



EUROPEAN CENTRAL BANK

EUROSYSTEM

# FINANCIAL INTEGRATION IN EUROPE

APRIL 2012

FINANCIAL INTEGRATION IN EUROPE APRIL 2012

EUROPEAN CENTRAL BANK





EUROPEAN CENTRAL BANK

EUROSYSTEM



In 2012 all ECB publications feature a motif taken from the €50 banknote.

## FINANCIAL INTEGRATION IN EUROPE

APRIL 2012

© European Central Bank, 2012

**Address**

Kaiserstrasse 29  
60311 Frankfurt am Main  
Germany

**Postal address**

Postfach 16 03 19  
60066 Frankfurt am Main  
Germany

**Telephone**

+49 69 1344 0

**Website**

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

**Fax**

+49 69 1344 6000

*All rights reserved. Reproduction for educational and non-commercial purposes is permitted provided that the source is acknowledged.*

*Unless otherwise stated, this document uses data available as at 20 March 2012.*

ISSN 978-92-899-0827-6 (online)



# CONTENTS

## PREFACE

## KEY MESSAGES

## EXECUTIVE SUMMARY

### CHAPTER I

#### RECENT DEVELOPMENTS IN FINANCIAL INTEGRATION IN THE EURO AREA

- 1 Introduction
- 2 Overview of financial market segments
- 3 Money markets
- 4 Bond markets
- 5 Equity markets
- 6 Banking markets

### CHAPTER II

#### SPECIAL FEATURES

##### A. THE BENEFITS OF THE EU'S SINGLE FINANCIAL MARKET REVISITED IN THE LIGHT OF THE CRISIS

- 1 Introduction
- 2 The Single Market Programme and its aftermath
- 3 The benefits and costs of financial integration
- 4 Some evidence of the benefits of euro area financial and monetary integration
- 5 Next steps and future challenges

##### B. THE EFFECTS OF WEAKER FINANCIAL INTEGRATION ON MONETARY POLICY TRANSMISSION

- 1 Introduction
- 2 Developments in euro area bank funding amid the financial crisis
- 3 Cross-country dispersion of financing conditions for the non-financial private sector
- 4 Conclusions

##### 7 C. THE CONSEQUENCES OF REDUCED FINANCIAL INTEGRATION FOR THE EUROSISTEM'S OPERATIONAL FRAMEWORK

- 8 1 Introduction 63
- 10 2 The operational framework of the Eurosystem 64
- 3 Role of markets and recent developments in financial integration 66
- 4 The operational framework during the financial crisis 70
- 5 Lessons for the post-crisis operational framework 77
- 6 Conclusions 84

##### 20 D. INSTITUTIONAL REFORM IN THE EUROPEAN UNION AND FINANCIAL INTEGRATION

- 24 1 Introduction 86
- 27 2 The pre-crisis framework and its implications for financial integration 86
- 31 3 Reforming the EU's financial and institutional framework 93
- 4 Conclusions 100

##### E. SECTORAL BALANCES AND EURO AREA FINANCIAL INTEGRATION

- 31 1 Introduction 102
- 32 2 Sectoral and geographical imbalances 103
- 39 3 Savings and investment 104
- 4 Cross-border transactions 105
- 5 Leverage and capital buffers 106
- 6 Conclusions 108

### CHAPTER III

#### EUROSISTEM ACTIVITIES FOR FINANCIAL INTEGRATION

- 49 1 The legislative and regulatory framework for the financial system 109
- 51 2 Catalyst for private sector activities 113
- 57 3 Knowledge of the state of financial integration 117
- 61 4 Central bank services that foster integration 120

#### STATISTICAL ANNEX

SI

## ABBREVIATIONS

### COUNTRIES

AT	Austria	IT	Italy
BE	Belgium	JP	Japan
BG	Bulgaria	LT	Lithuania
CH	Switzerland	LU	Luxembourg
CY	Cyprus	LV	Latvia
CZ	Czech Republic	MT	Malta
DE	Germany	NL	Netherlands
DK	Denmark	PL	Poland
EE	Estonia	PT	Portugal
ES	Spain	RO	Romania
FI	Finland	SE	Sweden
FR	France	SI	Slovenia
GR	Greece	SK	Slovakia
HR	Croatia	UK	United Kingdom
HU	Hungary	US	United States
IE	Ireland		

### OTHERS

ABS	Asset-backed security
ACI	Financial Markets Association
AMEX	American Stock Exchange
BCBS	Basel Committee on Banking Supervision
BIS	Bank for International Settlements
BLS	Bank lending survey
CBPP	Covered Bond Purchase Programme
CCBM	Correspondent central banking model
CCP	Central counterparty
CDS	Credit default swap
CEBS	Committee of European Banking Supervisors
CEPR	Centre for Economic Policy Research
CESR	Committee of European Securities Regulators
CFS	Center for Financial Studies
CGFS	Committee on the Global Financial System
CLS	Continuous Linked Settlement
CPSS	Committee on Payment and Settlement Systems
CRD	Capital Requirements Directive
CRR	Capital Requirements Regulation
CSD	Central securities depository
CSDR	Central Securities Depository Regulation
CSM	Clearing and settlement mechanism
DSGE	Dynamic stochastic general equilibrium model
DVP	Delivery versus payment
EAA	Euro area accounts
EACHA	European Automated Clearing House Association
EBA	European Banking Authority
EBF	European Banking Federation
ECB	European Central Bank

ECP	Euro commercial paper
EEA	European Economic Area
EFSF	European Financial Stability Facility
EIOPA	European Insurance and Occupational Pensions Authority
EMIR	European Market Infrastructure Regulation
EMU	Economic and Monetary Union
EONIA	Euro overnight index average
EPC	European Payments Council
ERM	Exchange Rate Mechanism
ESA	European Supervisory Authorities
ESCB	European System of Central Banks
ESM	European Stability Mechanism
ESMA	European Securities and Markets Authority
ESRB	European Systemic Risk Board
EU	European Union
EUREPO	Repo market reference rate for the euro
EURIBOR	Euro interbank offered rate
FRFA	Fixed-rate full allotment
FSB	Financial Stability Board
GDP	Gross domestic product
HGDI	Households' gross disposable income
ICMA	International Capital Market Association
ICPF	Insurance corporations and pension funds
IMF	International Monetary Fund
LEI	Legal Entity Identifier
LTRO	Longer-term refinancing operation
LVPS	Large-value payment system
M&A	Merger and acquisition
MBS	Mortgage-backed security
MFI	Monetary financial institution
MiFID	Markets in Financial Instruments Directive
MMF	Money market fund
MRO	Main refinancing operations
NASDAQ	National Association of Securities Dealers Automated Quotations
NCB	National central bank
NFC	Non-financial corporations
NYSE	New York Stock Exchange
OECD	Organisation for Economic Co-operation and Development
OFI	Other financial institutions
OJ	Official Journal of the European Union
OTC	Over the counter
PCS	Prime Collateralised Securities
PHA	Proprietary home account
Repo	Repurchase Agreement
RMBS	Residential mortgage-backed security
RTGS	Real-time gross settlement
SCT	SEPA credit transfer
SDD	SEPA direct debit
SEPA	Single Euro Payments Area

SLD	Securities Law Directive
SMP	Securities Markets Programme
SSP	Single shared platform
STEP	Short-term European paper
STRO	Special term refinancing operation
TARGET	Trans-European Automated Real-time Gross settlement Express Transfer system
TFEU	Treaty of the functioning of the European Union
TR	Trade repositories
T2S	TARGET2-Securities
UNIDROIT	International Institute for the Unification of Private Law
WFE	World Federation of Exchanges

## PREFACE

The ECB's annual report on financial integration in Europe contributes to the advancement of the European financial integration process by analysing its development and the related policies.

The Eurosystem has a keen interest in the integration and efficient functioning of the financial system in Europe, especially in the euro area, as reflected in the Eurosystem's mission statement. Financial integration fosters a smooth and balanced transmission of monetary policy throughout the euro area. In addition, it is relevant for financial stability and is among the reasons behind the Eurosystem's task of promoting well-functioning payment systems. Without prejudice to price stability, the Eurosystem also supports the objective of completing the EU Single Market, of which financial integration is a key aspect.

In September 2005 the ECB published a first set of indicators of financial integration and an accompanying report assessing the state of euro area financial integration. Since then the work on financial integration has evolved and has resulted in the publication of a yearly report.



## KEY MESSAGES

### OVERALL ASSESSMENT

- In the recent years, the financial crisis has led to a marked deterioration in European financial integration. Specifically, during 2011 the intensification of the European sovereign bond market crisis strongly affected the euro area financial system, whose degree of integration has deteriorated further. After the turn of the year, and especially after the allotment of the second ECB 3-year refinancing operation, the indicators of financial integration have shown signs of improvement.
- Since 2007, the integration of pan-European financial services suffered a clear setback. In light of this development, it is important to acknowledge the benefits that have resulted from financial integration coming from European initiatives during the past 25 years. A section of this report surveys this process, explaining these benefits and quantifying some of them.
- The enhancements of the Single Market Programme, the strengthening of the euro area policy frameworks regarding prudential supervision as well as macroeconomic and fiscal policies accompanied by policy actions at national level, need to be brought forward. The completion of the current institutional reforms, constituting a first step towards a fiscal union as well as an even more European set-up of supervision, is desirable as it should contribute to a better environment that can surpass the crisis.

### MONEY MARKETS

- Due to the intensification of the sovereign euro area bond market crisis, secured and unsecured money markets have become increasingly impaired, especially across borders. The pricing of risk in the repo market has become more dependent on the geographic origin of both the counterparty and the collateral, in particular when these were from the same country, which contributed to additional money market segmentation and fuelled country and financial risks.
- With the aim of preserving the integrity of the monetary policy transmission process, the ECB provided intense liquidity and credit support to financial institutions and undertook a number of monetary policy measures to alleviate funding tensions and market uncertainty.

### BOND MARKETS

- Euro area sovereign bond markets experienced severe tensions, giving rise to concerns of systemic nature. Wealth holders are now acutely aware of sovereign credit risks and price them accordingly. Euro area sovereign yields have diverged further, overall, in 2011. In the most intense phases of the sovereign debt crisis, there may have been an overestimation of risk regarding some euro area sovereigns, leading to an overshooting of the respective yields.
- Corporate bond markets have also experienced significant tensions, in both the financial and non-financial sector. Indicators suggest that country-level effects have become more important in driving yield developments, reflecting the differences in the fiscal situation and economic outlook of euro area sovereigns.

**EQUITY MARKETS**

- The impact of the sovereign crisis on cross-border integration seems to have been limited in equity markets, relative to bond markets. Cross-border holdings are not displaying significant discrimination with regard to the country of origin. Also national stock price indices seem to be reacting without an overwhelming country-specific influence.

**BANKING MARKETS**

- The indicators of the euro area banking market integration generally signalled a lower pace of deterioration during the financial crisis, relative to other markets. However, more recently in both the retail and wholesale euro area banking markets there is evidence suggesting a slow erosion of the earlier – equally slow – progress towards financial integration.

## EXECUTIVE SUMMARY

During 2011, and increasingly during the second part of the year, new tensions arose in the euro area money and sovereign bond markets amidst a resurgence of risk aversion and market volatility.

The indicators of money market integration presented in this report suggest that, at shorter maturities, the integration gains achieved in early 2011 were reversed. Longer maturities appeared somewhat more stable, albeit showing some deterioration. A deterioration occurred also in the secured market segment, usually more resilient to market stress.

Euro area sovereign bond markets experienced severe tensions in 2011; sovereign yields diverged further and bond yields of larger countries also occasionally came under intense pressure. In some cases, certain market segments became dysfunctional.

In response, during the second half of 2011 the ECB provided intense liquidity and credit support to financial institutions introducing further measures to support a smooth, balanced and effective transmission of monetary policy. These measures included the reintroduction of the 12-month refinancing tenders, two 36-month tenders (December 2011 and February 2012), and a continued use of the fixed rate-full allotment method in the ECB main refinancing and longer-term operations. Following a gradual decline in excess liquidity of the banking system in the early months of 2011, the recourse by banks to the ECB's open market operations increased again in the second half of that year.

Conversely, the impact of the euro area sovereign debt crisis on the equity markets has so far remained comparatively limited.

The phenomena just described have induced a re-emergence of segmentation in euro area retail and wholesale banking markets. The retail markets, initially less affected, have gradually become somewhat more influenced as the stress in other compartments persisted.

**In chapter II, Special Feature A, entitled "The Benefits of the EU's Single Financial Market revisited in light of the crisis",** reviews the goals and the successive steps of the Single Market Programme, with a particular focus on the EU Single financial market program over the last 25 years. Through the use of quantitative measures, the gains achieved in some key market segments, closest to the interest of individuals and businesses, are evaluated to measure the progress made, and to appreciate the relevance of the more recent reversal.

In particular, the analysis shows that households and corporations from all euro area countries have benefited to a varying but nonetheless substantial degree from lower and more homogeneous financing costs. Returns on and costs of banking products have also displayed a significant convergence across countries, as a result of market integration as well as more stable macroeconomic conditions.

**Special Feature B, entitled "The effects of weaker financial integration on monetary policy transmission",** analyses the evidence documenting the impact of the increased fragmentation on the transmission mechanism, showing how financial integration has deteriorated in both the funding and lending markets, as well as how the monetary transmission via banks and via the financial markets was impaired. The evidence points to a significant impairment of the monetary transmission channels in the euro area, leading to high heterogeneity across countries and even cases of severe distortions of monetary transmission itself. Such negative impact was mitigated by the Eurosystem's monetary policy measures.

**Special Feature C, entitled "The consequences of reduced financial integration for the Eurosystem's operational framework",** studies the consequences of the impairments of financial integration for the implementation of monetary policy. It shows how the non-standard measures, from liquidity measures to outright purchases, have allowed the operational framework to

function even in unprecedented circumstances, mitigating the effects of impaired financial integration on the implementation of monetary policy.

*Special Feature D, entitled “Institutional reform in the European Union and financial integration”* examines from a financial integration perspective the failures of the euro area financial and institutional framework before the crisis, with a focus on both the regulatory and supervisory arrangements in the financial services sector and the macroeconomic and fiscal governance. The analysis shows that the inadequacies of the EU financial and institutional framework have played an important role in undermining the stability and integration of the euro area financial sector during the crisis. Against this background, the reforms underway are reviewed, assessing how they can contribute to restoring financial integration on a more durable basis. The current reforms in the EU have the potential to create positive and mutually reinforcing externalities between a stronger financial and institutional frameworks and financial integration. The current reforms will strengthen the resilience of the financial markets and contribute to mitigate the risk of vicious circles of market instability and fragmentation observed during the crisis.

*Special Feature E, entitled “Sectoral balances and euro area financial integration”* analyses how intra-euro area payments imbalances have developed in the euro area in recent years. The analysis suggests that euro area financial integration increased during the expansionary years preceding the crisis, with deficits and surpluses increasingly diversified across countries and intra euro area financial transactions gaining weight. During this period, leverage increased remarkably in deficit countries. These trends have been partially reversed in recent times.

**Chapter III** provides an overview of the main activities that the Eurosystem has pursued in 2011 with the view to advancing financial integration in the euro area.

As regards the provision of advice on the *legislative and regulatory framework for the financial system*, the ECB and the Eurosystem actively contributed to strengthening the regulation of the banking and investment firms sector. The ECB provided its Legal Opinion on the Capital Requirements Directive (CRDIV) and Regulation (CRR), transposing the Basel III framework into European law. In the area of financial infrastructure, various important steps, supported by the ECB, have been undertaken. The ECB has issued Legal Opinions on the “Markets in Financial Instruments Directive” (MiFID), the “Single Euro Payments Area (SEPA) end date regulation”, the “Regulation on Over the counter (OTC) derivatives, central counterparties and trade repositories” and reacted to European Commission public consultations on the “Central Securities Depository Regulation” (CSDR), and the “Securities Law Directive” (SLD). The ECB has also actively been involved in the development of a legal entity identifier.

With respect to the role *that the ECB and the Eurosystem play as a catalyst*, support continued to be provided to projects such as Short-term European paper (STEP) and SEPA. Furthermore, in April 2011 the Governing Council decided on a loan level template regarding commercial mortgage-backed securities and small medium enterprise transactions. The ECB also acted as a catalyst in a market-led initiative aimed at reinforcing asset backed securities (ABS) as sustainable investment and funding tools, in particular with a view to improving market resilience in Europe. Finally, the ECB acted as an observer and catalyst in a market-led initiative called the Prime Collateralised Securities (PCS) Initiative. This initiative rests on EU-wide standards for ABSs which relate to quality, transparency, standardisation and simplicity. These standards are expected to lead to increased liquidity for securities which acquire the PCS label.

In the field of *enhancing knowledge, raising awareness and monitoring the state of financial integration*, the ECB continued its work on financial integration and development indicators,



as well as on financial market statistics. The ECB was involved in various research initiatives related to financial integration, in particular through the ECB-CFS Research Network. Research papers delivered within the scope of the ECB's Lamfalussy Fellowship programme addressed different aspects of risk-taking, financial fragility, and micro-prudential regulation. The ECB-CFS Research Network has been discontinued in 2012.

In May 2011, the ECB jointly with the European Commission organised an international conference on "Financial integration and stability: Strengthening the Foundations of Integrated and Stable Financial Markets", with the participation of the Vice-President of the ECB and of other top level market participants, financial regulators and academics. In this conference the ECB report on Financial Integration in Europe and the European Financial Stability and Integration Report prepared by the European Commission were presented. This conference was the second of a series, to be held annually on the same topic, jointly sponsored by the ECB and the Commission and hosted in alternation by the two institutions.

Finally, regarding *central bank services that foster financial integration*, substantial progress was made in TARGET2 through the finalisation of ISO 20022. In the area of TARGET2-Securities (T2S) a Harmonisation Steering Group was established, composed of senior level representatives from the industry and from the public sector, supporting the T2S Advisory Group in formulating and monitoring the T2S harmonisation agenda. A special taskforce, with experts from Central Securities Depository (CSDs), banks and central banks, has also been established to specifically work on developing commonly agreed solutions for adaptation to cross-CSD settlement in T2S, with the aim of increasing the efficiency of cross-CSD settlement for the CSDs and their participants on a non-discriminatory basis.



# CHAPTER I

## RECENT DEVELOPMENTS IN FINANCIAL INTEGRATION IN THE EURO AREA

*This chapter reviews recent developments in financial integration in the main segments of the euro area financial sector: i.e. the money, bond and equity markets and the wholesale and retail banking sectors.*

*During 2011, and increasingly in the second part of the year, the euro area financial system was strongly affected by the intensification of the sovereign bond market crisis. Cross-border yield spreads increased sharply in a number of countries, while access to primary markets by the more distressed sovereigns became increasingly difficult. Investors' portfolio choices and capital flows were dominated by risk aversion, as well as a search for quality and liquidity, especially during the periods of most acute market tension.*

*Overall, the integration of the euro area financial system deteriorated further, especially in the money and bond market segments. A part of the euro area banking system was virtually cut off from market-based funding sources, but continued to be refinanced through Eurosystem operations. In this context, a number of retail banking sector indicators also displayed increasing cross-border dispersion, albeit at a slower pace. Conversely, no visible deterioration seems to have taken place in the degree of cross-border integration of equity markets.*

### I INTRODUCTION

This chapter reviews the most significant developments regarding financial integration in the euro area during 2011. It focuses on the most important segments of the financial system, i.e. the money, bond, equity and banking markets. As in previous reports, the analysis is based on a number of indicators of financial integration, and the main focus is placed on the impact of the crisis on the state of integration in the main market segments.

After the financial turmoil of 2008 and a temporary improvement in the market climate

in 2009, helped by the supportive measures undertaken by central banks and governments, new tensions emerged in 2010-2011. This new phase of the crisis, which originated in the euro area sovereign bond markets, intensified sharply from mid-2011 affecting several other segments of the euro area financial system. Pursuing its mandate of maintaining price stability in the euro area as a whole over the medium term, the ECB provided intense liquidity and credit support to financial institutions and took a number of monetary policy measures to alleviate funding tensions and market uncertainty, with the central aim of preserving the integrity and effectiveness of the monetary policy transmission process (see Special Feature B).

