funds, and the rest of the private sector, i.e. households and private corporations. Last observation refers to Q4 2010.

**Chart 21 Other investment external assets of euro area MFIs and non-MFIs**

(EUR billions; quarterly flows)



Source: ECB.  
Notes: Last observation refers to Q4 2010. Inflows (+); outflows (-). Non-MFIs include financial institutions other than banks, such as hedge funds, insurance funds and pension funds, and the rest of the private sector, i.e. households and private corporations.

in 2007, the accumulation of external assets and liabilities by the euro area MFI sector was abruptly reversed in late 2008 and at the beginning of 2009 (see Charts 21 and 22). The strong co-movement in MFI asset and liability flows vis-à-vis the rest of the world, largely confirms that business was conducted mainly between banks, either with their own affiliates abroad or with other banks.<sup>20</sup> Against the background of strong global financial interlinkages and intensive cross-border interbank activity, liquidity shortages and global uncertainty induced a sizeable retrenchment of MFIs' external loans and deposits in 2008. At the same time, monetary authorities around the globe activated foreign currency swap lines in 2008 to address elevated pressures in foreign exchange markets (see Box 2).

20 From a euro area balance of payments perspective, however, the sizeable deleveraging by euro-area MFIs seen in gross terms (assets or liabilities) has been less pronounced in net terms, because banks' gross cross-border liabilities to foreigners and gross cross-border claims on foreigners have co-moved at about the same rate.

## Box 2

## THE ECB'S FOREIGN EXCHANGE LIQUIDITY-PROVIDING OPERATIONS

From the onset of the crisis in mid-2007 until mid-2008, the significant foreign exchange liquidity needs of the euro area banks have been covered by banks located abroad – usually the US or UK offices of euro area-owned banks – lending to their affiliated offices in the euro area (often the parent office). When the crisis intensified in September 2008 and cash shortages emerged, central banks began to play a key role in providing liquidity in currencies other than the euro. In response to elevated pressures in the US dollar funding markets, the ECB agreed a temporary reciprocal currency arrangement (swap line) with the Federal Reserve that enabled the ECB to conduct US dollar liquidity-providing operations with its counterparties against Eurosystem-eligible collateral. A similar swap line was activated between the ECB and the Swiss National Bank in October 2008 in order to enable the ECB to provide Swiss franc liquidity to euro area banks, if needed.

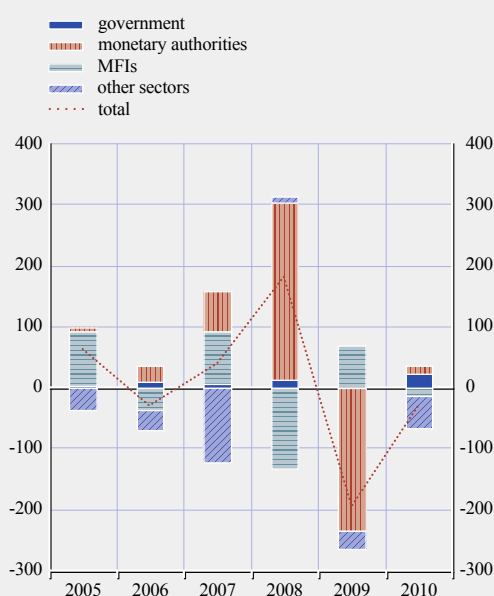
Although these operations, and most notably the US dollar liquidity ones, resulted in a rapid increase in the Eurosystem's external liabilities in the "other investment" item of the balance of payments in 2008 (see Chart), they were counterbalanced by an increase in the external assets held by resident MFIs and eventually by a decrease in their external liabilities, in particular the ones denominated in foreign currency. As a result, the US offices of many euro area banks were able to decrease their lending position to their parents and, in the fourth quarter of 2008, they actually received a flow of funds back into the United States, possibly due to heightened difficulties in the US market.

An unwinding of the US dollar liquidity-providing operations took place in 2009, which was reflected in a decrease in the liabilities of the Eurosystem of almost the same size as the interventions of late 2008.

In January 2010, the swap line with the Swiss National Bank was discontinued. However, in May 2010 the ECB decided to reactivate, in coordination with other central banks, the temporary US dollar liquidity swap facilities, which had been earlier discontinued, as a response to the re-emergence of strains in US dollar short-term funding markets. Finally, in December 2010, the ECB and the Bank of England announced, within the framework of central bank cooperation, a temporary liquidity swap facility, under which the Bank of England could provide, if necessary, pound sterling to the ECB in exchange for euro. The impact of all the above-mentioned foreign exchange liquidity-providing operations in 2010 on the Eurosystem's external liabilities has been marginal.

## Other investment by sector

(EUR billions; net annual flows)



Source: ECB.

Notes: MFIs stands for "monetary financial institutions". Inflows (+); outflows (-).

The deleveraging process was apparent also in the non-bank sector (see Charts 21 and 22). Prior to the crisis, loans granted to foreigners and deposits held abroad (asset side) and loans received from abroad (liability side) by euro area non-bank entities had risen at a strong pace. Annual flows in foreign assets increased from less than €100 billion in 2004 to around €400 billion in 2007, while flows in foreign liabilities increased from €35 billion to more than €200 billion over the same period. The deceleration in 2008 was more pronounced for external assets than for external liabilities.

### 3.2.3 RESILIENCE OF FOREIGN DIRECT INVESTMENT

An interesting feature of the financial crisis has been that foreign direct investment (FDI) has been more resilient than other forms of private capital. Thus, FDI flows in 2008/9 remained close to their pre-crisis long-term averages (see Chart 23).