During 2011, the developments in the euro area money market were characterised by two phases: (i) a temporary moderation in the money market tensions in the first half of the year, with a gradual decrease in the excess liquidity in the system and higher money market activity; and (ii) a serious worsening of money market conditions in the second half of 2011, owing to the intensification of the sovereign debt crisis. In the second phase, increasing segmentation across national borders was observed, including in the secured money market, usually more resilient owing to its collateralised nature. In order to ensure that euro area banks were not constrained in their access to funding and liquidity, the ECB's Governing Council decided to reintroduce the 12-month refinancing operation and then to conduct two 36-month tenders, while also significantly extending the collateral base. It was also decided to maintain the fixed-rate full allotment procedure in the main and special-term refinancing operations until at least the first half of 2012.

Quantity-based indicators signal a shift in preference among market participants from the unsecured to the secured (repo) market. This trend is consistent with price-based evidence, showing that money markets are increasingly impaired, especially across borders.

After mid-2011, developments in bond markets (sovereign and corporates) were dominated by sharp differentiation, especially across borders. On the one hand, bond prices have become much more responsive to credit risk than they were in the pre-crisis years, when they were, in an environment of global excess liquidity, dominated by a systematic underpricing of all risks. Evidence suggests that, in general, investor behaviour currently reflects a much more intense scrutiny, not only with regard to individual instruments, but also increasingly in relation to the country of origin. This reflects the interaction that exists, at national level, between the sovereign, the banking sector and the underlying real economy.

On the other hand, there may have been, recently, phases of overshooting of risk premia, in case of countries that have undertaken significant fiscal consolidation efforts. Some debt markets have become dysfunctional and access to primary markets was severely curtailed – or precluded altogether – for some issuers. At the opposite side of the spectrum, undershooting of sovereign yields has probably occurred in countries benefiting from flight-to-quality effects. In an environment of extraordinarily high uncertainty, pronounced risk aversion and accompanying large and sudden portfolio shifts across borders, such extreme movements may have led to contagion phenomena, justifying concerns of systemic nature.

In equity markets, the impact of the financial crisis on cross-border integration seems to have been limited. Cross-border holdings are not displaying significant discrimination with regard to the country of origin, while national stock price indices seem to be reacting to both international and firm-specific shocks in the usual way, without any overwhelming country-specific influence.

Finally, the available indicators of euro area banking markets generally indicated a lower degree of integration during the financial crisis, with some improvements in 2010 and early 2011. In the latter part of 2011, however, the

re-intensification of the sovereign debt crisis was reflected in an increase in dispersion in several indicators. This evidence suggests growing pressure against financial integration, in both the retail and wholesale euro area banking markets.

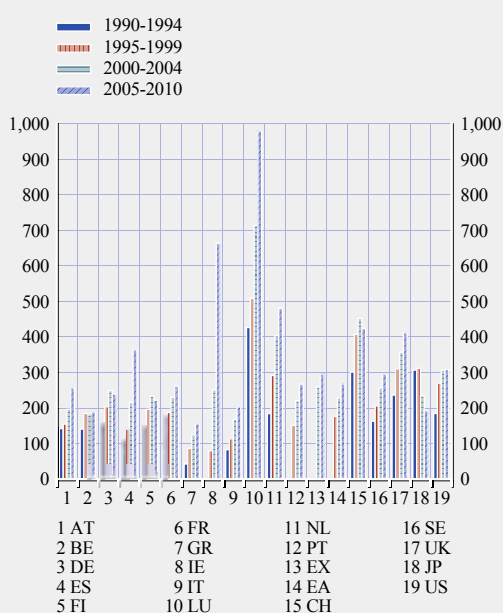
In the following sections, developments specific to the single sectors of the financial system are analysed in detail.

## 2 OVERVIEW OF FINANCIAL MARKET SEGMENTS

A summary statistic used in recent reports to gauge the development of a financial system is the total size of outstanding stocks, bonds and bank loans as a share of GDP. Chart 1 shows that, from a longer-term perspective, the fast growth of capital markets observed in most countries during the 1990s and early 2000s has come to a halt in recent years. To some extent this reflects both a correction in prices and a

Chart 1 Size of capital markets

(aggregate volume of shares, bonds and loans to the private sector as a percentage of GDP)



Sources: BIS, ECB, WFE, IMF, Thomson Reuters, Eurostat and ECB calculations.

slowdown in issuance in some market segments (see, for example, the evidence from the bond markets discussed later in this chapter) relative to the very rapid expansion of financial activity observed in the mid-2000s.

### 3 MONEY MARKETS

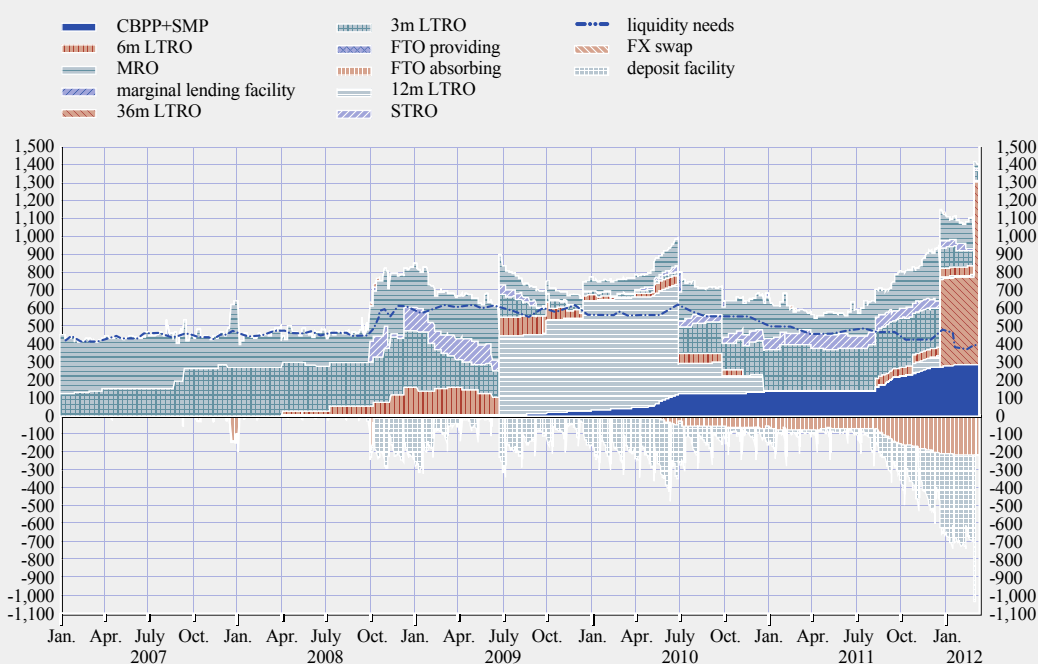
The money market was strongly affected by the deterioration in market conditions starting in 2007. Interbank markets are intrinsically vulnerable to the perception of counterparty risk. As noted in previous reports, the collapse of Lehman Brothers in the second half of 2008 led to deterioration in market confidence, which resulted in reduced financial integration. That event marked the start of an upward drift in cross country dispersion for overnight rates and a decrease in interbank market activity, particularly in the unsecured segment. Since 2008 the ECB's Governing Council has adopted a series of extraordinary support

measures in response to the increased market tensions (see Special Feature C). As a result, tensions moderated in 2009, but they re-emerged in 2010 as a consequence of increasing pressures in euro area government bond markets. The ECB's Governing Council intervened again with further measures, in order to support a smooth, balanced and effective transmission of monetary policy. This contributed to a temporary improvement in the measured integration of the euro area money market.

During the second half of 2011 a further intensification of the euro area sovereign bond market crisis triggered a resurgence of risk aversion and market volatility, impacting further on market integration. The deterioration also became visible in the secured market segment, which is usually more resilient to market stress and has accordingly gained in importance in the recent years. A significant increase in price differentiation in repo markets occurred as market participants increasingly took into

Chart 2 Recourse to the ECB's market operations and standing facilities

(EUR billion)



Source: ECB.



account correlation risks (see box 2 entitled “The increased segmentation of the euro area repo markets during the sovereign debt crisis” in Special Feature C). The pricing of risk became much more dependent on the geographic origin of both the counterparty and the collateral, in particular when these were from the same country, thus contributing to additional money market segmentation.

In the second half of 2011 the ECB introduced further measures to provide liquidity support to financial institutions. These included the reintroduction of the 12-month refinancing tenders and, later, the decision to conduct two 36-month tenders (in December 2011 and again in February 2012). The ECB also continued to apply the fixed-rate full allotment procedure in its main refinancing and longer-term operations. After a decline in bank excess liquidity after the end of the first one-year operation (on 1 July 2010), recourse to ECB’s open market operations increased again in the second half of 2011. This drove the level of excess liquidity in the banking system back up to very high levels (Chart 2).

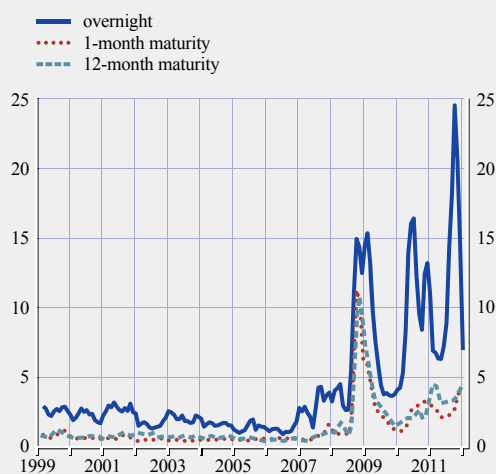
Price-based measures indicated a decline in the integration of the money market in 2011, especially at short maturities. The integration gains achieved in early 2011 were reversed. At longer maturities, the price-based measures of integration appeared somewhat more stable, although they showed some deterioration in 2011, they remained well below their 2008 peak. As illustrated below, quantity-based indicators, while showing a substantially unchanged contribution by different geographical components, indicated a shift from unsecured to secured market.

### PRICE-BASED INDICATORS

The cross-country standard deviation of EONIA<sup>1</sup> lending rates has shown an upward trend with large fluctuations since 2007 (Chart 3). Since then, the average dispersion of rates across countries has remained much more volatile than in earlier years.

**Chart 3 Cross-country standard deviation of average unsecured interbank lending rates across euro area countries**

(61-day moving average; basis points)



Sources: EBF and ECB calculations.

Since 2010 the time profile of this dispersion has mirrored closely the periods of stress in sovereign euro area bond markets, particularly in certain countries. The cross-country standard deviation of average unsecured interbank overnight lending rates across euro area countries has risen sharply in recent months. Following a decline in early 2011 to about 6 basis points, this indicator has surpassed the levels witnessed in the spring of 2010. This pattern is linked to the deterioration in the fiscal positions of a number of euro area countries, as the decline in sovereign bond prices generated concerns over the impact on banks’ balance sheets. As a result, many banks saw their access to the unsecured money market severely curtailed. The indicator though came back to around 7 basis points in early 2012 following the allotment of the 3-year refinancing tenders of the ECB.

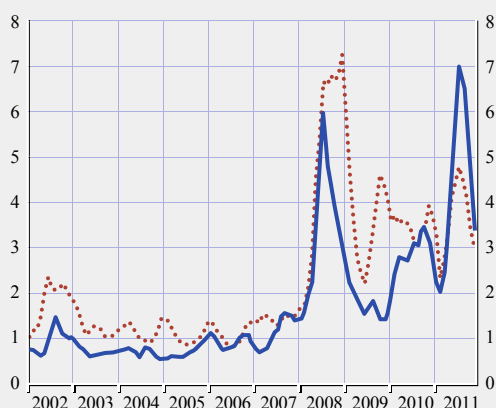
The cross-country standard deviation of the EURIBOR<sup>2</sup> moved up at all maturities, albeit

1 The EONIA is the effective overnight reference rate for the euro. It is computed as a weighted average of all overnight unsecured lending transactions undertaken in the interbank market, initiated within the euro area by the contributing banks.  
2 The EURIBOR is the rate at which euro interbank term deposits are offered by one prime bank to another prime bank within the euro area and is published daily at 11.00 a.m. CET for spot value (T+2).

**Chart 4 Cross-country standard deviation of average interbank repo rates across euro area countries**

(61-day moving average; basis points)

— 1-month maturity  
 ..... 12-month maturity



Sources: EBF and ECB calculations.

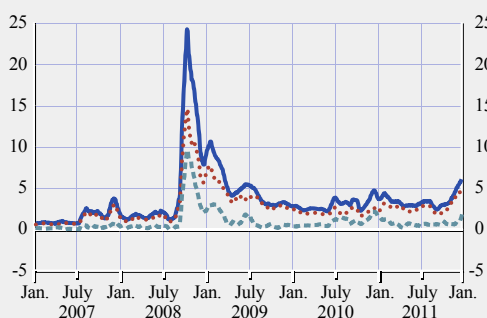
not to as large an extent as for the overnight market (see Chart 3, one-month and 12-month maturities). After a contained spike in early 2011, the dispersion has been relatively stable in the more recent period, when compared with 2010. In August 2011 the cross country standard deviation of the average unsecured interbank lending rate stood at about 2 basis points for one-month maturity instruments and at around 3 basis points for instruments with 12-month maturity. It is worth noting, however, that the EONIA rate used for the overnight maturities is a volume weighted rate based on transactions over a full day while the EURIBOR is a posted reference rate at a given point in time each day. This difference explains to some extent the unequal behaviour of these rates. In addition, short-term rates are inherently more volatile on a day to day basis as they are the first to capture the liquidity conditions in the system. In 2010 the standard deviation of secured interbank lending rates (EUREPO)<sup>3</sup> peaked above 3 basis points for both one-month and 12-month maturity instruments, or almost 4 basis points for 12-month maturity instruments (Chart 4).

**Chart 5 Standard deviation of the EURIBOR**

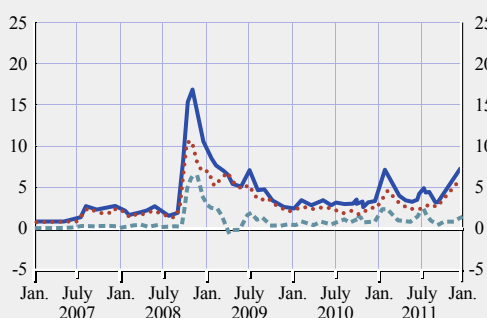
(61-day moving average; basis points)

— cross-country  
 ..... intra-country  
 - - - difference

**1-month maturity**



**12-month maturity**



Sources: EBF and ECB calculations.

Note: The cross-country and intra-country standard deviations are based on a restricted group of countries only, namely: Germany, France, Italy, Belgium, the Netherlands and Spain.

These developments halted in early 2011, but intensified again in the second half of 2011 and the indicator for the one-month maturity came to 7 basis points, higher than the levels reached in 2008.

Another perspective on the developments in 2011 in money market integration is offered by the cross-country and intra-country standard deviations of EURIBOR rates (Chart 5). As stated in previous reports, following the acute tensions in euro area money markets in 2008

<sup>3</sup> The EUREPO is the rate at which, at 11.00 a.m. CET, one bank offers, in the euro area and worldwide, funds in euro to another bank if in exchange the former receives from the latter the best collateral within the most actively traded European repo market.

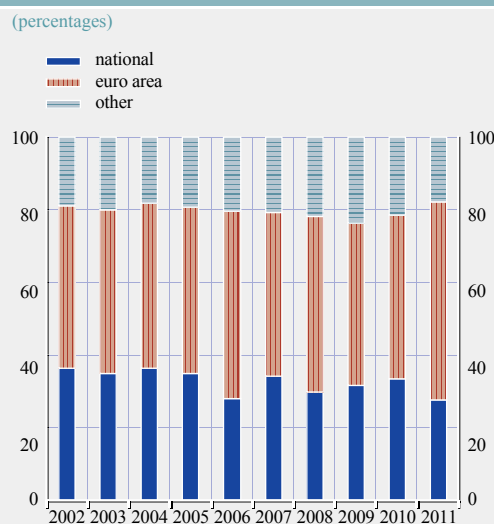
and 2009, the dispersion of rates had increased especially across countries, as reflected in an increased in the difference between the cross-country and the intra-country measures of dispersion. More recently, both measures have increased, though remaining well below the 2008 peaks. These movements suggest that market integration deteriorated, in the recent period, within as well as across countries. It should be borne in mind that the sources of deviation may differ across periods; in 2008 the counterparty risk was mainly related to counterparty holdings of specific asset classes, such as asset-backed securities. During the current phase it was probably more related to exposure to sovereign bonds.

#### QUANTITY-BASED INDICATORS

Helpful information in the context of the present discussion comes from the breakdown of transactions according to the geographical location of the counterparty. The ECB's Euro Money Market Survey<sup>4</sup> reveals that in the second quarter of 2011 more than 50% of the money market trades (unsecured and secured) were conducted with counterparties outside the national borders, but within the euro area. Just under 30% of trades were conducted within the respective country and around 20% of the trades were conducted with counterparties outside the euro area. This composition was relatively stable over the last decade (Chart 6). The turmoil of late 2008 and the sovereign debt crisis led to some increase in relative exposure to domestic counterparties relative to other euro area counterparties until 2010. Conversely, an increase in the incidence of cross-border transaction over domestic ones was observed in 2011; it should be noted, however, that market conditions in the second quarter of 2011, when the survey was conducted, were still relatively benign. More recent survey data will be available in the course of 2012.

As intra-euro area non-domestic trades are the largest component of secured and unsecured transactions, it is of interest to look closer into this segment of the market. Chart 7 shows a

**Chart 6 Geographical counterparty breakdown for secured and unsecured transactions**



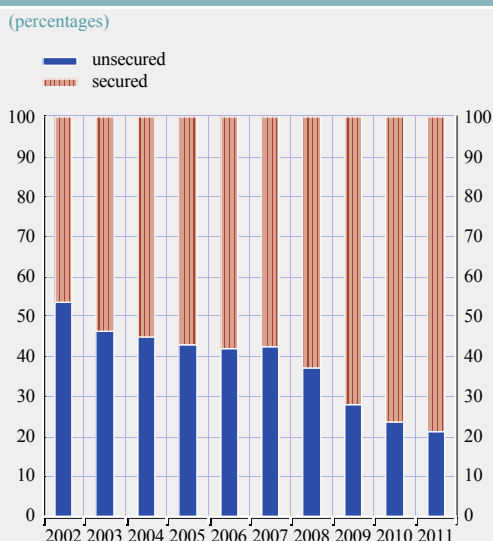
Source: ECB's Euro Money Market Survey.

rapid decline, in relative terms, in the unsecured money market and a shift to secured trading owing to increased risk aversion in the recent years. This result is not surprising, given that the collateralised nature of repo transactions make them relatively more resilient to heightened credit risk concerns compared to unsecured transactions. Within the secured market, as discussed later in Box 2 in Special Feature C, the share of transactions via central counterparties (CCPs) increased markedly. The nature of CCPs – offering access to parties in different countries, minimising counterparty risk<sup>5</sup> and providing anonymity – made them not only resilient in the crisis, but also the preferred and in some cases the only available means of funding. Owing to the increased use and availability of CCPs, activity on the secured market remained strong among euro area

4 The ECB's Euro Money Market Survey has been conducted on an annual basis since 1999 and compares data for the second quarter of the current year with data for the second quarter of the previous year. The survey uses a permanent panel of 105 banks wherever longer-term comparisons are made, but also includes data provided by the full panel of banks, which has grown over time, in order to obtain a more complete picture of the current market. The full panel currently comprises 170 banks.

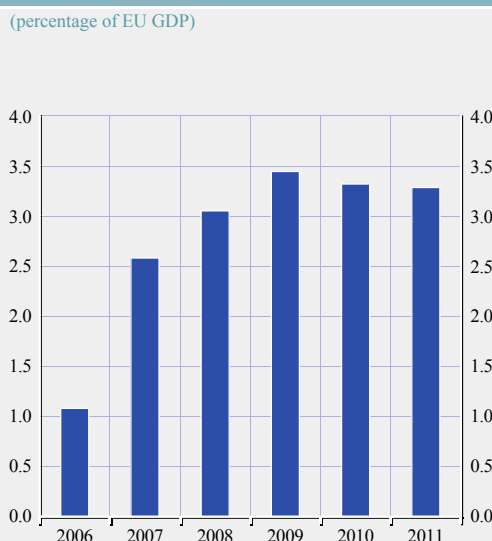
5 This is due to the fact that CCPs stand between the buyer and the seller (becoming a seller to each buyer and buyer to each seller), thereby assuming the counterparty risk.