Euro area FDI investment abroad decelerated, but weathered the crisis relatively well, while inward FDI in the euro area was affected more

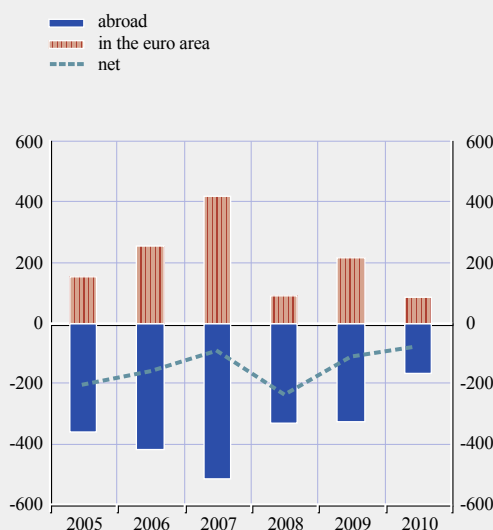
strongly in 2008. The most pronounced drop was in direct investment from the United Kingdom, followed by that from the United States (see Chart 25).

The resilience of outward FDI by euro area residents could partly reflect engagement in projects of a longer-term nature or with higher fixed costs, and thus the difficulty of withdrawing from longer-term commitments. Meanwhile, the rather strong euro exchange rate may have encouraged some euro area firms to buy assets abroad, while making inward FDI rather expensive.

Data on cross-border mergers and acquisitions (M&As), the main mode of FDI, confirm the deceleration observed in euro area direct investment in the last couple of years (see Chart 24). The value of these deals declined in 2008 and 2009, as compared with the pre-crisis period. M&As in manufacturing and in the non-bank financial sector recorded the sharpest fall, while those in services increased, the latter possibly reflecting buy-out opportunities resulting from the crisis.

**Chart 23 Foreign direct investment abroad and in the euro area**

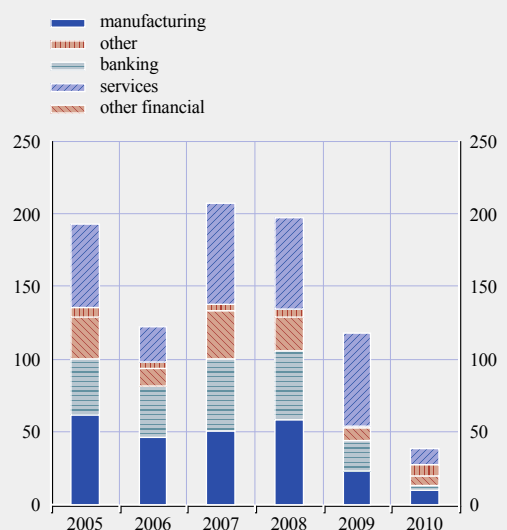
(EUR billions; annual flows)



Source: ECB.  
Note: Inflows (+); outflows (-).

**Chart 24 M&As by the rest of the world in the euro area, by target sector**

(EUR billions; period sums)

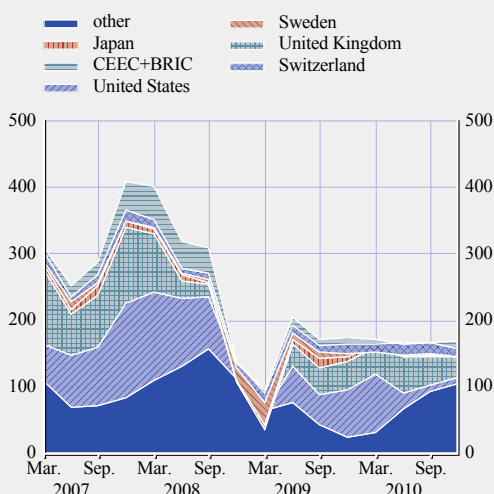


Sources: Bureau Van Dijk and ECB staff calculations.



**Chart 25 Euro area FDI inflows,  
by geographical region of origin**

(EUR billions)



Source: ECB.

Notes: Last observation refers to Q4 2010. "other" is calculated as a residual and includes inflows from other countries, international organisations and offshore financial centres. CEECs stands for "central and eastern European countries" and BRICs stands for "Brazil, Russia, India and China".

The main factor behind the moderation in FDI flows was, according to firm level data, the deterioration in the financing capability of firms. The tightening of credit conditions and the higher cost of capital hampered companies' access to external financing, while the lower profitability and stock market value of their assets reduced the availability of own funds for investment at home and abroad. At the same time, the uncertainty surrounding global economic prospects had a dampening effect on firms' propensity to invest, with a preference for partnerships and licensing as opposed to equity investments, as means of international expansion.<sup>21</sup> Multinational firms also accelerated their repatriation of profits, opting against reinvestment. In some cases, disinvestment was observed, as troubled firms and financial institutions raised capital by selling their overseas assets, usually to local companies. Finally, a drop in leveraged buy-out transactions by private-equity funds from many countries served to further dampen inward cross-border M&As, which in turn further depressed euro area FDI inflows.

### 3.3 THE AFTERMATH OF THE CRISIS AND RECENT DEVELOPMENTS

As the global economy started to show signs of stabilisation in 2009, some of the trends in gross cross-border financial flows observed during the peak of the crisis abated or even started to reverse. There was a general resumption of flows, although they remained at significantly lower levels than in the pre-crisis period from 2005 to 2007. In some cases, such as portfolio investment abroad by euro area residents, cross-border flows stabilised at well below their historical annual average levels.