**Chart 7 Breakdown of secured and unsecured transactions executed with non-domestic counterparties in the euro area**



Source: ECB's Euro Money Market Survey.

**Chart 8 Outstanding amount of Short-Term European Paper (STEP) debt securities**



Sources: ECB and Eurostat.

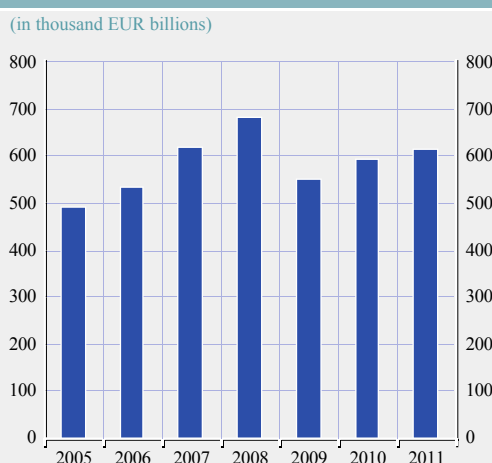
countries even in periods of high risk aversion in the market, while the unsecured market dried up due to its riskier nature.

#### OTHER INDICATORS

In the years following the introduction of the euro, the integration of the short-term paper market progressed slowly relative to other market segments. This was due to differences in market practices, standards and legal frameworks between EU countries. In order to deal with this gap in financial integration, the STEP initiative was launched in 2006, aimed to develop a pan-European short-term paper market through the voluntary compliance of market participants with a core set of commonly agreed standards. The STEP label is granted at the request of the issuer and certifies that the issue complies with the STEP standards. The outstanding volume of STEP debt securities increased by more than three times in the first two years of its existence until late 2008 (Chart 8) and stabilised afterwards. At the end of December 2011 the total outstanding volume of STEP paper was €415 billion, and there were a total of 169 STEP-labelled programmes.

The rapid integration of money markets after 1999 owed much to the creation in 1999 of the Trans-European Automated Real-time Gross settlement Express Transfer system (TARGET), a payment system operated by the Eurosystem and designed to handle large-value euro payments. In May 2008 a second generation system, TARGET2, was launched. TARGET2

**Chart 9 TARGET2 – value settled per year**



Source: ECB.

is based on a Single Shared Platform, allowing the provision of a harmonised service level with a single price structure. In total, 24 EU central banks (including the ECB) and their national communities are members of TARGET2. The last two members to join the system were the Bulgarian National Bank in 2010 and Banca Națională a României in 2011.

In 2011 TARGET2 settled a daily average of 348,505 transactions with a daily average value of €2,385 billion. TARGET2's share in total large-value payment system traffic in euro was 91%. Looking at the historical development (Chart 9) of the settled values, there is a noticeable decline in settled values after 2008 as a result of the financial crisis.

#### 4 BOND MARKETS

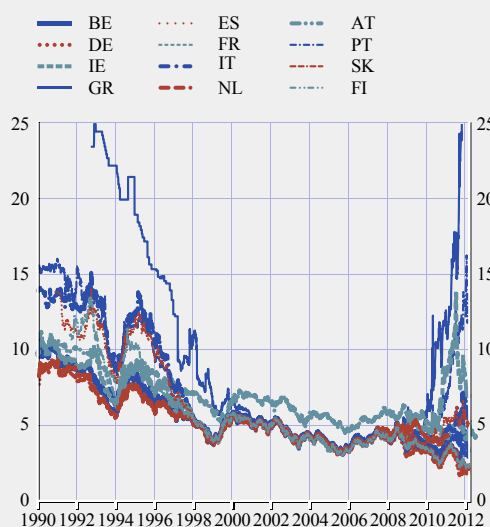
##### SOVEREIGN BOND MARKETS

Euro area sovereign bond markets experienced severe tensions in 2011. Whereas in 2010, at the outset of the sovereign debt crisis, only three relatively small countries were strongly affected, in 2011 the bond yields of larger countries also came under pressure (Chart 10). At the same time, even during the significant market turbulence in the second half of 2011, marked declines in sovereign yields could be achieved through credible announcements and actual implementation of adequate fiscal adjustment measures, as can be seen, for example, in the case of Ireland.

The developments in the sovereign bond markets can be assessed from the perspective of the co-movement of yields; in particular, high cross-border co-movements signal the presence of common driving factors. Chart 11 presents the results of a principal component analysis conducted on the daily yield changes. The lines show the percentage of variance of yield changes explained by the first (red line) and the second (green line) principle component, while the bars show the number of informative principle

**Chart 10 Euro area ten-year sovereign bond yields**

(weekly averages; percentage points)



Sources: Thomson Reuters and ECB.

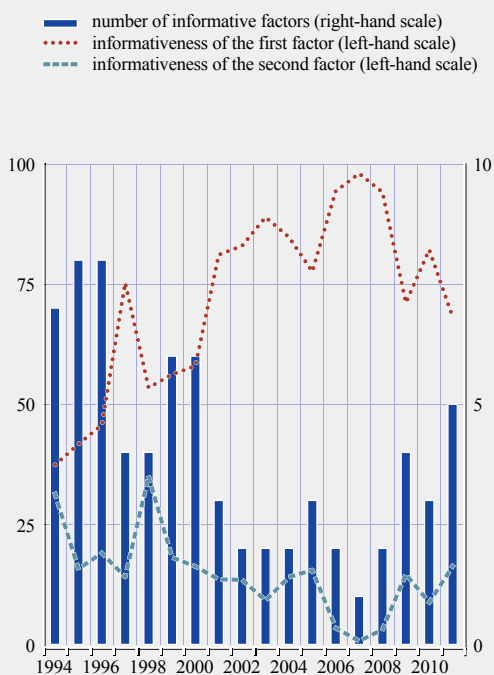
Notes: The chart presents the yields of euro area sovereign bonds for the country composition as in 2011. The yields for Cyprus, Estonia, Luxembourg, Malta and Slovenia are excluded owing to infrequent or a lack of observations. Last value for Greece in this chart: 31% (not shown).

components. There was a clear concentration of relevant factors – signalled by increase in the relevance of the first factor and decrease of the others) in the years prior to the crisis. After 2007, and specifically in 2011, the number of factors behind the sovereign yield movements increased and the information content of the first common factor declined, suggesting a somewhat more heterogeneous determination of euro area sovereign bond market movements, possibly due to more cross-border risk discrimination and also possible market fragmentation amid the recent market tensions. It is noteworthy, at the same time, that heterogeneity in euro area sovereign bond markets as measured by the principal component analysis is still lower than in the period before the introduction of the euro.

Developments in the sovereign bonds markets are affected by a multiplicity of factors. First of all, bond spreads reflect increasing differences in the perceived sustainability of sovereign fiscal

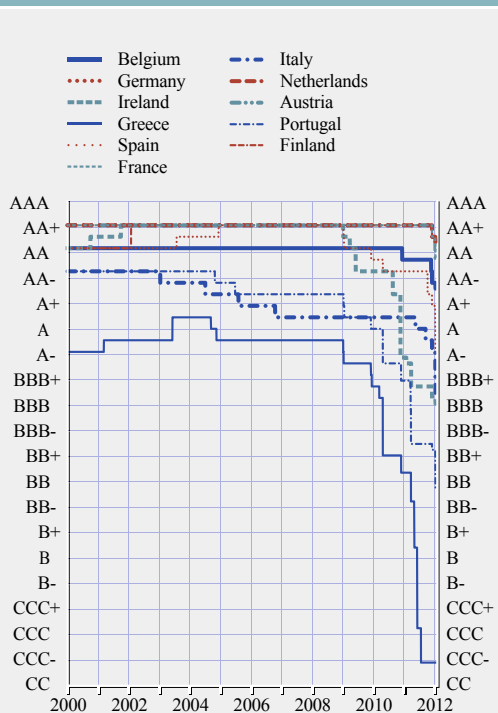
**Chart 11 The information content of factors explaining daily yield changes in euro area sovereign bond markets**

(yearly data; percentages)



Sources: Thomson Reuters and ECB calculations.  
Notes: Principle components of daily yield changes were computed for each year in which the whole sample of yields is available from the beginning of the year, starting with 1994. Differentiation and partition of the sample ensures the stationarity of time series used for the analysis. The chart presents the percentage of the variance explained by the first and second principle components (red and green lines, respectively) and the number of informative principle components (i.e. the factors whose explanatory power is more than 2%; blue bars). The sample includes 11 euro area countries. It does not include Cyprus, Estonia, Luxembourg, Malta, Slovakia and Slovenia.

**Chart 12 Sovereign debt ratings of selected euro area countries**



Sources: Thomson Reuters and ECB.  
Note: The chart shows Standard & Poor's ratings for long-term sovereign debt.

positions (for example, as assessed by the rating agencies, shown in Chart 12). However, some of these differences in fiscal positions have existed for many years, as can also be seen to some extent in the differences in ratings throughout the period of monetary union. Hence, differences in fiscal situation alone cannot explain the increasing width of euro area spreads. The second factor which influences bond pricing is risk aversion, or the extent to which changes in risk have an impact on the prices. For example, during 2003-2007 the spreads were very small and did not reflect the differences in fiscal positions between countries, even when ratings changed. This period was thus characterised by a significant underpricing of risk, when

investors searches for yield in the environment of abundant global liquidity. More recently, market pricing of risk has increased in most segments. Current prices in euro area markets reflect both fiscal sustainability concerns and higher risk aversion. In fact, market participants point to an “overpricing of risk” in respect of some euro area countries.

Beyond fiscal-related concerns, as analysed in the 2011 report,<sup>6</sup> market prices are also influenced by other factors, such as the strong demand for safe haven assets in periods of high

<sup>6</sup> See ECB Financial Integration Report 2011, Special Feature C, “Developments in euro area bond markets during the financial crisis”.

tension and shifts in investor demand. The impact can be observed in yield spreads between government-guaranteed agency bonds and sovereign bonds for Germany (Chart 13). Since sovereign bonds are more liquid than agency bonds, investors can make a shift to safe assets which can be reversed quickly by buying sovereign bonds rather than the same-quality agency bonds. Therefore, while in normal times the agency-sovereign spread is around 10 basis points, in times of high safe haven flow it will increase.<sup>7</sup> This leads to downward pressure on the German sovereign yield curve. Chart 13 illustrates this effect for different maturities. In recent years, when tensions in euro area sovereign debt markets intensified, liquidity premia in the German market increased markedly, towards the levels close to those observed in late 2008. In the beginning of 2012, with situation in financial markets somewhat improving, liquidity premia also declined to a certain extent.

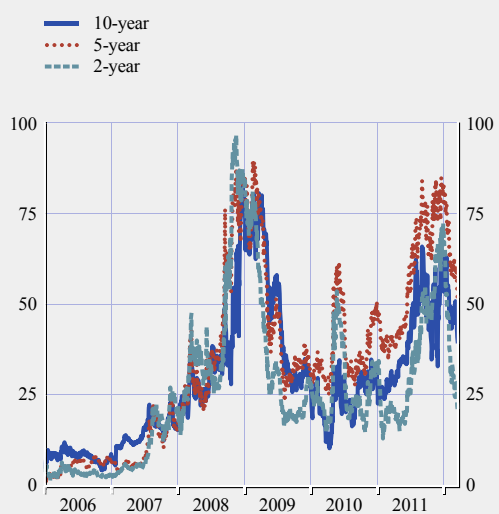
Overall, priced-based evidence for euro area sovereign bond markets suggests that country-

level effects have become more important in driving yield developments. This reflects the differences in the fiscal situation and economic outlook of euro area sovereigns, as well as increased risk aversion among investors and portfolio shifts towards liquid safe haven assets. Regarding quantity-based evidence, some countries have experienced hampered access to the primary market, especially during periods of significant market tension. Cross-border holdings of government bonds by euro area Monetary financial institutions (MFIs), as a ratio to total holdings, has been on a declining trend since 2006 and has now returned to the levels observed before the beginning of the third stage of Economic and Monetary Union (EMU) (Chart 14). The reason for the initial decline in the share of government bond holdings is portfolio reallocation, to corporate bonds, as well as most probably to international assets. The decline in the recent two years is most

7 This spread will also increase in times when greater value is put on the possibility of quick trading, i.e. when the pricing of liquidity increases.

**Chart 13 Liquidity premium between German sovereign bonds and German agency bonds**

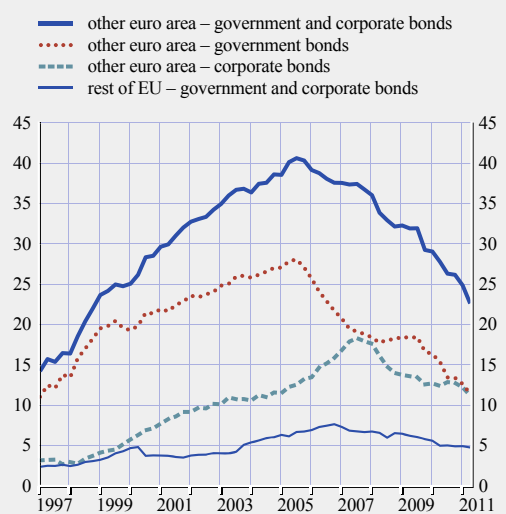
(daily data; basis points)



Sources: Thomson Reuters and ECB.  
Note: Zero-coupon spreads between German agency (Kreditanstalt für Wiederaufbau) and government bond yields.

**Chart 14 Share of MFI cross-border holdings of debt securities issued by euro area and EU corporates and sovereigns**

(share of total holdings, excluding the Eurosystem; percentages)



Source: ECB.  
Note: Outstanding amounts are classified by the residency of the issuer.

likely due to the increased propensity of banks to hold domestic government bonds.

### CORPORATE BOND MARKETS

Corporate bond markets also experienced significant tensions during 2011. Like for sovereign bonds, there was a divergence in corporate bond risk premia across countries. To illustrate this, Chart 15 shows the dispersion of CDS premia across countries for the telecommunications, banking and sovereign market sectors.<sup>8</sup> The divergence of bank CDS premia across euro area countries increased, reflecting similar developments in sovereign markets. For the telecommunications sector, the cross-country dispersion also increased during 2011, but to a somewhat smaller extent than for government and financial bonds.

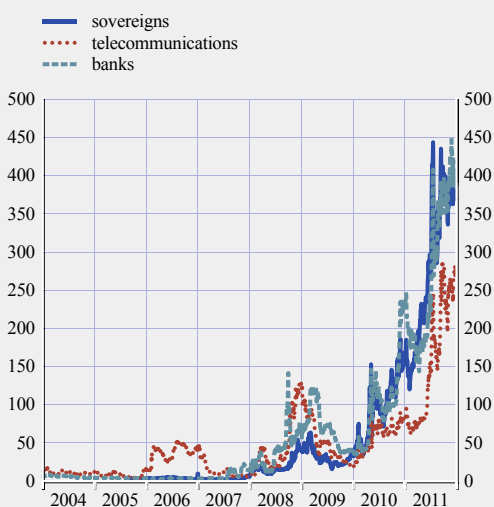
In addition to higher cross-border risk discrimination, a higher differentiation of prices and perceived credit risks was recently

observed also among individual issuers within the corporate sector. Since the financial crisis, investors have been applying more rigorous risk pricing, also in relation to individual company-specific risks within the same country. Charts 16 and 17 present the yield curves for the covered bond markets of Germany and France, which are estimated jointly for various issuers in these markets. For both countries, the dispersion of individual bonds around the curve was high in 2011, particularly when compared to the very low dispersion in 2008. This shows that the markets tend to differentiate not only with regard to country of origin, but also with regard to individual issuer. Clearly, this does not rule out the possibility of additional influences on corporate yields stemming from the sovereign sector, and also vice versa, especially in countries where both risks are perceived to be high.

<sup>8</sup> The CDS markets are used here owing to better data availability, but the results should correspond to the developments in the cash bond markets.

Chart 15 Dispersion in five-year CDS premia across euro area countries

(daily data; basis points)

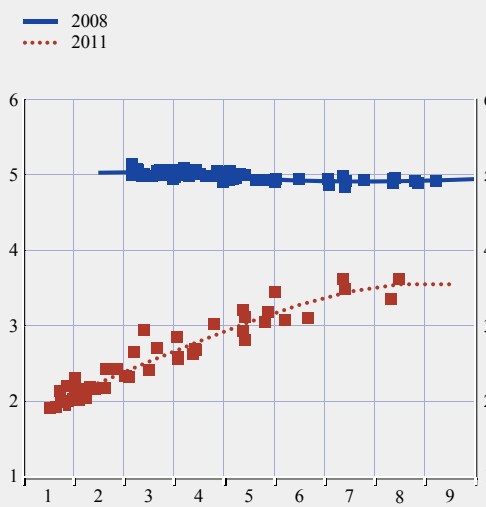


Sources: Thomson Reuters and ECB calculations.

Notes: The data do not include Greece and Ireland. Greece is excluded owing to very high sovereign CDS premia, and Ireland is excluded owing to the very high CDS premia of its telecommunications company. For detailed information on the construction of the sectoral indices, see Chart 11 in the Statistical Annex.

Chart 16 German covered bond yield curves in 2008 and 2011

(percentages per annum; 7 July 2008 and 4 July 2011)



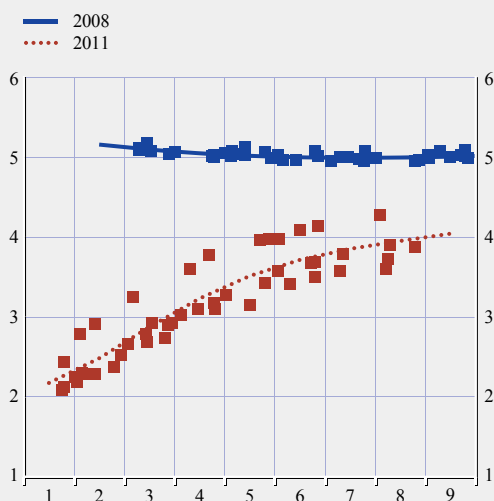
Sources: Bloomberg and ECB calculations.

Notes: For both years, the first Monday of the second half of the year (in July) is chosen. Estimated par yield curves (solid lines) and observed yields to maturity (points) are presented.



**Chart 17 French covered bond yield curves in 2008 and 2011**

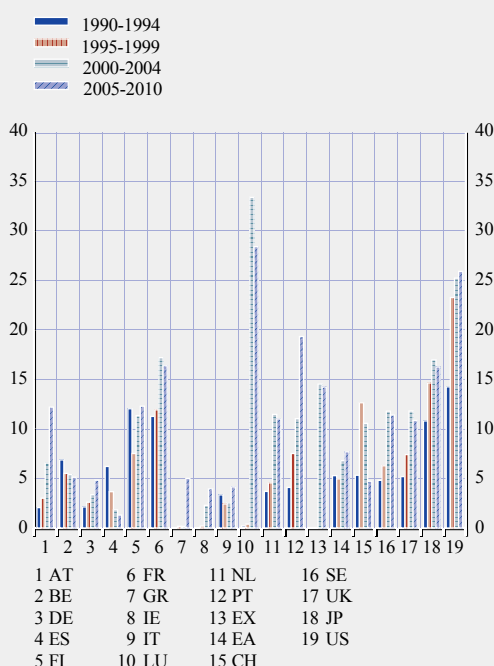
(percentages per annum; 7 July 2008 and 4 July 2011)



Sources: Bloomberg and ECB calculations.  
Notes: For both years, the first Monday of the second half of the year (in July) is chosen. Estimated par yield curves (solid lines) and observed yields to maturity (points) are presented.

**Chart 18 Outstanding amounts of Debt securities issued by private non-financial corporations**

(percentage of GDP)



Sources: BIS, ECB, Eurostat and IMF.

Finally, some types of instrument, most notably ABSs and unsecured bonds, became far less popular among investors, so these market segments were characterised by low issuance. This is related to many factors, including risk perception, the impact of international regulation and the need for deleveraging. It does not necessarily imply lower financial integration across borders. However, if this tendency persists, it may lead to lasting changes in access to finance for issuers in regions which have relied strongly on these market segments, as opposed to issuers in regions where other market segments (like covered bonds) are more developed.<sup>9</sup>

Although the issuance in some sectors of the corporate bond market was adversely affected during 2011, taking a long-term retrospective for the euro area as a whole the ratio of corporate debt securities issued to GDP (on a 5-year average basis) remains higher than it was in the early period of the euro area. Also, the differentiation across euro area countries has declined with some countries entering the market (Chart 18). With regard to cross-border holdings, their share in total holdings of corporate debt securities declined, as it did in the case of sovereign bonds (Chart 14), but in the case of corporate debt securities, the share of cross-border holdings is still more than twice as high as it was before the third stage of EMU.

## 5 EQUITY MARKETS

Recent developments in equity markets reveal a lower degree of cross-country heterogeneity than in bond markets. In 2011, although obviously affected by the prevailing market tensions, there did not seem to be much divergence between stock markets in terms of the factors driving their movements. Chart 19 shows the results of a principal component analysis, analogous to

<sup>9</sup> For a more detailed analysis of current developments and integration in the markets for banks' longer-term debt financing, see the article entitled "Euro area markets for banks' long-term debt financing instruments: recent developments, state of integration and implications for monetary policy transmission" in the November 2011 issue of the ECB's Monthly Bulletin.

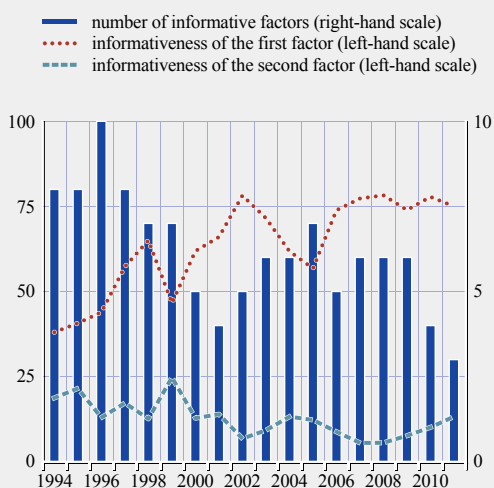
the one presented for sovereign bond markets in Chart 11. The results show that the explanatory power of the first principal component has not changed significantly during the last six years. Moreover, the number of informative factors moving the euro area equity markets is now lower than before the creation of the euro, indicating an increase in equity market homogeneity. Generally, cross-country price differentiation in equity markets did not decline as significantly during the boom years as in the case of bond markets, which may partly explain why their cross-country co-movement has not shown any sudden changes during the current crisis.

Apart from the cross-country co-movement of stock markets, it is important to analyse their information processing. For this purpose, the information share of global and regional factors for the individual stock prices, as opposed

to idiosyncratic factors, can be assessed (Chart 20). The higher the contribution of global and regional factors, the less firm-specific information is processed in the equity markets of a specific country. The results show that there has been a movement towards more global and regional effects. This is related to the very significant shocks which have occurred in recent years and which influenced many markets, especially during the Lehman Brothers crisis. However, such global and regional effects can only explain much less than half of the variation in stock prices. The importance of individual factors for equity prices suggests that the under-pricing of risk in this market was not as pronounced as in bond markets. Comparing the share of company-specific information components across countries, it is relatively similar in most euro area countries and also broadly in line with developments in the United Kingdom and the United States.

**Chart 19 The number and information content of factors explaining daily stock returns in euro area stock markets**

(yearly data; percentages)

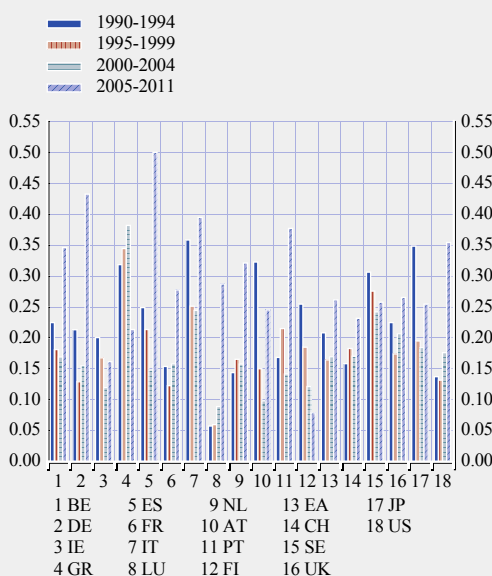


Sources: Thomson Reuters and ECB calculations.

Notes: Principal components of daily stock returns were computed for each year, starting with 1994 (as in Chart 11). The chart presents the percentage of the variance explained by the first and the second principle components (blue and green lines, respectively) and the number of informative principle components (i.e. the factors whose explanatory power is more than 2%; grey bars). The sample includes 11 euro area countries. It does not include Cyprus, Estonia, Luxembourg, Malta, Slovakia and Slovenia.

**Chart 20 Pricing of global and regional information in the stock market ( $R^2$  statistics)**

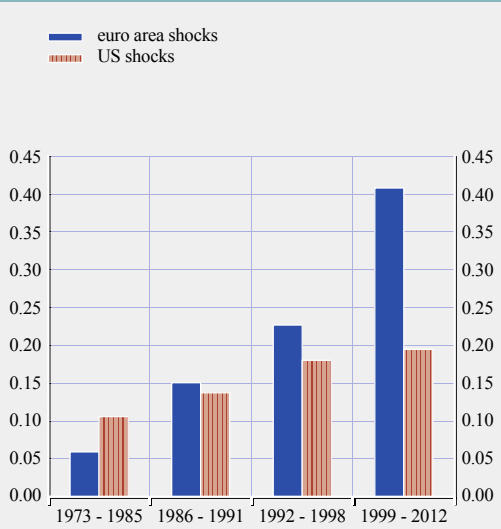
( $R^2$  statistics)



Sources: Thomson Reuters and ECB calculations.

Notes: Average  $R^2$  statistics for each country are obtained by regressing firms' stock returns on market factors, i.e. the returns on domestic, euro area, US and emerging countries' stock market indices. Low values of the indicator suggest that stock returns contain more firm-specific information. The use of  $R^2$  statistics is, however, subject to its usual caveats. The euro area average is weighted by stock market capitalisation.

**Chart 21 Proportion of variance in local equity returns explained by euro area and US shocks**

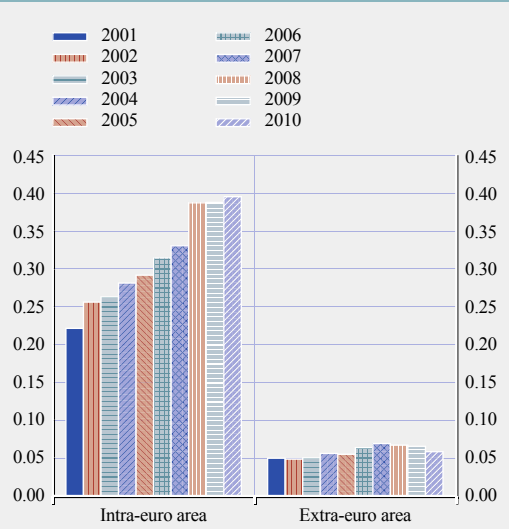


Sources: Thomson Reuters and ECB calculations.  
Notes: For the details on the estimation methodology, see notes to Chart 19 in the Statistical Annex. The strength of the influence of euro area shock might be higher during the most recent years.

Chart 21 shows that over the recent years, euro area equity markets have been increasingly sensitive to the external shocks. At the same time, sensitivity to events originating within the euro area is currently much higher than to the shocks originating in US markets. This shows that, in the current market structure, equities, although also reflecting developments outside of the euro area, are far more influenced by regional factors than was the case before the introduction of the euro.

Turning to cross-border equity holdings, Chart 22 shows that the degree of cross-border holdings of equity issued by euro area residents has increased steadily over the last decade and is now almost twice as high as in 2000. Notably, it has increased somewhat also during the sovereign debt crisis. In contrast, equity holdings by non-euro area residents have been somewhat declining since the beginning of the financial crisis. Holdings held by investment funds have declined slightly since the beginning of the financial crisis, but are still higher than before the introduction of the common currency (Chart 23). Among the reasons behind turning

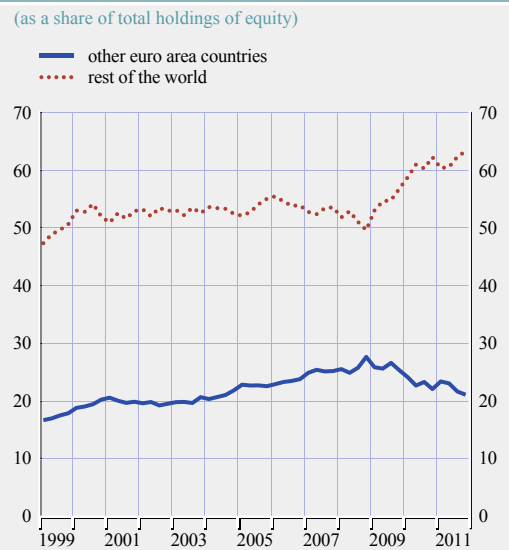
**Chart 22 The degree of cross-border holdings of equity issued by euro area residents**



Sources: IMF, Thomson Reuters and ECB calculations.  
Notes: Intra-euro area is defined as the share of equity issued in the euro area residents and held by residents of other euro area countries (excluding central banks). Extra-euro area is defined as the share of euro area equity held by non-residents of the euro area (excluding central banks).

more towards international assets could be their relative growth potential or stronger diversification needs.

**Chart 23 Investment funds' holdings of equity issued in other euro area countries and the rest of the world**



Source: ECB.

## 6 BANKING MARKETS

The financial crisis has led to lower integration of euro area banking markets in general, although in different ways across types of activity. Some improvements were observed in the course of 2010 and in early 2011. Although data for the second part of 2011 are incomplete, renewed market tensions are likely to have induced a re-emergence of segregative pressures in euro area retail and wholesale banking markets.

Special Feature B contains an examination of the consequences of the lack of financial integration for monetary policy transmission, assessing the impact of cross-country heterogeneity of financial markets and intermediaries on the transmission of monetary policy, with a particular focus on the impact of the intensification of the sovereign debt crisis in the course of 2011. The feature offers an overview of the impact of the financial crisis on various funding channels of banks, focusing on evidence of cross-country disparities in access to various sources of funding and the consequences for the financing of the non-financial private sector of the resulting dispersion and market fragmentation across countries.

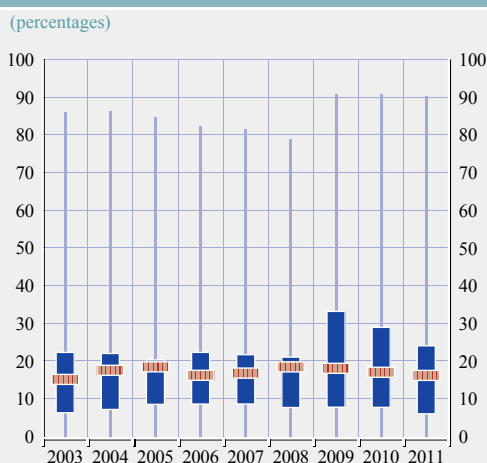
### STRUCTURAL INDICATORS

Indicators suggest that the euro area retail banking markets, which were initially less affected by the financial turmoil owing to their generally more fragmented structure, have gradually become somewhat more affected.

The cross-border activity of banks is a prime indicator of the progress of euro area banking market integration. One simple way to measure the development of cross-border activity is to monitor the establishment and activity of foreign branches and subsidiaries over time.

To this end Chart 24 displays across euro area countries the development of the share of assets held by foreign branches and subsidiaries established in other euro area countries with higher shares implying higher cross-border

**Chart 24 Dispersion in the share of foreign branches and subsidiaries in total bank assets across euro area countries**



Source: ECB.

Notes: The lower and upper markers show the minimum and maximum observations among euro area countries. The bottom and top of the box show the first and third quartile. The reddish brown line shows the median share of assets of branches in all euro area countries.

activity. Overall this share continues to be rather limited across the majority of countries. However, it is noteworthy that only during the last two years the crisis has reduced slightly the median degree of cross-border penetration of banking institutions. At the same time, the crisis went along with a substantial increase in the overall dispersion observed for this indicator which points to a rise in cross-country differences as regards the degree of banking market integration.

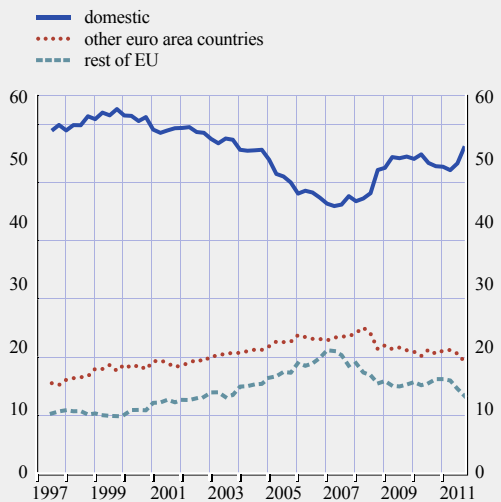
Another indicator of the cross-border presence of euro area banks is their cross-border merger and acquisition (M&A) activity. The total value of such deals has sharply declined since 2008 (see Chart 25 in the Statistical Annex).

### ACTIVITY-BASED INDICATORS

Indicators for banking activity suggest that markets which were historically more integrated also adjusted more fully and rapidly to the financial crisis. As indicated in Chart 25, after an initial crisis-induced decline, the share of loans granted to MFIs by MFIs of other euro area countries stabilised at levels of integration that

**Chart 25 MFI loans to MFIs: outstanding amounts by residency of the counterparty**

(share of total lending excluding the Eurosystem; percentages)



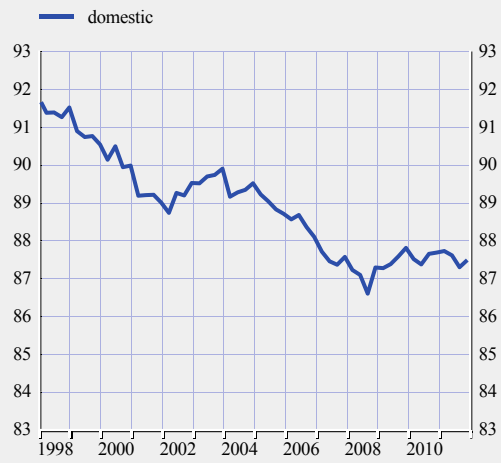
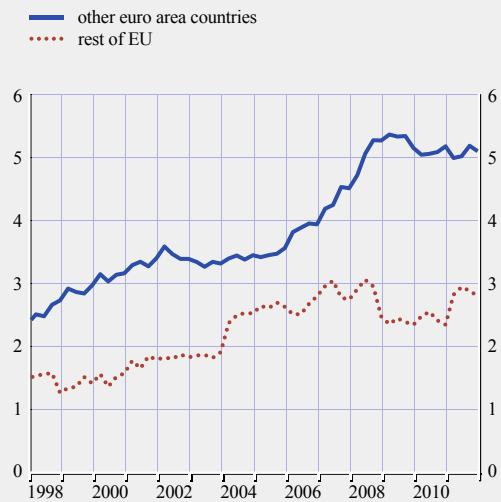
Source: ECB.

were higher than in the pre-euro era. Only in the second half of 2011 this share declined more notably. As in the two previous years, in 2011 the share of cross-border interbank lending in total interbank lending still demonstrated a high level of integration, with around 44% of all interbank loans being extended across borders. The share of domestic lending activity, which had declined from 61% in 1999 to 46% before the financial crisis, increased again during the period of financial crisis and since 2009 has remained between 52% and 56% with some upward trend observed in the second half of 2011.

On the other hand, Chart 26 shows that retail cross-border lending by euro area MFIs to non-bank borrowers in other euro area countries – after some temporary decline in the first quarter of 2011 – with 5.1% in the fourth quarter of 2011 remained at the same level as end of 2010, which is somewhat lower than the record level of 5.4% seen in the first quarter of 2009. Cross-border lending to borrowers in the rest of the EU, by contrast, overall increased significantly in 2011 to 2.8%.

**Chart 26 MFI loans to non-MFIs: outstanding amounts by residency of the counterparty**

(share of total lending excluding the Eurosystem; percentages)



Source: ECB.

## PRICE-BASED INDICATORS

The negative impact of the financial crisis on banking integration is quite clear in price-based indicators. Chart 27 reports the euro area cross-country dispersion of bank interest rates applied to new loans to non-financial corporations. For most instruments and maturities, this dispersion increased again with the re-intensification of the crisis in the course of 2011. More specifically, for short-term loans in the smaller-sized segment, the rise in price dispersion has steadily

**Chart 27 Cross-country standard deviation of MFI interest rates on new loans to non-financial corporations**

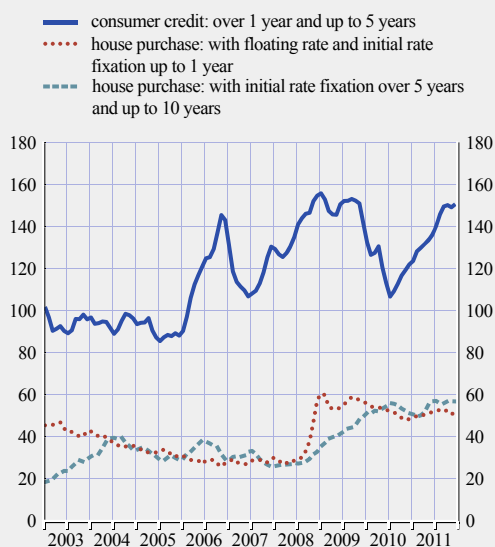
(unweighted; basis points)



Source: ECB.

**Chart 28 Cross-country standard deviation of MFI interest rates on new loans to households**

(unweighted; basis points)



Source: ECB.

increased throughout the crisis, suggesting particularly strong market fragmentation in the corporate retail market segment; its level of dispersion reached around three times its pre-crisis level. This contrasts with large short-term loans, for which since mid-2009 the level of dispersion has remained somewhat volatile within a broadly stable range and only increased more strongly in the second half of 2011.<sup>10</sup>

As regards the household retail segment, Chart 28 indicates a significant rebound in rate dispersion for consumer credit since mid-2010. By contrast, for highly collateralised retail housing loans, rate dispersion remained broadly at stable levels for short-term loans and rose somewhat for longer-term loans towards mid-2011, pointing to the influence of the concurrent increase in dispersion of sovereign bond yields. Under normal circumstances, differences in bank interest rates can to a large extent be attributed to institutional factors, such as the predominance of shorter or longer interest rate fixation periods, and to national differences in the structure of and degree of competition

in the banking industry. However, the increase in dispersion of most loan rates during the crisis can be attributed more to cross-country differences in bank financing conditions related to the specific circumstances of their respective sovereigns and their domestic economies, including credit risk.

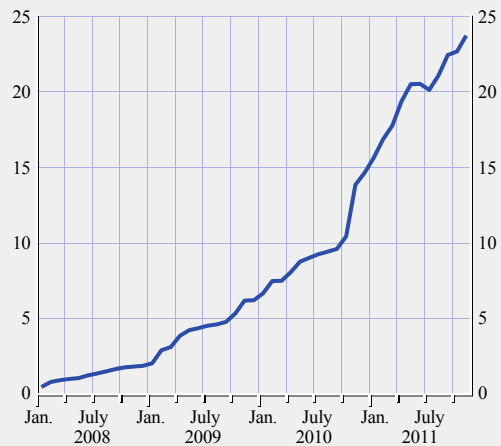
#### OTHER INDICATORS

The low level of retail banking integration is also associated with a relatively high – albeit slightly decreasing – level of fragmentation of retail payment infrastructures, where the level of harmonisation of procedures, instruments and services offered to customers is not yet satisfactory. This shortcoming is being addressed in the context of the SEPA project, under which payment systems and infrastructures are expected to establish a Europe-wide reach, thereby achieving a single euro payments area. However, integration is still low in terms of the

<sup>10</sup> For a more detailed discussion, see Special Feature B, in particular Table 1 and the related text.