In more detail, portfolio investment in debt instruments lost some of its appeal in 2009, particularly for non-resident investors. The more favourable global economic outlook and improved financial market conditions resulted in a partial rebound in investors' risk appetite, encouraging them to invest in equities in the euro area and abroad. However, in the first half of 2010 risk aversion re-emerged, amid high volatility, due to the re-intensification of financial market tensions, especially in Europe, in May. Indeed, during the second quarter of 2010, developments were largely driven by increased home bias on the part of euro area residents, who engaged in a process of liquidation of positions in foreign bonds and equities and repatriation of funds. In the second half of 2010 non-residents significantly decreased their purchases of euro area debt instruments; in particular, they sold euro area bonds and notes in the third quarter of 2010 amid market concerns related to the sustainability of the sovereign debt of some euro area countries, only resuming their purchases in the fourth quarter as tensions eased. In contrast, euro area residents increased their purchases of debt instruments abroad somewhat. Equity investment accelerated in the second half of 2010, rebounding from the low levels observed in the first half of the year, mainly reflecting higher investment in euro area equities by foreign investors. Euro area investors also

<sup>21</sup> See United Nations Conference on Trade and Development (2009).

started to invest in foreign equities again in an environment of rising stock market prices and declining market volatility.

Meanwhile, the process of deleveraging continued at a significant rate in 2009 in relation to cross-border loans and deposits. For the first time since the introduction of the euro, the euro area's gross other investment flows recorded declines on both the asset and liability sides in 2009 (see Chart 20), before modestly resuming in 2010.

As regards the euro area banking sector, the need to strengthen capital positions – in an environment of more prudent lending standards and pressure from the supervisory authorities to keep leverage levels under tight control – and reduce international risk exposure largely accounted for the continued reduction in the foreign assets (mostly loans granted abroad) of MFIs (see Chart 21). At the same time, the desire to refocus balance sheet risk may have been the reason for a higher acquisition of other assets, like government securities, at least until the third quarter of 2009. On the liability side, foreign investors continued to withdraw deposits

held with euro area MFIs (see Chart 22). Given that euro area MFIs form an integral and core part of the global financial system, their cross-border activity has been fundamental in the process of global deleveraging. Against this background, Box 3 provides further insight into euro-area bank deleveraging by discussing it from a global perspective.

Similarly, a fully fledged deleveraging process also started in the euro area non-MFI sector, in 2009 (see Charts 21 and 22). For the first time since the introduction of the euro, the non-MFI sector recorded net sales of its external assets and a reduction in its external liabilities. This development is likely to have been the combined result of: (i) balance sheet adjustment and debt repayment, (ii) a shift from (foreign) bank loans to market-based fund raising,<sup>22</sup> due to improved sentiment in financial markets, as evidenced by the rebound in equity prices (demand-side effect) and (iii) a reduction by foreign banks in their cross-border lending (supply-side effect).

22 See the box entitled “Integrated euro area accounts for the third quarter of 2009”, *Monthly Bulletin*, ECB, February 2010.

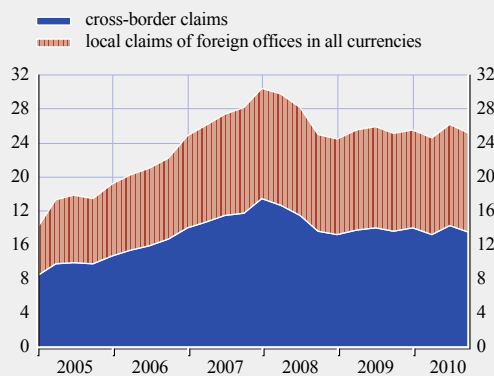
### Box 3

#### THE INTERNATIONAL DIMENSION OF BANK DELEVERAGING

An important channel through which the financial crisis has been propagated internationally has been the sizeable reduction in the foreign claims of banks active in global financial markets. As the turmoil reached its peak, banks reporting to the Bank for International Settlements (BIS) reduced their global exposure by 18%, from USD 30.4 trillion in the first quarter of 2008 to USD 25.0 trillion in the fourth quarter of 2008 on a consolidated basis (see Chart A). Around 70% of this reduction was achieved by cutting cross-border claims, mostly comprising international loans, while the remaining 30% resulted from a reduction in the local claims

Chart A Foreign claims of BIS reporting countries (cross-border and local lending)

(total amount outstanding (stock) in USD billions; ultimate risk basis)



Sources: BIS and ECB staff calculations.  
Notes: Consolidated data. The last observation refers to the fourth quarter of 2010.

of foreign subsidiaries. Between March 2009 and the fourth quarter of 2010 the total foreign claims of BIS reporting countries broadly stabilised at a level of around USD 25 trillion.

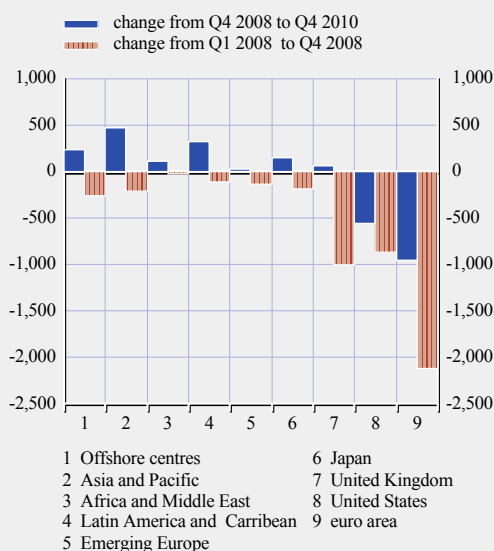
In line with the global nature of the financial turmoil, the deleveraging process was highly synchronised across countries in the period between March 2008 and December 2008, affecting almost all major developed and emerging economies. Over this period, foreign claims were reduced vis-à-vis the United States by USD 866 billion (-13%) and the United Kingdom by USD 1 trillion (-27%), as shown by the reddish brown bars in Chart B. The reduction was particularly sizeable vis-à-vis the euro area countries, USD 2.1 trillion (-20%), partly reflecting a fall in intra-euro area financial claims. From a systemic point of view, the decline in banks' international exposure to emerging market economies by almost half a trillion US dollars was also particularly relevant, with Asia appearing to be the most affected region during the early stages of the crisis. From the fourth quarter of 2008 onward, developments have been more idiosyncratic. Although BIS banks increased their exposure to (non-European) emerging markets to levels even higher than those prevailing prior to the turmoil, they continued to cut foreign claims on the United States and euro area countries (see the blue bars in Chart B).