**Chart 29 Credit transfer transactions processed in SEPA format in the euro area**

(percentage of total transactions)



Source: ECB.

concentration ratio of retail payment systems in the euro area; in 2010 the five largest payment systems in the euro area continued to process the bulk of the total market volume.

Measuring the progress of migration to SEPA, the euro area SEPA credit transfer (SCT) indicator shows that the use of the SCT rose steadily from 0.5% at the launch of SEPA on 28 January 2008 to 23.7% in December 2011. It is expected that migration will continue on this upward trend for the foreseeable future (Chart 29).

## CHAPTER II

### SPECIAL FEATURES

#### A THE BENEFITS OF THE EU'S SINGLE FINANCIAL MARKET REVISITED IN THE LIGHT OF THE CRISIS

*The creation of an internal market for goods and services, labour and capital is a long-standing central goal of the European Union. A functional internal market generates benefits through the free movement of persons, goods, capital and services, translating into lower prices, more choices for individuals and better business opportunities for firms.*

*This reasoning applies well to the market for financial services. Financial integration is primarily a market-driven process; hence the enactment of the Single Market in this area consisted mainly of the removal of cross-country barriers. However, economic policies are also needed to ensure that private financial activities reach smoothly across borders, allowing markets to function well across Europe. Since the 1950s many policy initiatives have been undertaken; at the start of the last decade, the introduction of the euro and the Financial Services Action Plan contributed further and decisively to financial integration.*

*The financial crisis laid bare a number of weaknesses in the institutional setup supporting the single financial market and brought the process of financial integration to a halt. Signs of retrenchment appeared in some important market segments. It is therefore important at this point in time to re-examine the benefits of the Single Market, together with any potential risks, and raise the awareness of Europe's citizens on them. This Special Feature looks back at the main focus and purpose of the Single Market Programme in the area of financial services, showing with quantitative evidence the progress achieved over time and highlighting the benefits that financial integration has brought to European citizens.*

#### I INTRODUCTION

The creation of a single market for capital and financial services has been a central goal of the European Community (and more recently the European Union) for the last quarter of a century. Its pursuit has involved many policy initiatives over the years. In the mid-1980s, the Single Market Programme (which included financial services) set the goals and kicked off the action, mainly in form of Community Directives. The impact of those regulatory changes was strengthened, at the end of the decade, by the removal of all residual cross-border capital controls. The launch of the euro at the end of the 1990s and, shortly afterwards, the Financial Services Action Plan were aimed at tackling the last remaining obstacles to financial integration, i.e. those stemming from currency and regulatory segmentation.

As documented in previous issues of this report, the impact of the single currency on financial integration in the euro area was dramatic by any standards. In some market segments, integration was immediate and complete; in others it was more gradual, but still significant and progressive. Then, starting in 2008 the process came to a halt and started to recede in important market segments as a result of the financial crisis. This was the first setback in the quest to achieve this central EU policy objective since the mid-1980s.

Against this background, this Special Feature takes another look at the goals and the successive steps of the EU's Single Market Programme, with a particular focus on the single financial market, over the years, also using quantitative measures of progress. This approach allows an evaluation of the gains achieved in some key market segments, chosen from among those closest to the interest of individuals and businesses, and an appreciation of the size and significance of the more recent reversal. The Special Feature concludes with a brief discussion of the challenges ahead and of the next goals and policy steps.





## 2 THE SINGLE MARKET PROGRAMME AND ITS AFTERMATH

From the outset, the aim of the Single Market Programme has been to achieve harmonious integration of the economies of the EU

Member States, thereby improving efficiency by broadening economic and financial opportunities for their citizens. To this end, the European legislative framework has been amended over several decades to allow and to foster integration (Box 1).

### Box 1

#### THE TREATY FOUNDATIONS FOR THE DEVELOPMENT OF A SINGLE MARKET FOR FINANCIAL SERVICES

After the end of World War II, a political consensus emerged that the best way to create the conditions for peaceful progress on a lasting basis in Europe, thereby preventing a recurrence of the destructive conflicts of the past, would be through a process of European integration – economic as well as social and political. The first efforts in this direction were aimed at establishing European supranational institutions, entrusted with certain sectoral responsibilities, such as the European Coal and Steel Community. Gradually, the scope of integration was broadened to cover other areas. This box describes the main steps in the process of European integration, with an emphasis on financial services.

#### THE TREATY ESTABLISHING THE EUROPEAN ECONOMIC COMMUNITY AND THE “COMMON MARKET”

Following the signing of the Treaty establishing the European Coal and Steel Community (Treaty of Paris) in 1951 and the Messina Conference in 1955, which set up an intergovernmental committee to examine economic integration and possible institutional support for it, the stage was set for creating a general common market. The Treaty establishing the European Economic Community (EEC Treaty),<sup>1</sup> which was signed in Rome in 1957, established in Community law the freedom to provide goods and services, labour and capital freely across Member States within the Community and expressly prohibited Member States from restricting the exercise of those freedoms. The EEC Treaty sought to create a “common market” based on the aim of increasing economic prosperity and to contribute to “an ever closer union among the peoples of Europe”.<sup>2</sup> The goal was to complete the transition to a common market in 12 years, by 1 January 1970. Although progress was achieved in some areas, including creating a customs union, abolishing quotas, and allowing the free movement of workers, progress still lagged behind in other areas.

#### THE SINGLE EUROPEAN ACT AND THE “SINGLE MARKET”

The lack of progress in completing the common market was the main driver behind the concept of the internal market (or Single Market), whereby trade barriers or internal frontiers would be removed within the Community. This was the objective of the programme set in train by the Commission under President Jacques Delors in 1985, which for the first time set out a programme and timetable for achieving the internal market based on the adoption of certain legislative measures by the end of 1992.<sup>3</sup>

1 Besides the EEC Treaty, the Treaty establishing the European Atomic Energy Community (Euratom) was also signed in Rome on the same day.

2 See the preamble to the EEC Treaty.

3 COM(85) 310.

To create a sound legal basis for the internal market programme, a significant amendment to the EEC Treaty was also made, the Single European Act. The Single European Act, which entered into effect on 1 July 1987, amended the EEC Treaty to ensure a more effective decision-making process for the adoption of Community legislation. For example, it resulted in the introduction of qualified majority voting, instead of unanimity, for many policy areas under the EEC Treaty.

#### THE TREATY ON EUROPEAN UNION (MAASTRICHT TREATY)

Economic and Monetary Union (EMU) was supported by the Delors Report which was presented to the European Council in June 1989 and formed the basis for the intergovernmental conference on EMU which began in December 1990 and concluded one year later at the Maastricht Summit.

The preparation for EMU was a key milestone in the integration process. EMU was already an objective of the Single European Act, and, during the European Council meeting in June 1988, the Member States confirmed their objective of a progressive realisation of EMU through a series of stages with a defined timeline for each stage.

The legal basis for EMU was finally established by the Treaty on European Union (EU Treaty), which was signed in Maastricht on 9 February 1992 and was finally ratified and entered into effect on 1 November 1993.

#### THE TREATY ON THE FUNCTIONING OF THE EUROPEAN UNION (LISBON TREATY)

On 13 December 2007 in Lisbon the EU Member States signed a new treaty, which entered into force on 1 December 2009 and amended the EU Treaty (TEU) and the EC Treaty, renaming the latter the Treaty on the Functioning of the European Union (TFEU).

The Treaty freedoms have been instrumental to the integration of financial services markets, in particular the freedom of establishment (Articles 49 to 55 TFEU), the freedom to provide services (Articles 56 to 62 TFEU) and the free movement of capital (Articles 63-66 TFEU). In addition, Article 114 TFEU (sometimes referred to as the “Single Market clause”) which provides the legal basis for the European Parliament and the Council to adopt measures for the approximation of the provisions laid down by law, regulation or administrative action in Member States which have as their object the establishment and functioning of the internal market, is often used for legislative initiatives relating to the Single Market for financial services.

Integration in markets for financial services is one aspect of this ongoing process in Europe. The importance of fostering financial integration lies partly in the fact that reducing financial barriers between Member States is expected to create productivity gains which will increase the efficiency and competitiveness of the EU’s economy. In addition, financial integration, by opening up new financial opportunities for individuals and businesses (especially small businesses), is, if properly regulated, a potentially powerful tool

to attain higher standards of freedom, equity and welfare for society as a whole. In an integrated market, producers and consumers can better tailor their risk and return profiles to their preferences or requirements, and unjustified rents and hidden exploitation opportunities for dominant players are more easily identified and removed. Financial integration promotes cross border contracts between financial institutions, which in turn helps institutions to learn from each other and in this way promotes general welfare.

The first decisive step in the direction of fostering financial integration was the European Commission's White Paper on the completion of the internal market of 14 June 1985,<sup>1</sup> which spelled out the programme and the timetable for the completion of the internal market.

The White Paper focused on the removal of physical, technical and fiscal barriers in various sectors, including, among others, the financial services sector. The simultaneous liberalisation of financial services and capital movements was to represent a major step towards Community financial integration and the widening of the internal market. It recommended the free circulation of financial products at a Community level, using a minimal coordination of rules (especially on such matters as authorisation, financial supervision and reorganisation, winding up, etc.) as the basis for mutual recognition by Member States of what each does to safeguard the interests of the public. Such harmonisation, particularly as regards the supervision of ongoing activities, should be guided by the principle of "home country control". In addition, the White Paper stressed that greater liberalisation of capital movements should serve three aims: first, as regards the access to efficient financial services, the effectiveness of the harmonisation of national provisions governing the activities of financial intermediaries would be greatly reduced if the corresponding capital movements were to remain subject to restrictions; second, monetary stability, in the sense of the general level of price and exchange rate relations, was an essential precondition for the proper operation and development of the internal market; third, the de-compartmentalisation of financial markets would boost the economic development of the Community by promoting the optimum allocation of European savings.

The initiative of the Commission was followed by the signing of the Single European Act and the Treaty of Maastricht (Box 1).

In accordance with the Single European Act, the European Commission launched several

legislative initiatives related to financial market integration. In 1990 the Directive on the freedom of movement of capital<sup>2</sup> came into force, requiring Member States to abolish any restrictions on capital movements, to coordinate monetary policies more closely and to adhere to the European Monetary System. The Second Banking Directive<sup>3</sup> of 1989 and the Investment Services Directive<sup>4</sup> of 1993 implemented the single passport for banks and investment firms regulated according to the principle of home country control. In the same year, the Capital Adequacy Directive<sup>5</sup> was adopted, harmonising banking sector regulation.

The Treaty of Maastricht enshrined in primary legislation both the aim of establishing a monetary union by 1998 and the free movement of capital. Not only were Member States obliged to abolish existing barriers to capital movements,

- 1 Completing the Internal Market: White Paper from the Commission to the European Council (COM(85) 310 final). A white paper is a document containing proposals for action by the European Union (formerly the European Community) in a specific area. A white paper sometimes follows a green paper released to launch a public consultation process.
- 2 Council Directive 88/361/EEC of 24 June 1988 for the implementation of Article 67 of the Treaty (OJ L 178, 8.7.1988, p. 5).
- 3 Second Council Directive 89/646/EEC of 15 December 1989 on the coordination of laws, regulations and administrative provisions relating to the taking up and pursuit of the business of credit institutions and amending Directive 77/780/EEC (OJ L 386, 30.12.1989, p. 1). This Directive, which amended Council Directive 77/780/EEC of 12 December 1977 on the coordination of laws, regulations and administrative provisions relating to the taking up and pursuit of the business of credit institutions (the First Banking Directive), was itself amended on numerous occasions and finally repealed by Directive 2000/12/EC of 26 May 2000 relating to the taking up and pursuit of the business of credit institutions (OJ L 26, 26.5.2000, p. 1), which was in turn abrogated by Directive 2006/48/EC of 14 June 2006 of the European Parliament and of the Council relating to the taking up and pursuit of the business of credit institutions (recast) (OJ L 177, 30.6.2006 p. 1) (the Capital Requirements Directive).
- 4 Council Directive 93/22/EEC of 10 May 1993 on investment services in the securities field (OJ L 141, 11.6.1993, p. 27). Owing to technological progress, the Investment Services Directive required several revisions and was finally repealed in 2004 by Directive 2004/39/EC of the European Parliament and of the Council of 21 April 2004 on markets in financial instruments (OJ L 145, 30.4.2004, p. 1) (the Market in Financial Instruments Directive, MiFID).
- 5 Council Directive 93/6/EEC of 15 March 1993 on the capital adequacy of investment firms and credit institutions (OJ L 141, 11.6.1993, p. 1) (NB. recast in 2006: Directive 2006/49/EC of the European Parliament and of the Council of 14 June 2006 on the capital adequacy of investment firms and credit institutions (recast)).

but there was also an unconditional prohibition on any future restrictions. The treaty also contained the convergence criteria necessary to qualify to join the third stage of EMU.<sup>6</sup>

1993 also marked fundamental changes in the Exchange Rate Mechanism (ERM). In the ERM, the currencies of participating Member States were pegged against each other around a grid of bilateral central parities, with margins of fluctuation of (plus or minus) 2.25% (with some countries using a wider band on a temporary basis). Although multilateral in its operational mechanics, de-facto the system had the Deutsche Mark as the dominant currency at its centre, owing to the strength of the German economy and the special status of the Deutsche Mark as a reserve currency. In 1992 inflationary pressure brought about by German reunification forced the Deutsche Bundesbank to maintain a restrictive monetary policy stance, generating tensions in the system at a time when most other European countries were in recession. Speculators probed the commitment of national governments to maintain their pegs, creating additional pressures. In September 1992, despite interventions in the currency markets by the national central banks (NCBs), the United Kingdom left the ERM, followed by Italy. The next year, the ERM fluctuation bands were broadened to 15%, allowing the possibility of larger exchange rate movements, but the dispersion of interest rates remained the same. European financial integration slowed down, but did not come to a halt. It is worth noting, in this respect, that the ERM crisis did not result in any reversal in the process of liberalisation of cross-border capital flows, completed only a few years earlier. Financial integration was allowed to progress further, albeit in a context of higher exchange rate variability.

In 1994 the European Monetary Institute, the predecessor of the ECB, was established in order to enhance the cooperation of NCBs and safeguard a smooth transition to monetary union. As a single monetary policy is facilitated by

homogenous markets, the European Monetary Institute pursued many policies beneficial to financial integration, including the adoption of common market standards. Moreover, from 1999 onwards, the development of TARGET payment system allowed market participants to effect large-value payments across the EU in real time and consequently facilitated the conduct of cross-border financial transactions in euro.

In order to meet the convergence criteria and to join the third stage of EMU, Member States implemented adjustment measures and reduced their fiscal deficits. Coupled with the free movement of capital, the joint efforts of policy-makers resulted in lower inflation rates and convergence in interest rates towards a lower level. Consequently, financial integration intensified in the run-up to the monetary union, in particular during the period from 1997 to 1999. In June 1998 the European Central Bank and the European System of Central Banks were set up, marking the transition to the third and final stage of EMU. At the end of that decade, eleven Member States entered the transition period to prepare for the introduction of the euro as a single currency and fixed their exchange rates irrevocably to the euro.

The elimination of exchange rate risk, the convergence of economic fundamentals and lower transaction costs, owing to the harmonisation of market standards and payment infrastructures, together fostered European financial integration remarkably well. As a result, despite the breakdown of the ERM, the 1990s were a period of remarkable progress in financial integration.

Nevertheless, national discretion was still an impediment to fully integrated financial

<sup>6</sup> The convergence criteria required governments to achieve (i) a high degree of price stability, (ii) sustainable public finances, (iii) currency stability and (iv) interest rate convergence. As the public finances criteria within the Maastricht Treaty were ambiguous, the final specification came along with the adoption of the Stability and Growth Pact in 1996.

markets. In particular, retail finance was largely dominated by local players and less integrated than wholesale markets. Financial services regulation remained in the domain of the Member States. Consequently, in order to complement the single currency with a single market the Commission launched the Financial Services Action Plan (FSAP) initiative in 1998.

## 2.1 ONE MARKET, ONE CURRENCY

The 1989 Delors Report<sup>7</sup>, and the Commission study “One market, one money<sup>8</sup>” set out the main benefits of a single currency. In particular, the Delors Report implied that a single currency would have a positive impact on a single market by improving microeconomic efficiency and macroeconomic stability. First, a single currency lowers transaction costs for consumers and companies, owing to, among other things, the lack of a need for currency conversion. The resources thereby freed up stimulate cross-border business investment and foster economic and financial integration. Second, a single currency eliminates exchange rate risk and internal exchange rate volatility. Empirical evidence shows that lower exchange rate volatility translates into higher capital flows and direct investment – essential factors in fostering the integration of markets. Moreover, a single currency also lowers external exchange rate volatility against currencies outside the monetary union and stimulates foreign direct investment. This helps to build up deeper, more integrated financial markets. Third, the enhanced market transparency enables consumers and producers to achieve welfare and efficiency gains. A reduction in information costs facilitates price comparison by investors and improves investment opportunities, thereby improving capital allocation within a single market. Fourth, price stability implied by an independent central bank within a monetary union supports the development of bond markets. In high inflation countries, bond investors tend to prefer short-term over long-term paper. By credibly committing to price stability under an independent central bank, these countries can develop their bond markets and attract investors from other countries.

However, the relationship between a single market and a single currency is not a one-way street. A single currency also benefits from a single market, as a single market encourages economic and financial integration. Therefore, a well-developed single market promotes the convergence process which is necessary for achieving a monetary union. In addition, within a monetary union, a well-developed single market offers investors opportunities to diversify their portfolios and provides the basis for multinational financial institutions. This way, companies are less reliant on domestic financial markets and funding. As a consequence, the risk and impact of asymmetric shocks are greatly reduced and the conduct of a common monetary policy is facilitated. Furthermore, under an independent central bank, the members of a monetary union forego the ability to conduct an autonomous monetary policy or to intervene in the exchange rate. Consequently, macroeconomic imbalances can only be addressed by internal price adjustments and a redirection of production factors. A fully integrated market enables a country to redirect these factors more quickly into more competitive sectors. The integrated market reduces adjustment costs and fosters macroeconomic and price stability as a prerequisite for financial integration. Last, but not least, a high degree of integration of money markets contributes to the single monetary policy by ensuring that differences in short-term interest rates across countries are limited to those reflecting differences in credit risk.

As a result, there are large synergies between a single market and a single currency. On one hand, a monetary union contributes to completing the single market and therefore reaping the full benefits of such a market. On the other hand, a well-developed single market contributes to the well-functioning of a monetary union

<sup>7</sup> *Report on economic and monetary union in the European Community* (the Delors Report), Committee for the Study of Economic and Monetary Union, Jacques Delors, Chairman, April 1989.

<sup>8</sup> *One market, one money: An evaluation of the potential benefits and costs of forming an economic and monetary union*, European Economy, No 44, European Commission, October 1990.

## 2.2 THE FINANCIAL SERVICES ACTION PLAN<sup>9</sup>

The introduction of the euro gave a boost to the process of financial integration in the European Union, enabling the full benefits of the single currency to be reaped.

In recognition of the changing financial landscape, the Cardiff European Council in June 1998 invited the European Commission “to table a framework for action ... to improve the Single Market in financial services”.<sup>10</sup>

In this context, in 1999 the Commission launched a key component for the creation of the Single Market for financial services, the Financial Services Action Plan (FSAP)<sup>11</sup>. The FSAP contained 42 key legislative initiatives proposed by the Commission to update existing EU rules in the light of market developments and to extend the level of EU regulatory harmonisation in line with the single market objective.

The FSAP contains a framework of legislative and other measures geared towards achieving the following three strategic objectives: (i) a single market for wholesale financial services, (ii) open and secure retail markets, and (iii) state-of-the-art prudential rules and supervision.