Particularly relevant is that banks of the largest euro area countries have continued to retrench internationally, returning, for example, to the levels of exposure of 2005 in the case of Germany and of 2007 in the case of France (see Chart C).<sup>1</sup>

A sectoral decomposition of banking claims also allows one to get a better insight into the nature of the international bank deleveraging process. While between March 2008 and December 2010 BIS banks increased their

**Chart B Change in foreign claims of BIS reporting countries vis-à-vis selected geographical regions**

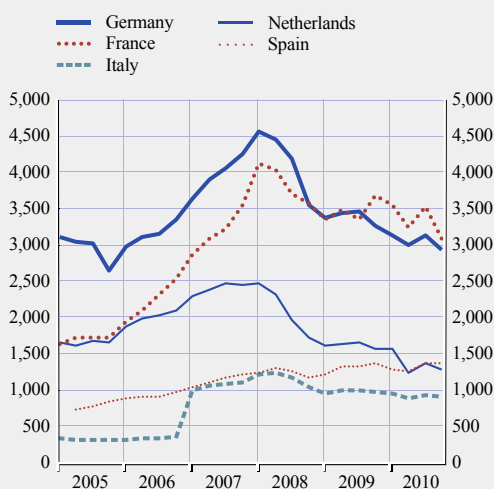
(total amount outstanding (stock) in USD billions; ultimate risk basis)



Sources: BIS and ECB staff calculations.  
Notes: Consolidated data. For the euro area (EA) the last observation refers to Q4 2010.

**Chart C Foreign claims of BIS reporting countries vis-à-vis the rest of the world (selected euro area countries)**

(total amount outstanding (stock) in USD billions; ultimate risk basis)



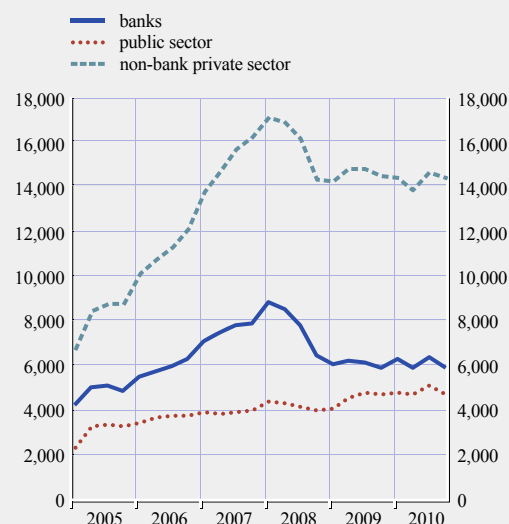
Sources: BIS and ECB staff calculations.  
Notes: Consolidated data. The last observation refers to Q4 of 2010.

1 Avdjiev et al. (2011) report breaks in the series for both Germany and France, including in the light of the transfer of claims to asset management companies that do not report to the BIS. These however do not affect the broad picture that German and French banks continued to reduce their international financial exposure (the breaks are also smaller in consolidated terms).

exposure vis-à-vis the public sector by 7.0% (USD 0.3 trillion), the deleveraging process vis-à-vis other banks and the private sector was sizeable (see Chart D). Overall BIS banks reduced their foreign claims vis-à-vis other banks by one third (about USD 2.9 trillion) and their foreign claims vis-à-vis the private sector by one sixth (USD 2.9 trillion) from the peak levels of March 2008. Notwithstanding this sizeable fall in foreign claims on the private sector, the latter remains by far the largest sector to which the banking sector is exposed (USD 14.3 trillion in December 2010). Moreover, the share of BIS bank exposure to the private sector increased by 3 percentage points (to reach 59% of their total exposure) between March 2008 and December 2010. Over the same period the exposure to the public sector increased by 500 basis points, to reach 19% while that to other banks declined by a similar amount to 24%.

**Chart D Foreign claims of BIS reporting countries vis-à-vis the rest of the world, by sector**

(total amount outstanding (stock) in USD billions; June 2010)



Sources: BIS and ECB staff calculations.  
Note: Consolidated data, based on headquarter principle.

Part of the process of global bank deleveraging can be viewed as a necessary adjustment of loan-to-deposit ratios after several years of rapid credit expansion at the global level. The decline is also consistent with the sharp slowdown observed in global economic activity. However, a prolonged period of subdued foreign lending to the private sector could also signal a phase of general weakness in the banking sector, which may be partly reflected in banks' willingness to lend domestically.

In summary, the global economy has witnessed a significant retrenchment of the banking sector from global markets, which has reflected the severity of the financial turmoil, but also contributed to the spread of its impact internationally. Although the deleveraging process is not yet over for all countries and all sectors, there are signs of stabilisation, which is important if the global recovery is to be durable.

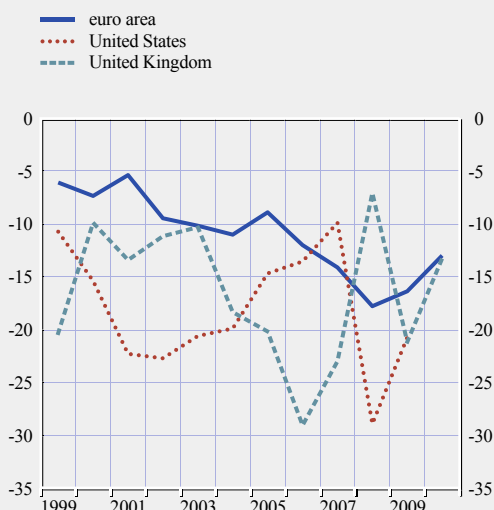
In 2010, however, deleveraging in relation to cross-border loans and deposits lost momentum and there were some signs of normalisation of flows both on the asset and on the liability sides, as euro area residents resumed investing abroad and non-residents resumed investing in the euro area. The size of international flows of other investment, however, remained very subdued.

Finally, direct investment – which, as discussed, moderated but proved more resilient than other

flows of private capital during the crisis – showed some signs of recovery in 2009. Inward direct investment picked up again but remained substantially muted, especially that part stemming from the United Kingdom and the United States (see Chart 26). At the same time direct investment by euro area residents abroad stabilised. In 2010 as a whole, direct investment again moderated, particularly that carried out in the euro area by foreign investors.

**Chart 26 Net i.i.p. of selected advanced economies**

(as a percentage of GDP)

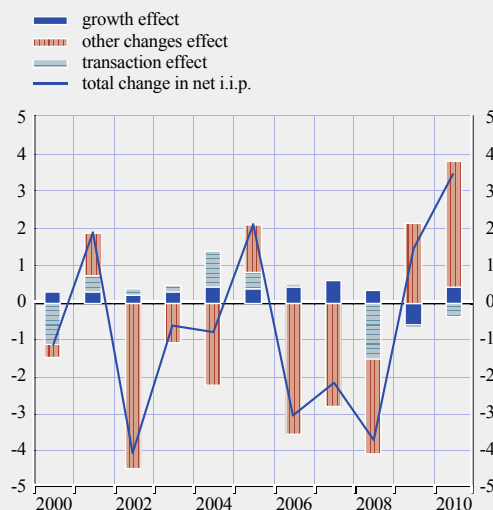


Source: ECB.

Note: Last observation refers to 2010, except for the United States (2009).

**Chart 27 Breakdown of changes in the euro area net i.i.p.**

(as a percentage of GDP)



Source: ECB.

### 3.4 INTERNATIONAL INVESTMENT POSITION

Apart from the impact on cross-border financial flows, the crisis has also affected financial stocks, i.e. the international investment position (i.i.p.). The change in the i.i.p. is primarily explained by two factors: (i) net financial flows and (ii) revaluations due to changes in exchange rates and asset prices and other adjustments.

In the years prior to the crisis, the net i.i.p. of the euro area was gradually deteriorating, its net liability position reaching a peak of €1.7 trillion (or 17.9% of GDP) in 2008, before narrowing to €1.5 trillion (or 16.4% of GDP) in 2009 and €1.2 trillion (or 13.0% of GDP) in 2010. The United States and the United Kingdom also recorded net liability positions during the same period, which peaked in 2008 and 2006, respectively (see Chart 26).

While revaluation effects almost exclusively explained the deterioration in the net i.i.p. of the euro area in 2006 and 2007, the transaction

effect, i.e. the contribution of financial flows, increased markedly, to one third of the deterioration in the i.i.p. of the euro area in 2008 (see Chart 27). These net inflows were mainly driven, as seen above, by strong net purchases of debt securities, which were only partly offset by net sales of equities. In addition, the negative revaluations due to the appreciation of the euro and other adjustments<sup>23</sup> were only partly offset by positive asset price changes, so that the euro area's net liability position deteriorated further.

As international economic conditions started to normalise in 2009 and 2010, the impact of net financial transactions on the change in the euro area's i.i.p. became smaller (but still negative), as it was offset by large and positive revaluation effects predominantly arising from asset price and exchange rate changes. Despite the fact that the euro area's net i.i.p. improved in 2009 and 2010, underlying sectoral shifts in the net

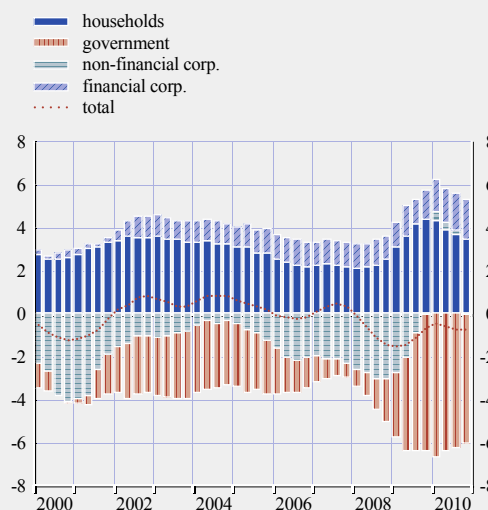
<sup>23</sup> The other adjustments mainly reflected the introduction of a new data collection system for portfolio investment in one euro area country.

external lending/borrowing of the euro area suggest some downside risks.

The integrated euro area accounts, available up to the fourth quarter of 2010, show that net external borrowing by general government has been steadily rising since 2008. At the same time, net borrowing by private non-financial corporations has been falling, suggesting reduced needs for capital and changes in the cash management of companies. In the course of 2010, general government became the only sector in the euro area to be a net borrower from abroad (see Chart 28), although non-financial corporations returned to a small net borrowing position in the fourth quarter of the year. This means that the external dependence of the euro area governments and their vulnerability to interest rate risks has increased. A similar picture emerges from the analysis of developments in the euro area's gross external debt (see Box 4).

**Chart 28 Sector contributions to the euro area's external net lending/borrowing**

(four-quarter moving sum; as a percentage of GDP)



Source: ECB, Integrated Euro Area Accounts.

Note: Last observation refers to Q4 2010. Net lender (+)/net borrower (-).

#### Box 4

##### RECENT DEVELOPMENTS IN THE EURO AREA'S GROSS EXTERNAL DEBT<sup>1</sup>

The global financial crisis was associated with an increase in gross external debt in most of the major advanced economies, including the euro area. Over the period 2006 to 2009, the gross external debt of the general government sector in the euro area increased by 8.4 percentage points of GDP to around 21% of GDP at the end of 2009. In the United States, however, the increase was more pronounced (9.4 percentage points of GDP) and the gross external debt of general government at the end of 2009 was higher than in the euro area, amounting to about 26% of GDP (see Table). This increase in the gross debt positions of general government in major advanced economies was partly driven by higher financing needs on the part of governments as a result of the crisis, but also by heightened global risk aversion on the part of investors, which led them to invest in low-risk financial assets, such as the sovereign debt securities of selected advanced economies.