As regards specifically the first objective, the Action Plan identified the following main targets: raising capital on an EU-wide basis, establishing a common legal framework for integrated securities and derivatives markets, moving towards a single set of financial statements for listed companies, containing systemic risk in securities settlements, moving towards a secure and transparent environment for cross-border restructuring, and delivering a single market which works for investors. The FSAP’s legislative agenda included, inter alia, the revision of the Investment Services Directive<sup>12</sup>, the planned adoption of new directives on the cross-border use of collateral and on market manipulation, a Green Paper<sup>13</sup> on electronic commerce and financial services, and

initiatives aimed at facilitating the adoption of long-awaited legislative proposals, such as the Takeover Bids Directive and the European Company Statute. A tight deadline was set and the measures were prioritised, ranging from those measures that were crucial to the realisation of the full benefits of the euro and to ensuring the competitiveness of the financial services sector, to those measures that were deemed important to finalising coherent policy by the end of the euro area transitional period.<sup>14</sup> The majority of the measures envisaged in the FSAP were adopted by 2004.<sup>15</sup> And within a few years some tangible effects on integration could already be observed.<sup>16</sup>

An important element in completing the ambitious legislative agenda envisaged by the FSAP was the Lamfalussy process. The aim of this process was to establish a framework that could improve the legislative process, creating a dynamic and efficient financial services market. Regulation had to be adopted faster, be sufficiently flexible to respond to market developments, and thereby ensure the EU’s competitiveness. The Lamfalussy process is discussed in more detail in Special Feature D.

9 For a broader overview of post-euro, pre-crisis policy initiatives fostering European financial integration, see Hartmann, P., Maddaloni, A. and Manganelli, S. (2003), “The euro-area financial system: Structure, integration and policy initiatives”, *Oxford Review of Economic Policy*, 19(1), pp. 180-213.

10 See the Presidency Conclusions from the Cardiff European Council of 15 and 16 June 1998.

11 *Communication from the Commission – Implementing the framework for financial markets: action plan* (COM(1999) 232).

12 Council Directive 93/22/EEC of 10 May 1993 on investment services in the securities field (OJ L 141, 11.6.1993, p. 27).

13 A green paper is a discussion document intended to stimulate debate and launch a process of consultation, at European level, on a particular topic. It may be followed by a white paper, an official set of proposals that is used as a vehicle for their development into law.

14 *Ibid*, page 21.

15 *Financial Services: Turning the Corner: Preparing the challenge of the next phase of European capital market integration*, Tenth Report, Brussels, 2 June 2004, available on the European Commission website (<http://ec.europa.eu>).

16 See Kalemlı-Ozcan, S., Papaıoannou, E. and Peydro, J.L. (2010), “What lies beneath the euro’s effect on financial integration? Currency risk, legal harmonization, or trade?”, *Journal of International Economics*, Vol. 81, pp. 75-88, which finds that the large number of legal, regulatory and supervisory reforms have led to a significant increase in cross-border banking in the EU.

On 1 May 2004 the EU was significantly enlarged with the accession of ten central and eastern European and Mediterranean countries as new Member States. Prior to their accession, the economic structures of the acceding countries had become more similar to those of the existing Member States, the degree of openness was high and both trade and financial integration with the EU was well developed in most cases. The relatively high level of financial integration with the rest of the EU may be explained by the fact that these countries had had to adapt their legislation to the EU's "financial acquis"<sup>17</sup> and, in case of the new Member States from eastern Europe, had undergone a long transition process prior to accession.<sup>18</sup> It was also noted that progress has also been made with regard to financial stability. However, there were also significant differences among the acceding countries in terms of a range of nominal, real and structural conditions and, in particular, labour market features, interest rate convergence, external positions and fiscal performance. The degree of integration also differed considerably from country to country.<sup>19</sup>

Building on the achievements of the FSAP, in December 2005 the Commission adopted a White Paper on EU financial services policy for the years 2005-2010.<sup>20</sup> Dynamic consolidation was the *leitmotiv* of the White Paper which was aimed at removing the remaining economically significant barriers to financial services, implementing and enforcing existing legislation and enhancing supervisory cooperation and convergence in the EU.

### 2.3 DEFINITION OF FINANCIAL INTEGRATION AND THE ROLE OF THE EUROSISTEM

The Eurosystem monitors financial integration, as a well-integrated financial system not only increases the economic efficiency of the euro area but also contributes to a smooth and effective implementation of monetary policy throughout the area.<sup>21</sup> Moreover, deeper financial integration may have an impact on the stability of the whole financial system.

As early as in 1999, the Eurosystem started reflecting and focusing on financial integration in the context of its role in supporting the general policies of the European Union without prejudice to its primary objective of price stability.<sup>22</sup> The ECB held its second Central Banking Conference in 2002 on the topic of "The transformation of the European Financial System", featuring many papers and discussions on financial integration.<sup>23</sup> Between 2002 and 2011 it ran, in cooperation with the Center for Financial Studies at the University of Frankfurt, a large research network on "Capital Markets and Financial Integration in Europe", covering a wide range of integration issues.<sup>24</sup>

In order to ensure a common understanding of what financial integration entails, the ECB has outlined a definition of when a financial market may be considered to be integrated: the market for a given set of financial instruments and/or services is fully integrated if all potential market participants with the same relevant characteristics:

- (i) face a single set of rules when they decide to deal with those financial instruments and/or services;
- (ii) have equal access to the above-mentioned set of financial instruments and/or services; and

17 The *acquis communautaire* is the established body of EU law.  
 18 On the financial integration of new EU Member States with earlier members and among themselves, see, for example, Capiello, L., Gerard, B., Kadareja, A. and Manganelli, S. (2006), "Financial integration of new EU Member States", *Working Paper Series*, No 683, October.  
 19 See the article entitled "The acceding countries' economies on the threshold of the European union" in the February 2004 issue of the ECB's Monthly bulletin.  
 20 Commission White Paper, Financial Services Policy 2005-2010, available on the European Commission website (<http://ec.europa.eu>)  
 21 The indicators of financial integration in the euro area are available on the ECB's website.  
 22 See Article 127(5) TFEU.  
 23 See Gaspar, V., Hartmann, P. and Sleijpen, O. (eds.) (2003), *The Transformation of the European Financial System*, ECB, Frankfurt.  
 24 See the network website (<http://www.eu-financial-system.org>) for further information, including research priorities, conferences, people involved, fellowships and publications.

(iii) are treated equally when they are active in the market.<sup>25</sup>

It has also developed a framework of indicators and models to measure and assess progress in financial integration (and the development of capital markets)<sup>26</sup> which has been further developed and extended in successive issues of this report.

These reflections have also led to the inclusion of financial integration in the Eurosystem mission statement: “Acting also as a leading financial authority, we aim to safeguard financial stability and promote European financial integration”.<sup>27</sup>

The Eurosystem contributes to enhancing financial integration through four types of activity. These Eurosystem activities are described in more detail in Chapter 3.

### 3 THE BENEFITS AND COSTS OF FINANCIAL INTEGRATION<sup>28</sup>

Financial systems serve several functions. They allow funds to be channelled from those economic agents with a surplus of savings to those with a shortage and they allow risk to be traded, hedged, diversified and pooled.<sup>29</sup> Financial integration facilitates these functions. In particular, in industrial countries with sound macroeconomic policies, good economic institutions, advanced financial development, openness and good human capital, financial integration leads to better risk sharing and diversification. This, in turn, allows households and firms to reap the benefits by smoothing consumption over time and specialising in production, thereby increasing the potential for stronger non-inflationary economic growth.<sup>30</sup> Financial integration allows economic agents to invest more easily in other regions of the EU, thereby diversifying the risk that potential local shocks will impact on income and consumption.<sup>31</sup> In addition, financial integration renders markets deeper and more liquid, which in turn creates economies of scale and increases the supply of

funds for investment opportunities. Also, financial integration fosters competition, the expansion of markets and intermediation, thereby leading to further financial development. This reduces intermediation costs and facilitates

25 Baele, L., Ferrando, A., Hördahl, P., Krylova, E. and Monner, C. (2004), “Measuring Financial Integration in the Euro Area”, *Occasional Paper Series*, No 14, ECB, April.

26 Baele et al. (2004), op. cit., and Hartmann, P., Heider, F., Papiannou, E. and Lo Duca, M. (2007), “The role of financial markets and innovation for productivity and growth in Europe”, *Occasional Paper Series*, No 72, ECB, September.

27 The mission statement of the Eurosystem is available on the ECB’s website (<http://www.ecb.europa.eu>).

28 For more detailed overviews, survey papers and collections of articles, see, for example, Agénor, P.-R. (2003), “Benefits and costs of international financial integration”, *The World Economy*, Vol. 26, No 8, pp. 1089-1118, Stavarek, D., Repkova, I. and Gajdosova, K. (2011), “Theory of financial integration and achievements in the European Union”, in Matousek, R. and Stavarek, D. (eds.), *Financial Integration in the European Union*, Routledge. Some of this literature is, however, more oriented towards small open emerging market economies and therefore not in all respects applicable to the main countries of the euro area.

29 On the roles of financial systems, see, for example, Levine, R. (1997), “Financial development and growth: Views and agenda”, *Journal of Economic Literature*, Vol. 35, No 2, pp. 688-726, and Hartmann, P. et al. (2007), op. cit.

30 An overview focusing on the benefits of financial integration is for example Kalemlı-Ozcan, S., and B. Sorensen (2008), Financial integration and economic welfare, in Freixas, X., P. Hartmann and C. Mayer (eds.), *Handbook of European Financial Markets and Institutions*, Oxford University Press, 195-214. The conditions under which such benefits can be reaped are discussed for example in the surveys by Henry, P.B. (2007), Capital account liberalization: Theory, evidence, and speculation, The Brookings Institution Global Economy Development Working Paper, no. 4, January, and Kose, A., E. Prasad, K. Rogoff and S.J. Wei (2009), Financial globalization: A reappraisal, IMF Staff Papers, 56, 8-62. Theory and evidence on financial integration allowing to benefit from the advantages of greater specialisation in production are provided in Fecht, F., Grüner H.P., and Hartmann, P. (2012), “Financial integration, specialization and systemic risk”, Working Paper Series, No 1425, ECB, February, forthcoming *Journal of International Economics*, and Kalemlı-Ozcan, S., B. Sorensen and O. Yosha (2003), Risk sharing and industrial specialization: Regional and international evidence, *American Economic Review*, 93, 903-918, respectively. In line with the risk-sharing argument, Kalemlı-Ozcan, S., S. Manganelli, E. Papaioannou and J.L. Peydro (2008), Financial integration, macroeconomic volatility and risk sharing, in Mackowiak, B., et al. (eds.), *The Euro at Ten: Lessons and Challenges*, European Central Bank, 116-155, find that EU countries that increase external assets in other EU countries experience consumption to be less sensitive to GDP shocks.

31 Kalemlı-Ozcan, S., Manganelli, S., Papaioannou, E. and Peydro, J.L. (2008), “Financial integration, macroeconomic volatility and risk sharing”, in Mackowiak, B. et al. (eds.), *The Euro at Ten: Lessons and Challenges*, ECB, pp. 116-155, for example, finds that in EU countries that increase external assets in other EU countries experience consumption is less sensitive to GDP shocks.



a more efficient allocation of capital, higher productivity and, ultimately, stronger and more sustainable non-inflationary economic growth.<sup>32</sup>

Moreover, as discussed in detail in the 2010 Financial Integration Report (in Special Feature D on “Stability implications of financial market integration and development), financial integration may entail certain risks if financial markets are not supported by a sound regulatory and supervisory framework. In particular, financial integration affects financial stability through a variety of channels. It improves market efficiency, diversification, and risk-sharing, which tend to have stabilising effects, but at the same time it may increase instability through the proliferation of less transparent financial products, and twist incentive structures towards encouraging excessive risk-creation and risk-taking, and possibly exacerbate contagion under stress. While the progress towards more advanced and integrated financial markets cannot be and should not be seen to be contrary to the objective of financial stability, a stronger prudential framework, including both effective regulation and supervision, is essential in order to limit the ensuing potential risks for financial stability.<sup>33</sup>

A financial system that is not yet fully integrated in all of its components does not provide the above benefits and therefore implies a cost in terms of foregone economic growth. However, an economic and monetary union and a single market aimed at stability-oriented macroeconomic policies, the establishment of sound economic institutions at the level of the Single Market, the enhancement of the prudential framework and the elimination of remaining barriers to integration, would create the conditions to reap the benefits of full financial integration. Over the years, various studies have attempted to quantify the actual benefits of financial integration. The main conclusions of these reports can be found in Box 2.

32 Bonfiglioli, A. (2008), “Financial integration, productivity and capital accumulation”, *Journal of International Economics*, Vol. 76, pp. 337-355, finds a positive effect of financial integration on productivity, but no effect on capital accumulation for a sample of 70 countries. Van Wincoop, E. (2004), “Welfare gains from international risk sharing”, *Journal of Monetary Economics*, Vol. 34, pp. 175-200, and Kalemli-Ozcan, S., Sorensen, B. and Yosha, O. (2001), “Regional integration, industrial specialization and the asymmetry of shocks across regions”, *Journal of International Economics*, Vol. 55, pp. 107- 137, estimate significant unexploited welfare gains from risk sharing in terms of consumption smoothing for OECD countries, the United States and the European Union.

33 *Financial Integration in Europe*, ECB, April 2010, available on the ECB’s website (<http://www.ecb.europa.eu>).

## Box 2

### QUANTIFYING THE IMPACT OF THE EU’S SINGLE FINANCIAL MARKET

Evaluating the impact of financial market integration on growth and living standards in the EU is difficult, owing to significant data, statistical and model uncertainty. Only few studies have attempted to quantify the impact of the EU’s single financial market. However, most existing analyses suggest that financial market integration has had a positive impact on economic performance in the EU. Three of the most influential studies are looked at here in turn.

The **Cecchini Report** (1988)<sup>1</sup>, an expert report that examines the costs and benefits of creating a single market in the EU, predicted four major benefits from creating a single financial market: (i) a reduction in the costs of financial intermediation, (ii) a more efficient allocation of capital, (iii) better access to markets, instruments and services, leading to an increase in portfolio diversification, and (iv) a general increase in efficiency. Cecchini’s main conclusion is that an increase in competition in financial markets would lead to a significant reduction in the prices of

1 Cecchini, P., Catinat, M. and Jacquemin, A. (1988), *The European challenge 1992, the benefits of a single market*, Wildwood House.

financial services across EU Member States (by 10%). This reduction would in turn increase the value added in financial services by 0.7% of GDP. Although the Cecchini Report attracted much attention at the time, it has been heavily criticised on methodological grounds.

A study by **London Economics** (2002)<sup>2</sup> estimates the potential impact of the elimination of the remaining obstacles to full financial market integration in the EU. The focus of the study is on changes in the structure of European financial markets: by increasing the liquidity and depth of European equity and bond markets, financial integration should lead to a significant reduction in the costs of equity, bond and bank finance and to an increase in the share of bond finance in total debt finance. The authors use macroeconomic simulations to show that, taken together, these reductions in the user cost of capital may yield substantial gains, including (i) an increase in EU real GDP of 1.1% in the long run, (ii) a 6% increase in business investment, (iii) an 0.8% increase in private consumption, and (iv) a rise of 0.5% in total employment.

Another study by **CEPR researchers** (2002)<sup>3</sup> focuses on the impact of financial development on corporate growth in the EU's manufacturing sector. The authors note that financial integration can be expected to have a positive impact on financial development through (i) increased competition and (ii) improvements in national regulations which are brought into line with prevailing best-practice. Financial development in turn increases growth, mainly via a reduction in the costs of financial intermediation and an improvement in the allocation of capital. Empirically, this is demonstrated by an econometric analysis with sector and firm-level data which estimates the impact of an increase in financial development, owing to financial integration, on output growth. One main conclusion is that value-added growth in the EU manufacturing sector would increase by between 0.75 and 0.94 percentage points if firms in the EU had the same access to finance as US firms.

Overall, the above studies support the idea that promoting financial market integration is an important step in fostering economic growth in Europe. Although such studies can only be indicative of the potential benefits of financial integration, they do point to the conclusion that financial integration is a policy objective worth pursuing further at the European level.

2 London Economics (2002), *Quantification of the Macro-Economic Impact of Integration of EU Financial Markets* – Final Report to the European Commission – Directorate-General for the Internal Market, available on the Commission's website (<http://ec.europa.eu>).

3 Gianetti, M., Guiso, L., Jappelli, T., Padula, M. and Pagano, M. (2002), "Financial Market Integration, Corporate Financing and Economic Growth", *European Economy, Economic Papers*, No 179, European Commission, available on the Commission's website (<http://ec.europa.eu>).

Apart from the expected benefits in terms of efficiency and growth described above, the issue remains of how financial integration relates to financial stability.<sup>34</sup> Several forces are at play. On one hand, financial integration may improve stability, because larger and deeper markets can be more resilient to shocks, the wider access to financial instruments allows a better dispersion of risks, and increased competition from abroad can contribute to better pricing and more robust financial institutions in the long term. On the other hand, integration is likely to lead to increased cross-border contagion risks, because

asymmetric information and herd behaviour may lead to excessive lending and sudden withdrawals of foreign funds and the greater competition could provide short-term incentives for risk-taking, in particular by less responsible financial intermediaries.

34 The ECB-CFS research network referred to above held a conference dedicated to this issue and featuring many research papers and speeches at the Bank of Spain in 2006 (<http://www.eu-financial-system.org/index.php?id=81>). For a broad overview of theoretical arguments and empirical evidence, see Chapter 6 of the ninth Geneva Report on the World Economy (Ferguson, R., Hartmann, P., Panetta, F. and Portes, R. (2007), "International financial stability", Geneva Reports on the World Economy, No 9, November).

The available evidence provides only partial answers to the question of whether integrated financial systems are, on balance, more stable. Most quantitative studies suggest that there is either no systematic relationship between integration and stability or that, all else being equal, countries which are more open financially are more stable.<sup>35</sup> At the same time, however, anecdotal evidence and practical experience have identified a series of emerging market and developing country cases in which short-term capital inflows have contributed to financial instability and crises. Moreover, in the ongoing crisis, financial contagion effects across highly integrated industrial countries have played a role, both inside and outside of Europe, alongside the unravelling of widespread imbalances.<sup>36</sup> Increased contagion risk in times of stress can be seen as the flipside of efficient risk sharing in normal times.<sup>37</sup> But if financial regulation and supervision are of the same high quality at the area-wide level as at the level of individual countries, then this should not be interpreted as reason to constrain integration on stability grounds.

All in all, in a regional collaboration like the EU or the euro area, the potential benefits of integration are likely to outweigh the costs. Monetary stability is well established, economic institutions function comparatively well, financial development and openness are advanced and human capital is of high quality. But to achieve the gains, a number of conditions must be fulfilled. Fiscal and macroeconomic conditions are of paramount importance, as is the regulatory and supervisory framework of the financial sector. These aspects, in particular the ongoing reform process in these areas and its effects on financial integration, and the challenges that lie ahead are addressed in detail in Special Feature D, which deals with European governance and regulatory reforms.

#### 4 SOME EVIDENCE OF THE BENEFITS OF EURO AREA FINANCIAL AND MONETARY INTEGRATION

As described in section 2, the integration of the European market for financial services has

been a gradual process stretching over the last few decades. Several legislative initiatives and institutional and economic decisions have been important milestones in this process.

At the same time, the monetary and financial union had an overwhelming effect on financial integration. The purpose of this section is to illustrate that the overall result of all these initiatives has, however, been a significant degree of integration in the European market for financial services.

The section provides some quantitative evidence of the degree of convergence in a number of indicators, measuring the cost for EU individuals and firms to acquire a selected number of commonly used financial services.<sup>38</sup> To that end, we review the evolution of several key interest rates charged both to corporations and households on euro-denominated (and legacy currency) loans and deposits for which comparable data are available across most countries. Although these indicators constitute a limited part of the overall market for financial services, they represent the financing costs for key decisions of economic agents and therefore

35 See, for example, Ferguson, R. et al. (2007), op. cit. Bonfiglioli, A. (2008), op. cit. estimates a slightly increased risk of banking crises with financial integration, but the overall effect on productivity remains nevertheless positive.