The net external debt position of the euro area at the end of 2009 (12.6% of GDP) was significantly lower than its gross external debt position and well below the net positions of the United States and the United Kingdom. The net interest payments of the euro area amounted to 0.2% of GDP in 2009, a significantly lower level than in the United States and the United Kingdom where they were 1.3% of GDP.

<sup>1</sup> For an extensive analysis of the gross external debt statistics of the euro area as a whole and its individual member countries, see Diz Dias (2010).



External debt indicators for selected countries				
(as a percentage of GDP)				
	2006	2007	2008	2009
<b>Gross external debt</b>				
Canada	54.3	56.5	52.1	71.3
Japan	34.7	40.4	45.4	42.1
Switzerland	266.2	334.6	245.9	250.3
United Kingdom	378.2	402.1	339.8	416.4
United States	83.6	95.4	95.2	96.5
Euro area	101.5	110.8	118.2	116.6
<b>Gross external debt of general government</b>				
Canada	11.3	10.3	9.4	15.5
Japan	9.5	13.8	14.5	13.3
Switzerland	7.1	6.1	4.5	4.0
United Kingdom	11.5	12.1	12.2	18.2
United States	16.5	17.4	21.5	25.9
Euro area	13.0	13.8	18.3	21.4
<b>Net external debt</b>				
Canada	22.2	23.6	19.5	20.9
Japan	-50.6	-55.7	-48.1	-51.1
Switzerland	-102.3	-117.3	-100.9	-120.9
United Kingdom	48.8	43.9	28.0	38.0
United States	39.9	46.0	49.2	46.6
Euro area	6.4	6.6	14.6	12.6
<b>Net interest payments</b>				
Canada	1.4	1.4	1.2	1.2
Japan	-1.9	-2.3	-2.2	-1.8
Switzerland	-3.0	-3.5	-3.5	-3.3
United Kingdom	1.7	1.9	1.6	1.3
United States	1.3	1.5	1.5	1.3
Euro area	0.0	0.1	0.2	0.2

Sources: ECB, IMF and ECB staff calculations.

### 3.5 SUMMARY AND FUTURE PROSPECTS

The intensification of the crisis in the last quarter of 2008, triggered by the collapse of Lehman Brothers in September 2008, brought about significant changes compared with the pre-crisis period, in terms of the size, direction and nature of euro area cross-border financial flows.

First, there was a sizeable scaling-down of gross external asset holdings, amid soaring risk aversion, high liquidity needs and balance sheet restructuring. Flows reversed and their volatility markedly increased, with potential adverse effects for the real economy and financial stability.

Second, the strong increase in home bias and flight-to-safety behaviour – manifested in shifts

in the composition of cross-border financial flows – suggest that investors' decisions were strongly affected not only by *risk* aversion, but, more broadly, by *uncertainty* aversion. The difficulty of identifying, tracing and quantifying financial and economic risk in the global system, partly due to the complex inter-relationships existing among financial and macroeconomic agents, amplified the overall perception of risk by investors. Indeed, the element of uncertainty has featured prominently throughout this financial crisis episode, having a clear impact on cross-border financial flows. Investor sentiment continued to swing significantly in 2009 and 2010, often influenced by market news that rapidly changed collective expectations. In this context, a number of policies to restore confidence and the smooth

functioning of various financial market segments were deemed necessary and promptly introduced by the respective authorities.

Third, although it was the *global* economic and financial conditions that mainly drove cross-border flows, *country-specific* risk factors seem to have gradually gained importance. This was, for example, evident in the second quarter of 2010, when cross-border financial flows into euro area debt instruments decreased, following the sudden re-intensification of financial market tensions in May 2010. Rising concerns about the fiscal situation in some of the euro area peripheral countries and growing fears of possible contagion in the rest of the euro area economy appear to have strongly influenced euro area cross-border flows and, to some extent, investors' portfolio allocation worldwide.<sup>24</sup>

Finally, the financial crisis changed the sectoral breakdown of the euro area's net external borrowing, with the government sector becoming the main, and in most of 2010 the only, net borrower from abroad. In particular, the euro area's external debt increased, mainly due to the increase in government debt, but this was in line with the upward trend in government borrowing throughout the world, which was largely the result of crisis-resolution interventions. Against this background, the debate about the level and dynamics of the government sector's external debt re-emerged and the discussion on building buffers in good times in order to have room for manoeuvre during downturns became topical again.

As the global economy started to show signs of stabilisation in 2009, some of the trends in gross cross-border financial flows observed during the crisis abated or, towards the end of the year, even reversed. This was the case of portfolio and direct investment, but less so of cross-border loans and deposits, where deleveraging was taking place. In the first half of 2010, the revival of cross-border portfolio equity transactions and the loss of momentum in investment in debt instruments that occurred in 2009 moderated, as risk aversion rebounded and confidence in a

rapid recovery of the euro area and the global economy weakened in the second quarter of 2010. In the second half of the year, investment in equities accelerated and investment in debt, notably in euro area government bonds and notes, rebounded. As regards other investment, the process of cross-border deleveraging in relation to loans and deposits appeared to have halted and signs of stronger flows both on the asset and on the liability sides emerged. Looking ahead, it is still uncertain what trends will prevail in the near future. Investors appear to have become more selective in qualitative terms, for example by differentiating across countries in relation to government debt securities. While the global economic outlook and fiscal developments are expected to play a key role, overall international financial flows could still be affected by the balance sheet restructuring of financial and non-financial corporations in advanced economies, including the euro area. Following the surge in international financial activity prior to the crisis, the recovery may not be synchronised across world regions, as shown by the stronger rebound of cross-border flows to emerging markets.

24 See the box entitled "Developments in financial markets in early May", *Monthly Bulletin*, ECB, June 2010.

#### 4 POLICY IMPLICATIONS AND CONCLUSIONS

The significant changes in euro area cross-border financial flows, which took place during the global financial crisis, may have important implications from a policy perspective. This crisis has shown that international financial flows can grow very rapidly and suddenly unwind, potentially having an impact on economic growth, real exchange rates, current account positions (Cardarelli et al. (2010)) and eventually on the stability of the financial sector. The reasons why strong financial inflows may be a matter of concern are well known in the literature; the adverse impact is generally expected to be channelled via falling price competitiveness and rising financial fragility. As discussed in Ostry et al. (2010), financial inflows tend to become more problematic as evidence emerges of (i) currency overvaluation (ii) excessive reserve accumulation (iii) rising inflationary pressures and (iv) signals of housing and lending booms. The policy tools to deal with financial flows are also well known, in principle, and include monetary and fiscal policies, sterilisation, forms of capital controls, higher exchange rate flexibility and enhanced macro-prudential measures. However, in practice they are far from trivial to implement for two reasons: first, gearing macro policies toward discouraging financial inflows might have some serious drawbacks; for example a low interest rate environment might not be appropriate from a price stability perspective; second, several of the standard policies to cope with financial inflows are often difficult to implement and sustain in practice (Ostry et al. (2010), for a detailed review).

An important additional aspect highlighted by the current crisis has been the distinction between the perils stemming from large net financial inflows and those related to extraordinary growth of cross-border flows in gross terms. The latter could also signal growing vulnerabilities, since the expansion of the financial sector may far exceed that of the real economy and constitute a cause for concern.

Similarly to banks and firms, countries may also be “excessively leveraged”, facing liquidity shocks, when liabilities are withdrawn, or capital shocks, when the market-value of cross-border assets suddenly drops. The aim of this article is to illustrate the remarkable experience of the euro area during the “Great Recession”, notwithstanding the favourable context of a close-to-balance current account position and limited financing requirements. While the euro area’s experience is particularly interesting, considering the recentness of the creation of the monetary union, similar trends to those recorded in the euro area also affected the global economy. There is indeed a burgeoning literature on international capital flows which recognises the importance of the gross dimension of financial flows. The large volatility of financial flows seen during the global turmoil was also identified in the context of the G20 as a key issue to be evaluated in the context of the reform of the international monetary system. A policy debate was initiated at the IMF (2010b) and (2011) and OECD (2011), on the challenges and responses to financial globalisation. To develop a fully coherent framework for policy guidance across different countries substantial analytical work appears warranted.<sup>25</sup>

The discussion on international capital flows is also part of a much broader discussion on financial interlinkages, which cannot abstract from the domestic dimension (IMF (2010b)). Therefore, a broad macro-prudential regulatory and supervisory framework is needed to reduce the possible risk and the negative feedback effects between the financial and the real sector, both domestically and internationally. We conclude this paper, by emphasising the importance of expanding the monitoring framework for financial flows and by proposing a few elements of the policy actions that could contribute to a more efficient and sustainable allocation of cross-border flows.

25 See in particular IMF Public Information Notice No 11/1.

*Expanding the analysis of developments in financial flows*

Given the lessons from the global financial crisis, it appears essential to expand the analysis of cross-border financial flows in order to better assess the financial transmission channel and identify potential financial fragilities.

The first issue is far from trivial. For example, the impact cross-border flows have on exchange rates or other macroeconomic variables may counteract or reinforce standard adjustment mechanisms. While current account deficits are generally expected to lead to weaker exchange rates, financial inflows may more than offset such deficits. However, the evidence uncovered by the literature for periods of financial turmoil seems more clear-cut. In such periods financial outflows and current account deficits generally tend to reinforce each other and lead to a depreciation of the real exchange rate. The international transmission mechanism, via cross-border flows, may also operate differently through the banking and shadow banking sectors, with hidden risks suddenly becoming more apparent when global risk aversion and counterpart risk rise.

On the issue of financial fragility, significant changes in cross-border financial flows and stocks could also be an important tool for detecting the emergence and build-up of potential macroeconomic risks. Large external deficits are obviously worrisome as they may increase the probability of banking, currency and balance of payments crises, especially if there is a high proportion of debt financing (Furceri et al. (2011)); but large surpluses may be challenging too, if associated with credit and housing booms. Moreover, even a favourable international investment position may hide a high degree of exposure to liquidity and capital shocks from abroad, when the size of the financing sector and the leverage of the banking sector increase. Finally, while improving the monitoring of cross-border financial flows may also involve the development of new or enhanced statistics,<sup>26</sup> the greatest challenge is

possibly to understand the drivers of financial flows and their subcomponents, and to assess when they may be signalling rising financial fragility.

*Promoting macroeconomic discipline and enhancing financial regulation and supervision*

Given that advanced economies typically refrain from using “direct” policies – such as capital controls and exchange rate intervention – the impact that the large size, pro-cyclicality or volatility of cross-border financial flows have on macroeconomic variables and financial stability has to be addressed via other, “indirect”, policy channels. For countries and governments that wish to maximise the long-term gains of financial openness, while minimising short-term risks, policies that promote macroeconomic discipline or enhance financial supervision and regulation should play a key role.