36 See, for example, the 2010 issue of this Report. Constâncio, V. (2011), "Contagion and the European debt crisis", keynote lecture at the Bocconi University/Intesa Sanpaolo conference on "Bank Competitiveness in the Post-crisis World", Milan, 10 October, and González-Páramo, J.M. (2011), "Sovereign contagion in Europe", speech at the Distinguished Speaker Seminar of the European Economics and Financial Centre, London, 25 November, have described contagion effects in the European sovereign debt crisis, reviewing, inter alia, a series of emerging research papers in this area.

37 Fecht, F., Grüner, H.P., and Hartmann, P. (2012), "Financial integration, specialization and systemic risk", Working Paper Series, No 1425, ECB, February, forthcoming *Journal of International Economics*.

38 Other empirical studies include, for example, Bris, A., Koskinen, Y. and Nilsson, M. (2009) "The euro and corporate valuations", *The Review of Financial Studies*, Vol. 22, No 8, pp. 3171-3209, which finds that the introduction of the euro has had positive effects on corporate valuations, and Bris, A., Koskinen, Y. and Nilsson, M. (2006), "The Real Effects of the Euro: Evidence from Corporate Investments", *Review of Finance*, Vol. 10, pp. 1-37, which shows that the introduction of the euro has increased investments for firms. Both papers find that the effects are strongest for countries that previously had weak currencies. This suggests positive effects from financial integration.

can be indicative of the overall benefits obtained from the progressive integration of the market for financial services.

The specific interest rate measures considered are the following. First, interest rates on deposits are analysed. This includes both new deposits with agreed maturity from households<sup>39</sup> and similar new deposits from non-financial corporations resident in the euro area.

Second, as regards interest rates on loans, our statistics refer to new loans denominated in euro and renegotiations of existing loans denominated in euro granted to euro area residents. This excludes revolving loans, overdrafts and credit card debt. In our analysis we use interest rates on new loans to non-financial corporations and households (distinguishing in the latter case between loans for house purchase and loans for general consumption).<sup>40</sup>

The last two decades have witnessed a substantial decline in nominal interest rates and financing costs, including in real terms, for European households and firms. It should be stressed that, in addition to the policy initiatives in favour of financial integration discussed above, other factors contributed to the decline, including, in particular, a more stable and benign economic and financial environment (at least until 2007), progressive exchange rate stability in the years leading up to the introduction of the single currency and, not least, a price-stability-oriented monetary policy which created the conditions for low and stable inflation. The evolution of financing costs (both their downward trend and their convergence across countries) shows comprehensively the combined effect of all the factors which accompanied and, at the same time, fostered financial integration.

Table 1 summarises the historical evolution of selected interest rates in the first 12 countries to join the euro area. It distinguishes between rates on bank deposits (of households and corporations) and on loans (to corporations and households – in the latter case divided into loans for house purchase and loans for general

consumption).<sup>41</sup> By 2011 the interest rates applied by credit institutions to euro-denominated loans and deposits to/from households and non-financial corporations resident in the euro area had declined by about 70% on average in the euro area as a whole compared with their levels in 1990. Furthermore, the decline is quantitatively important across the five specific categories considered, from about 50% for loans to households for personal consumption to about 90% for deposits of non-financial corporations. This illustrates that lower financial costs have been achieved in a wide range of market segments.

Moreover, the declines are not only obvious across loans and deposits and the euro area as a whole, but also across individual countries. Households and corporations from *all* euro area countries have benefited to substantial, but varying, degree from significantly lower financing costs.

The fact that the lower financing costs are shared across countries and market segments in the retail banking sector supports the argument that the impact of deeper financial integration has been widespread and has reached all economic agents. To better illustrate these benefits, Charts 30 and 31 provide a long historical series of the rates charged to households on new loans for house purchase (mortgages) and to corporations on new loans.

House purchases are one of the key acquisitions by households. Lower financing costs for such purchases therefore offer substantial benefits. Chart 30 shows that residential mortgage rates

39 This comprises new and renegotiated non-transferable deposits denominated in euro (or legacy currencies) from households resident in the euro area, which cannot be withdrawn before the end of a fixed term or can only be withdrawn earlier subject to a penalty. Overnight deposits and deposits redeemable at notice are excluded.

40 For further details on the MFI interest rates (MIR) data set (published MIR statistics from the year 2003) see the ECB's website (<http://www.ecb.europa.eu>). Data prior 2003 are based on unpublished, non-harmonised estimates.

41 The table uses indices to allow for a better comparison across countries. All the base year (1990) values are normalised to 100, so the values shown can be interpreted as percentages of 1990 levels.

**Table I Indices for interest rates on key loan and deposit categories in the euro area**

(Indices; 1990=100)

	Year	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT	Euro area
Deposits with agreed maturity from households (HHs) (1)	1995	52		66		40	64	81	53	78	70	63	59	70
	2000	37		58		30	44	32	37	28	55	53	21	42
	2005	24		24		26	21	12	18	14	29		13	21
	2010	15		16		21	18	20	16	11	8		13	23
	2011	23		20		26	23	27	25	34	16		26	30
Deposits with agreed maturity from non-financial corporations (NFCs) (2)	1995	52		63		40	64	81	53		70	60	61	65
	2000	35		60		31	44	31	37		55	51	26	53
	2005	23		23		25	22		19		28		15	24
	2010	10		7		6	10		12		8	8	11	12
	2011	19		12		10	17		21		12	11	21	18
Interest rates on new loans to NFCs (3)	1995	58	60	67	68	53	65	83	59	100	72	66	60	100
	2000	59	54	61	42	38	42	42	45	48	60	56	25	70
	2005	30	32	35	23	24	29		35	31	34	29	21	42
	2010	20	20	27	19	15	23	16	26	21		21	20	32
	2011	28	26	31	27	23	30	26	35			28	29	28
Interest rates on new loans to HHs for house purchase (4)	1995	73	87	87	68	64	74	84	63		74	78	63	76
	2000	56	74	65	35	45	49	40	43		50	67	32	56
	2005	34	43	39	20	22	30	20	28		36	41	17	32
	2010	26	40	34	15	15	30	18	26		22	50	12	30
	2011	29	43	32	22	19	33	20	26		25	50	21	33
Interest rates on new loans to HHs for consumption (5)	1995	76	79	77	80	64	78	86	65		72	84	73	78
	2000	56	69	75	45	47	59	49	58		52	75	42	66
	2005	41	61	59	36	26	46	29	46		41		36	54
	2010	40	55	52	39	21	46	30	46		35	29	36	51
	2011	41	48	49	41	25	48	29	42		34	31	42	49

Sources: ECB and national sources.

Notes: Indices have been used to allow for a better comparison across countries. All values for the base year (1990) are normalised to 100, so the values shown indicate percentages of the corresponding 1990 levels. The indices have been calculated on the basis of the MFI interest rates (MIR) data set (published MIR statistics as from 2003 are available under <http://www.ecb.europa.eu/stats/money/interest/interest/html/index.en.html>). Data prior 2003 are based on unpublished, non-harmonised estimates. The definitions of the interest rate measures in the table are as follows: (1) non-transferable new and renegotiated deposits denominated in euro from households resident in the euro area which cannot be withdrawn before the end of a fixed term or can only be withdrawn earlier subject to a penalty, excluding overnight deposits and deposits redeemable at notice; (2) non-transferable new and renegotiated deposits denominated in euro from non-financial corporations resident in the euro area, which cannot be withdrawn before the end of a fixed term or can only be withdrawn earlier subject to a penalty, excluding overnight deposits and deposits redeemable at notice; (3) new and renegotiated loans denominated in granted to non-financial corporations resident in the euro area, excluding revolving loans, overdrafts and credit card debt; (4) new and renegotiated loans denominated in euro granted to households resident in the euro area for house purchase, including loans for house purchase secured against residential property, personal loans for house purchase, and loans for house purchase secured against other assets, and excluding revolving loans, overdrafts and credit card debt; and (5) new and renegotiated loans denominated in euro granted to households resident in the euro area for consumption, including loans mainly for the purpose of personal use in the consumption of goods and services, and excluding revolving loans, overdrafts and credit card debt.

have declined in a gradual but persistent way over the last decades to around 5% by the end of the 1990s and below 5% for most of the time since the introduction of the common currency.

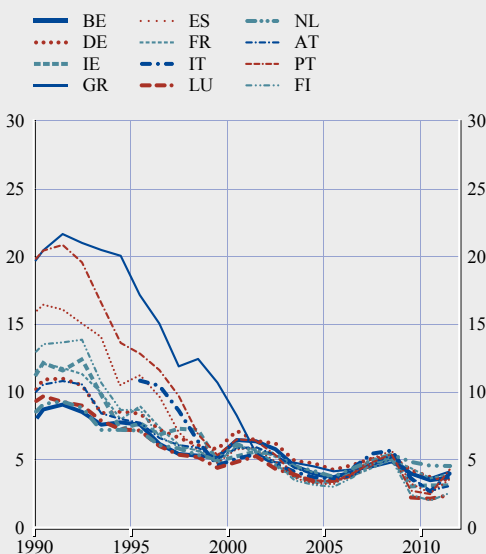
European non-financial corporations have also experienced much lower financing costs, with declines similar in magnitude to those for residential mortgages (Chart 31). Although difficult to quantify, positive effects of lower financing costs for European corporations may have contributed to higher investment,

employment and growth, thereby further benefiting all European economic agents.

An important dimension of the gains from the deepening of the Single Market for financial services is that the lower financing costs described above have also reached a significant level of convergence across countries. The strong convergence across countries in the rates charged to households for residential mortgages and to corporations for new loans is clearly visible in Charts 30 and 31.

**Chart 30 Interest rates on new loans to households for house purchase in euro area countries**

(percentages per annum)

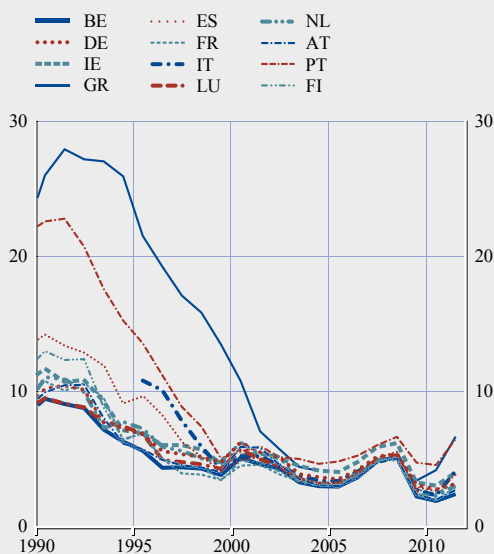


Sources: ECB and national sources.

Notes: A precise definition of this loan category can be found in the notes to Table 1. Data prior 2003 are based on non-harmonised estimates.

**Chart 31 Interest rates on new loans to euro area non-financial corporations**

(percentages per annum)



Sources: ECB and national sources.

Notes: A precise definition of this loan category can be found in the notes to Table 1. Data prior 2003 are based on non-harmonised estimates.

The first signs of convergence of interest rates across future euro area countries appeared in the 1980s in many of the core countries. In the second half of the decade, after the issuance of the European Commission's White Paper on the completion of the internal market, the effect deepened and also became visible in more peripheral countries.

The ERM crisis in the early 1990s, however, saw a renewed rise in interest rates in most countries, while the convergence of rates across countries slowed down. This period provided an early illustration of the potential adverse effects of a financial and economic crisis on financial integration.

As a result, the indices for interest rate dispersion did not improve much during the first few years of the decade. Still, this setback proved to be only temporary. A big leap in the convergence of interest rates across countries was achieved after 1992, when the ERM crisis was overcome and steps were taken to lay the foundations for

further financial integration. In particular, the ratification and implementation of the Maastricht Treaty took place in 1992, which accelerated progress towards Stage Three of EMU, creating a favourable climate of expectations that lasted for many years and supported the process of financial integration further. In addition, the Second Banking Directive was adopted in 1993, implementing the single passport for banks. By 1995 interest rates both on deposits and loans in ten future euro area countries differed from each other by less than 2 percentage points, i.e. less than one-fifth of the difference that had been observed a decade before.

Finally, convergence of interest rates further intensified with the introduction of the euro in 1999 (or the relevant year in the case of countries that adopted the euro at a later stage), for both deposit and loan rates.

More specifically, in 1990 the dispersion in interest rates on deposits and loans in the euro area, as measured by the standard deviation

of rates across countries, ranged between 1.7 percentage points (for bank deposits) and 2.6 percentage points (for loans for general consumption); see Table 2. In 2000 the dispersion of rates charged for these loan categories across euro area countries was much lower, at 0.6 and 1.0 percentage points respectively. By 2011 the financial crisis had increased the dispersion to slightly above the 2000 levels, but convergence remained strong compared to previous decades.

The possible negative effects of the financial crisis experienced in recent years should, however, be taken into account. Indeed, a slight, but nonetheless significant, widening of the dispersions compared to 2005 is observable in the data.

To better gauge the effects of the financial and sovereign debt crises on key retail banking

rates, Charts 32 and 33 depict the evolution of rates on mortgages and loans to corporations in the period 2005 to 2011. A wider dispersion of financing rates for mortgages across countries since late 2008 is clearly visible in Chart 32.

A similar pattern can be seen in the interest rates on loans to non-financial corporations (Chart 33), which started to diverge after a sharp fall in rates in 2008.

Overall, an overview of interest rates for some categories by banks in the euro area suggests that progressive integration in the market for financial services over the last three decades has led to significantly lower financing costs for both households and corporations. Moreover, lower costs have been enjoyed by all countries in the euro area, and a significant convergence across countries has also been achieved. Although it is too early to be sure, data also suggest that the financial and sovereign debt crises may have

**Table 2 Average and dispersion of interest rates on loans and deposits across euro area countries**

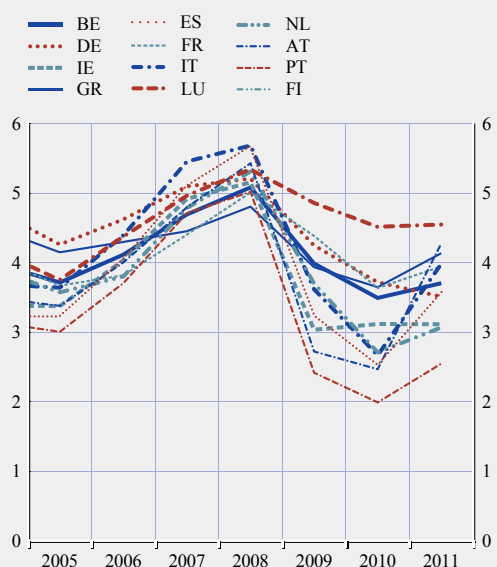
(mean and standard deviations; percentage and percentage points per annum, selected years)

Indicator		1990	1995	2000	2005	2010	2011
New deposits with agreed maturity from HHs	mean	9.5	6.2	4.3	2.2	2.3	2.8
	st.dev	2.4	2.3	0.6	0.1	0.8	1.0
New deposits with agreed maturity from NFCs	mean	8.7	4.6	4.7	2.1	1.2	1.5
	st.dev	1.7	1.5	0.6	0.2	0.8	0.8
New loans to NFCs	mean	11.6	7.5	5.7	3.5	2.9	3.5
	st.dev	2.5	2.5	0.6	0.3	0.5	0.8
New loans to HHs for house purchase	mean	11.7	7.9	6.6	3.7	3.4	3.8
	st.dev	1.8	1.5	0.5	0.3	0.5	0.4
New loans for HHs for consumption	mean	13.2	9.5	8.7	6.7	6.1	6.5
	st.dev	6.2	4.6	1.5	1.3	1.7	1.9

Sources: National data and ECB calculations.  
Notes: Precise definitions of the categories can be found in the notes to Table 1. Mean values and standard deviations are weighted by business volume. Rates and weights before 2003 are based on non-harmonised estimates. The mean includes countries joining the euro area after 2003, while the standard deviation only considers deviations of the Euro 12 (the original 11 euro area countries plus Greece) in respect of the previously described mean for all periods.

**Chart 32 Interest rates on new loans to households for house purchase in euro area countries**

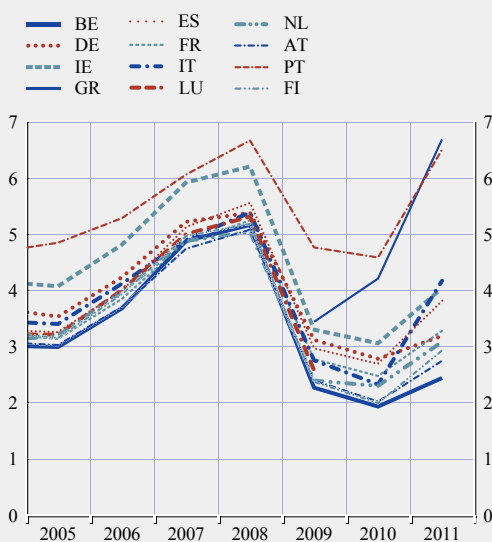
(percentages per annum)



Sources: ECB and national sources.  
Notes: A precise definition of this loan category can be found in the notes to Table 1.

**Chart 33 Interest rates on new loans to euro area non-financial corporations**

(percentages per annum)



Source: ECB and national sources.

Notes: A precise definition of the loan category can be found in the notes to Table 1.

contributed to at least a temporary weakening of this convergence.

## 5 NEXT STEPS AND FUTURE CHALLENGES

Section 4 shows that the progressive integration in the market for financial services has led to significant benefits for both households and corporations. However, as described in Chapter 1, since the financial crisis started, dispersion in various segments can be witnessed, implying a loss of some of the gains made over the last few decades in financial integration.

The Single Market (or rather, the fact that it remains incomplete) has attracted renewed attention since the advent of the current economic crisis. As regards financial integration, the Monti Report of May 2010<sup>42</sup> points to the importance of a single market for capital and financial services and an adequate supervisory system for the EU's financial sector. The reforms underway regarding the strengthening of the financial and institutional frameworks and the

challenges ahead are described in Special Feature D. These reforms have the potential to create positive and mutually reinforcing externalities between stronger financial and institutional frameworks and financial integration. Therefore they are an essential component in the completion of the Single Market.

The Monti Report also highlights the illiquidity of the European bond market and the difficulties firms face in accessing capital markets. Responding to these criticisms, the Commission has recently proposed (or announced that it intends to propose in some cases) a number of legal initiatives. They are explicitly part of the Commission's efforts to re-launch the Single Market.

A second initiative taken by the European Commission to foster financial integration is in the area of retail banking services. In the summer of 2011, the Commission published a recommendation to ensure access to basic banking services for all citizens, including in Member States in which they do not permanently reside, and to enhance the transparency and comparability of bank charges. Since the pace of integration in the area of retail banking services has been comparatively slow, largely owing to legal, regulatory and technological barriers, the proposal is an important step towards creating a single market for retail banking services.

A third measure that could have a positive impact on financial integration is the Commission's Europe 2020 Project Bond Initiative. This initiative aims to revive and expand EU capital markets in order to finance large European infrastructure projects in the fields of transport, energy and information technology. Under the initiative, a contribution from the EU budget would be used to provide capital to the European Investment Bank (EIB), which in turn would provide loans or guarantees

42 Monti, M. (2010), *A new strategy for the Single Market – at the service of Europe's economy and society*, report to the President of the European Commission, available on the Commission's website (<http://ec.europa.eu>).



as “credit enhancements” to project companies (in exchange for a fee). These credit enhancements would allow the project companies to issue senior project bonds with investment grade rating that are attractive to private investors. In September 2011 the Commission adopted a legislative proposal launching the pilot phase of the Europe 2020 Project Bond Initiative.

Finally, the Commission has proposed a regulation designed to ensure that venture capital funds can make cross-border investments without facing obstacles or additional requirements.<sup>43</sup> This regulation should make it easier for small and medium-sized enterprises (SMEs) to call upon funds with the necessary expertise for their respective sector at an attractive price. The envisaged measures should enhance the integration and dynamism of the single capital market for SMEs, thereby improving their access to finance and broadening their sources of financing.