On the importance of *macroeconomic discipline*, the sheer size of pre-crisis financial flows, suggests that sound macroeconomic policies are essential to maintain a sustainable growth path, to preserve the gains from financial openness and to mitigate the adverse impact associated with financial crises. For example, countries running high fiscal deficits prior to the crisis appear (i) to have been affected more by the crisis, experiencing higher volatility of financial market variables or even a stronger reversal of financial inflows, and (ii) to have had a limited ability to respond to the crisis, for example by re-establishing foreign investors’ confidence and re-attracting foreign capital (van Riet (2010)). To achieve a viable medium-term fiscal framework, it seems particularly important not only to reduce the debt level, but also to improve the maturity structure of external debt to minimise the “bunching effect” (Calvo and Reinhart (1999)) and the country’s overall vulnerability to external shocks. Structural reforms that increase the economy’s flexibility can also help to improve the overall allocation of financial

26 Waysand et al. (2010) and OECD (2011).

inflows to productive investment, which has a potentially corrective and non-exacerbating effect on pre-existing domestic distortions in the recipient economy.<sup>27</sup>

With respect to *financial supervision and regulation*, the strong tendency for banks to take on greater risk in periods when access to international capital is relatively favourable, as was the case in the years before the turmoil, highlights the importance of bank supervision (Calvo and Reinhart (1999)). For example, recent work shows the interaction of prudential policies with financial vulnerabilities connected to bank-related financial inflows (IMF (2010a)). However, the patterns of cross-border financial flows seen during the financial crisis have shown that it is not only banks that need to be adequately supervised and regulated, but also the broader financial sector, including other financial intermediaries, as the latter have been very active in cross-border financial transactions (currently captured in the balance of payments under the broad umbrella item “other sectors”).<sup>28</sup> Prudential regulation is also likely to influence the composition and – to a smaller degree – the volume of cross-border financial flows, thus building additional buffers in the financial sector (IMF (2010)) that could help reduce cross-country and cross-sectoral financial fragilities.

Taken together, sound macroeconomic policies and enhanced supervisory and regulatory frameworks may also help to reduce uncertainty. As could also be observed during the recent crisis, imperfectly informed investors tend to infer underlying conditions from the actions of other, not necessarily better informed, investors. This leads to herding and, when inferences are negative, a rush for the exits (Eichengreen (2007)), which accounts for volatility spikes in international flows.

27 Cardarelli et al. (2010) argue, on the basis of previous empirical episodes, that the control of public expenditure is a stabilising factor in the event of a surge in private capital flows, while sterilisation and the tightening of capital controls appear to be less effective in this respect.

28 In order to do that, policy-makers need to be able to evaluate the shadow banking system in greater depth (and in a more holistic way) as well as the structures and operations of new financial institutions and the benefits and risks of securitisation activities (for example, Hartmann et al. (2007) and Eichner et al. (2010)).

## ANNEX

**Table A1 Portfolio investment**

(EUR billions)

	Net	Abroad	Bonds and notes	Money market instruments	Equity	In euro area	Bonds and notes	Money market instruments	Equity
2003	54.3	-281.3	-178.9	-24.4	-78.0	335.6	193.0	31.9	110.7
2004	44.3	-345.4	-181.1	-57.9	-106.4	389.7	268.8	17.0	103.9
2005	106.2	-416.8	-264.9	-17.3	-134.6	523.0	247.4	37.3	238.3
2006	186.2	-520.2	-300.9	-63.2	-156.1	706.4	480.5	-19.6	245.5
2007	126.8	-439.5	-293.4	-83.4	-62.7	566.3	341.1	60.6	164.6
2008	283.3	7.2	-80.7	-10.1	98.0	276.1	177.8	182.9	-84.6
2009	270.7	-84.3	-30.2	-7.2	-46.8	355.0	123.3	119.9	111.8
2010	143.2	-140.7	-103.7	44.0	-81.0	283.9	134.4	2.1	147.5

Source: ECB.

Note: MFIs include Eurosystem.

**Table A2 Other investment**

(EUR billions)

	Net	Abroad	Government	MFIs	Other sectors	In euro area	Government	MFIs	Other sectors
2003	-72.7	-248.8	-0.4	-150.5	-97.9	176.1	-3.4	145.6	33.9
2004	-47.7	-333.6	-1.7	-256.6	-75.3	285.9	-3.8	255.2	34.6
2005	62.2	-584.4	7.4	-400.8	-191.0	646.6	-3.1	495.7	154.0
2006	-30.8	-788.1	7.2	-531.4	-263.8	757.2	1.8	526.1	229.3
2007	38.6	-915.8	7.8	-559.9	-363.8	954.4	-1.0	713.6	241.8
2008	180.5	1.2	5.7	52.1	-56.6	179.3	9.3	106.3	63.7
2009	-193.1	534.6	-10.7	421.6	123.7	-727.7	12.5	-586.3	-153.8
2010	-28.1	-130.0	-39.6	-5.5	-84.9	101.9	64.4	6.0	31.6

Source: ECB.

Note: MFIs include Eurosystem.

**Table A3 Direct investment**

(EUR billions)

	Net	Abroad	Equity	Reinvested earnings	Other capital	In euro area	Equity	Reinvested earnings	Other capital
2003	-9.6	-146.2	-115.8	-14.1	-16.3	136.6	108.7	17.8	10.1
2004	-79.2	-169.1	-137.8	-39.0	7.7	89.9	65.3	25.7	-1.1
2005	-204.1	-358.4	-262.1	-39.8	-56.5	154.3	134.4	-12.8	32.7
2006	-159.7	-418.1	-293.0	-40.3	-84.7	258.4	187.4	38.1	32.9
2007	-90.4	-512.9	-318.4	-71.4	-123.1	422.5	271.7	43.7	107.1
2008	-236.0	-328.8	-200.6	5.2	-133.4	92.8	40.0	17.8	35.0
2009	-109.4	-325.3	-217.9	-16.2	-91.1	215.9	204.4	12.0	-0.5
2010	-78.6	-166.5	-51.3	-0.4	-114.9	87.9	120.1	16.6	-48.9

Source: ECB.

Note: MFIs include Eurosystem.

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