The adoption of the proposals outlined above, most of which are currently being examined by the European Parliament and the Council, will positively impact on financial market integration. They can be expected to contribute to the realisation of the benefits described in Section 3. Moreover, from a broader policy perspective, further financial integration also contributes to deeper economic integration. Improving cross-border access to finance for SMEs or facilitating the funding of large-scale European infrastructure projects are two good examples. In both cases, financial integration has a very visible role to play in advancing economic integration in the EU – and thereby also in strengthening the “E” in EMU.

43 Proposal for a Regulation of the European Parliament and of the Council on European Venture Capital Funds, COM(2011) 860 final.

## B. THE EFFECTS OF WEAKER FINANCIAL INTEGRATION ON MONETARY POLICY TRANSMISSION

*The financial crisis and the more recent sovereign debt crisis had a strong negative impact on euro area financial markets. The asset substitution and arbitrage processes that, in normal conditions, smooth out price and return differentials for equivalent categories of borrower and lender were severely hampered. As a consequence, increased disparities among local market conditions were observed, leading to market malfunctioning and fragmentation as well as, in extreme cases, the re-emergence of separate national markets.*

*In this environment, the monetary transmission process of the euro area ceased to function properly, i.e. to convey balanced and homogeneous signals to the euro area economy as a whole in response to monetary policy decisions. Given the key role played by the banking sector in the financing of the euro area economy, the impairment of transmission through banks is of particular concern; nonetheless, a similar phenomenon has occurred also for market-based financing.*

*This Special Feature examines evidence documenting the impact of increased fragmentation on the transmission mechanism. Making reference to a commonly accepted scheme of how the transmission process in the euro area usually operates, the following sections report the available evidence on how financial integration has deteriorated in both the funding and lending markets, discussing how monetary transmission via banks and via the financial markets has been impaired.*

*The evidence points to a significant impairment of the monetary policy transmission channels in the euro area, leading to high degree of heterogeneity across countries and even cases of severe distortion of monetary policy transmission. At the same time, however, the negative impact has been mitigated by the Eurosystem's monetary policy measures.*

## I INTRODUCTION

Chart 34 contains a stylised representation of the euro area monetary policy transmission process, summarising the main channels usually depicted in the economic literature. In the chart, the regular transmission channels (i.e. those that operate when markets function normally) are denoted by blue arrows.

A key role is played by the signals transmitted from the key ECB interest rate to money market rates and, along the yield curve, to longer maturity rates. This is the first step in a sequence that eventually results in the pass-through of changes to the real sector, through what is commonly called the “interest rate channel” (see the left-hand side of Chart 34). At the same time, the transmission of monetary policy signals via the interest rate channel is accompanied (and typically enhanced) by its impact on the funding and capital conditions of banks, which in turn affects both their lending volumes and lending rates. This is called the “bank lending channel”. Similarly, the implications of monetary policy for the valuation of borrowers’ balance sheets usually further amplifies the initial monetary policy effects in terms of access to and conditions for bank loans to the real sector (the “balance-sheet channel”).

The alternative channels of monetary policy transmission that become relevant under stress are denoted by the light reddish brown to dark reddish brown arrows. The dashed box in the centre of the chart highlights the crisis-related effects channelled through the banks’ balance sheets via the bank lending channel and via the impact of banks’ balance sheet conditions on the various segments of the interest rate channel (disruptions in the latter are indicated by light reddish brown and dark reddish brown flashes of lightning).

More specifically, for the overall credit channel, the impairments induced by the financial crisis resulted in asymmetric effects, amplifying

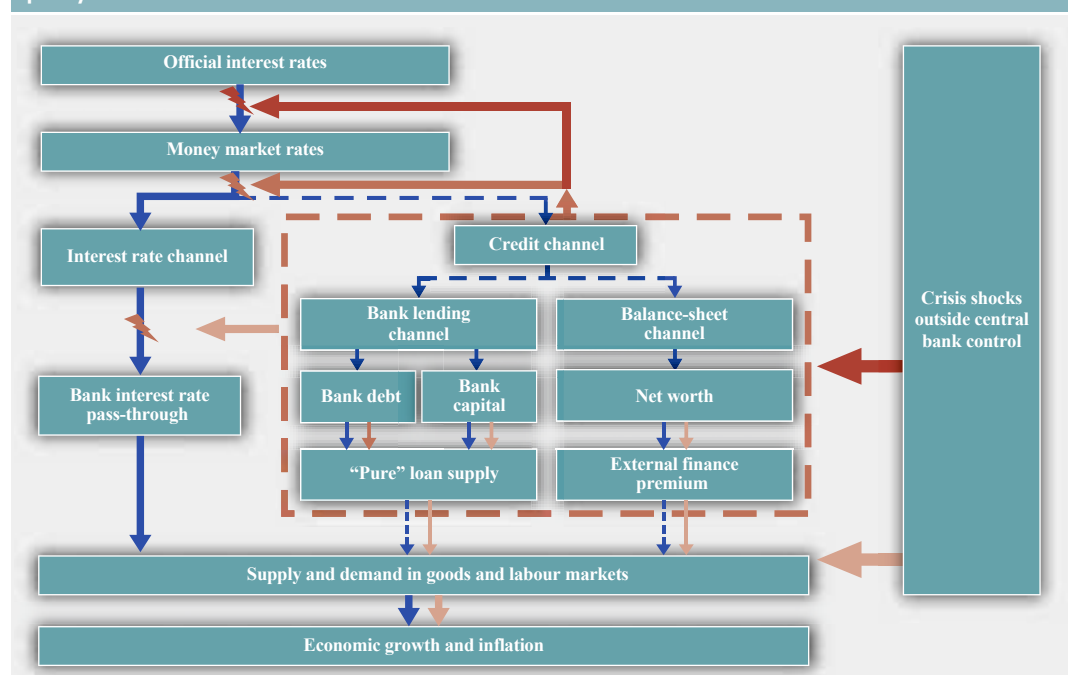
a restrictive policy stance in a risk-averse environment and attenuating expansionary policies due to banks' propensity to precautionary liquidity hoarding. At the same time, the strength of these asymmetric effects varied across countries and banks, injecting a degree of heterogeneity in monetary policy transmission.

As for the impact of banks' balance sheets on the different segments of the interest rate channel (in Chart 34, indicated by light reddish brown/dark reddish brown arrows leading from the dashed box to the light reddish brown and dark reddish brown flashes of lightning on the interest rate channel), the weakening in the transmission to a large extent depends on the quality of banks' balance sheets, i.e. their funding structure and funding opportunities and their portfolio quality. This shows, for instance, the degree to which access to money markets is impaired or disrupted and, thereby, the direct

impact of changes in monetary policy rates on banks' short-term funding costs.

Overall, these crisis-induced changes have partly suspended the smooth translation of the monetary policy stance into the financing conditions of the real sector, making the process less robust and predictable. Particularly in the case of banks' wholesale funding, these impairments were accompanied by greater market segmentation, both across borders and in other forms. This was reflected in a higher degree of heterogeneity of market access and pricing across countries and among individual issuers. Thus, the pass-through of changes in key policy interest rates to money market interest rates and the functioning of the bank lending channel were affected (as depicted in Chart 34 by the arrows originating from "bank debt" within the dashed box), although this was in part mitigated by the Eurosystem's standard and non-standard monetary policy measures.

Chart 34 Stylised representation of market segmentation and the impairment of the monetary policy transmission mechanism



The blue arrows denote the traditional channels of monetary policy transmission. Light reddish brown to dark reddish brown arrows denote the crisis-related shock transmission and the resulting impairment and segmentation of the respective monetary policy transmission channels, with dark reddish brown indicating a stronger degree of impairment than light reddish brown. Similarly, the light reddish brown and dark reddish brown flashes of lightning indicate disruptions to the various stages of the interest rate channel as regards the transmission of changes in official interest rates to banks' retail rates. The dashed box in the centre of the chart shows how the effects are channelled through the banks' balance sheets, impairing both the traditional credit channel and the various stages of the interest rate channel, as indicated by the light reddish brown and dark reddish brown arrows.

In addition, with the intensification of the sovereign debt crisis in the summer of 2011, impairments and fragmentations in the market for sovereign debt were further aggravated. This inhibited the homogeneous transmission along the interest rate channel of movements in short-term interest rates to the longer-term rates relevant to the financing and expenditure decisions of the private sector across euro area countries. At the same time, the worsening of the sovereign debt crisis further impaired the bank lending channel. Both the deterioration in banks' funding abilities amid risk spillovers from their respective sovereigns (see "bank debt" in the dashed box in Chart 34) and the large exposures to domestic sovereign bonds weighing on banks' balance sheets (and on their capital positions) contributed to this impairment. The result was a marked and persistent increase in the dispersion of bank retail rates as observed in both the deposit and lending rates.

Against this background, this Special Feature provides an overview of the impact of the financial crisis on developments in euro area bank funding and the cross-country dispersion in the financing of the non-financial private sector, highlighting the repercussions of cross-country heterogeneity on the transmission of monetary policy.

## 2 DEVELOPMENTS IN EURO AREA BANK FUNDING AMID THE FINANCIAL CRISIS

Bank funding markets play a key role in the transmission process, given the strong reliance on bank-based funding of the euro area non-financial private sector. The financial crisis affected all the main segments of bank funding. In this section, we will give some evidence of such affects, focusing on the most important categories. The observed impairment and market fragmentation included restrictions in access to funding for banks in several euro area countries (as revealed for example by answers to the Eurosystem's bank lending survey (BLS); Chart 35) and a substantial increase in

Chart 35 Change in access to wholesale funding over the past three months

(net percentage of banks reporting deteriorated market access)



price differentiation, largely based on banks' countries of origin. The survey responses indicated not only a substantial rise in the percentage of banks reporting deterioration in their access to wholesale funding (through money markets, debt securities markets, securitisation), but also a substantial variation across countries (as indicated by the shaded area between the first quartile and third quartile of responses in Chart 35).

Overall, impairments and market segmentation were seen across a broad range of market segments, including deposit and money markets, debt securities markets and securitisation markets. The deposit funding, money market funding and long-term market-based debt funding will be reviewed now.

## DEPOSIT FUNDING

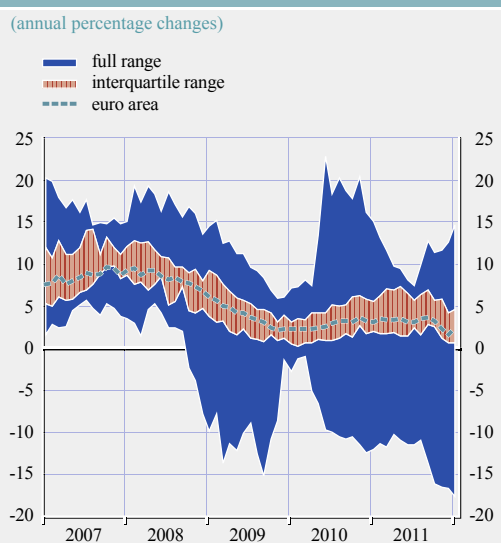
Chart 36 illustrates the recent dynamics in MFI deposits from the "money-holding sector"

(essentially, the private non-financial sector). It shows the average growth in deposits for the euro area (dashed line), the interquartile range (reddish area) and the overall range (dark area). The chart shows growing differentiation in deposit dynamics, which accelerated after the beginning of the sovereign debt crisis in 2010.

Since summer 2011 non-euro area residents increasingly withdrew their deposit from banks in the euro area (Chart 37 for selected countries). This probably reflected rising concerns among depositors about the situation of banks in a number of euro area countries, owing to their exposure to sovereign debt and the increased liquidity pressures faced by a number of banks.

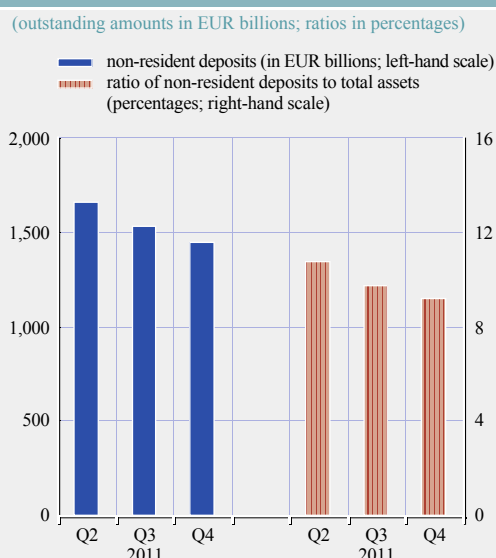
Chart 38 shows the dispersion of deposit rates in the euro area. It shows that, as with deposit growth, the dispersion of deposit interest rates has been very significant. Both the rates and their cross-country dispersion have increased steadily since 2010. In several euro area

**Chart 36 Developments in MFI deposits from the money-holding sector across euro area countries**



Source: ECB.  
 Notes: MFI deposits exclude long-term deposits held by OFIs, which are affected by the accounting treatment of some securitisation transactions. The "money-holding sector" comprises all non-MFIs resident in the euro area (except central government). Latest observation: January 2012.

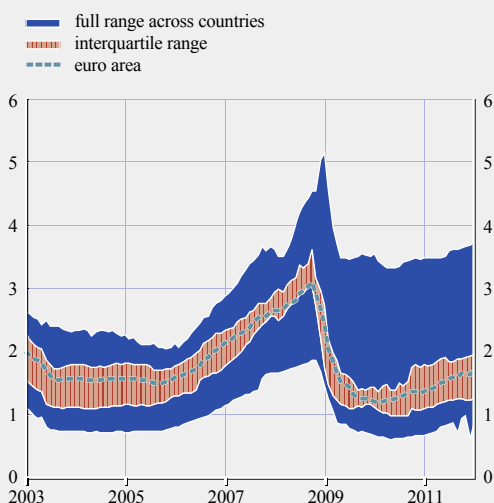
**Chart 37 Deposits of non-euro-area residents in selected euro area countries**



Sources: ECB and ECB calculations.  
 Note: The selected countries include France, Italy, Spain and EU-IMF programme countries.

**Chart 38 Interest rates on MFI deposits for households in the euro area**

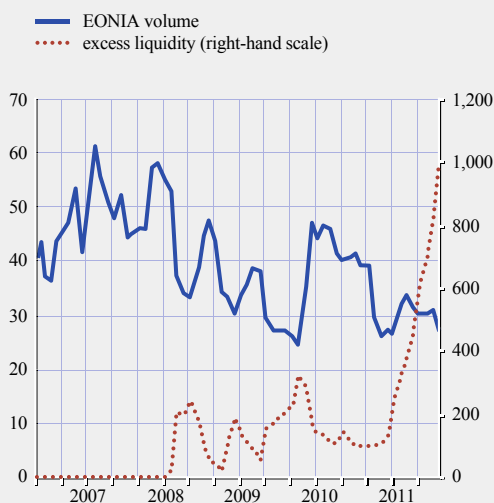
(percentages)



Sources: ECB and ECB calculations.  
Notes: The deposit rates are aggregated using outstanding amounts. Latest observation is January 2012.

**Chart 39 Excess liquidity and EONIA turnover volumes**

(EUR billions)



Source: ECB.  
Notes: Excess liquidity is defined as the difference between the amount of liquidity supplied by the Eurosystem and the sum of bank reserve requirements and autonomous factors, such as banknotes in circulation.

countries banks offered deposit rates at close to or above market rates, leaving banks' deposit margins very small or even negative.

This evidence suggests that in recent periods deposit markets have been increasingly tense, with depositors demanding higher risk premia and stressed banks offering increasingly generous conditions to attract new deposits and deter withdrawals. This evidence points to strong differentiation in banks' cost of funding across the euro area, which may be passed on to their customers in the supply and price of credit offered by these banks, thereby affecting the transmission of monetary policy.

### MONEY MARKET FUNDING

In the first half of 2011, conditions temporarily improved in euro area money markets, as witnessed by a gradual decrease in excess liquidity (measured by the volume of deposits at the Eurosystem). This phase was, however, followed by a sharp deterioration in the second half of 2011,

triggered by the deepening of the sovereign debt crisis.

Chart 39 shows the amount of excess liquidity and the turnover volume in the overnight market. Excess liquidity is defined as the difference between the amount of liquidity supplied by the Eurosystem and the sum of bank reserve requirements and autonomous factors, such as banknotes in circulation. This effectively corresponds to the volume of bank deposits with the Eurosystem.

Before October 2008, the Eurosystem maintained a tight control on the amount of liquidity supplied, so the excess liquidity was very small. In October 2008 the Eurosystem switched to a fixed rate full allotment regime, allowing banks to obtain any amount of liquidity they demanded. In a well-functioning market, even if liquidity is readily available, excess liquidity should remain very low, as banks have to pay for liquidity obtained from the Eurosystem at a rate – the main refinancing rate – which is higher

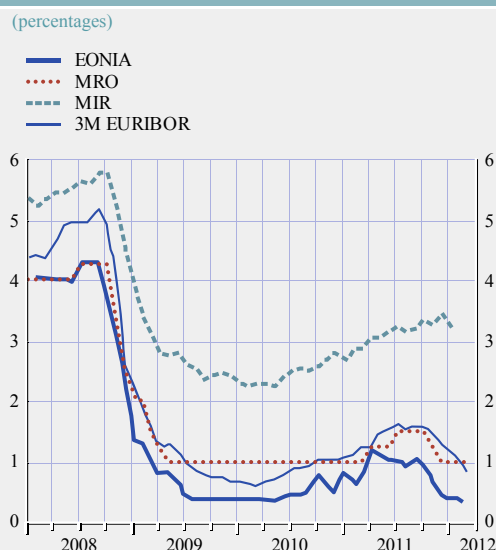
than the rate they receive on their Eurosystem deposits. A large volume of excess liquidity is a reflection of market segmentation, with banks preferring to park their excess liquidity with the central bank (at a loss), rather than exchange it in the market at more favourable rates. Indeed, Chart 39 shows how peaks in excess liquidity are usually accompanied by troughs in turnover volumes in the overnight market. The decline in turnover following the large increase in excess liquidity after the recent three-year long term refinancing operations has however remained limited.

A second implication of a large volume of excess liquidity is that it tends to drive the overnight market rate down, towards that on the deposit facility, as can be seen in Chart 51 in Special Feature C of this report. That chart clearly shows that during periods of abundant liquidity, there is a negative relationship between the volume of liquidity supplied and the EONIA rate; the larger the former, the closer the EONIA rate tends to move towards the bottom of the corridor.

Changes in the amount of excess liquidity, by affecting the amount and cost of funds available to banks, are likely, in turn, to have an impact on retail lending rates. Chart 40 shows developments since 2008 in various money market rates (EONIA, main refinancing operations (MRO) and three-month EURIBOR) and the interest rates charged by MFIs on short-term loans – more specifically, the rates charged to non-financial corporations (NFCs) on new loans with an initial rate fixation period of up to one year. The chart suggests that the MRO rate, the three-month EURIBOR and the EONIA are highly correlated with retail lending rates.

A relevant consideration from a monetary policy perspective is that the ongoing segmentation of money markets – reflecting higher risk premia and weaker financial integration – may affect the relative importance of the EONIA and MRO rates in determining the retail lending rates of banks.<sup>44</sup> The lending rate that a bank charges to its customers should in theory reflect its marginal costs of funding. The MRO rate represents the

**Chart 40 Relationship between the MRO, EONIA and three-month EURIBOR rates and interest rates on MFI loans to NFCs (MIR)**



Source: ECB.  
 Notes: MRO (dotted reddish brown line) is the main refinancing operation rate set by the Governing Council of the ECB. MIR (dashed petrol blue line) is the MFI interest rate charged to NFCs on new loans with an initial rate fixation period of up to one year. EONIA (thick blue line) is the average euro area overnight unsecured money market rate. 3M EURIBOR (thin blue line) is the average interest rate at which euro area banks offer to lend each other unsecured funds at three months.

marginal cost of funding for those banks which are cut off from the money market and rely exclusively on the ECB's refinancing operations to obtain the necessary liquidity. However, for those banks which still have access to and are active in the money market, the marginal cost of funding is represented by the EONIA rate. With the worsening of the sovereign debt crisis, many financial institutions have also come under stress. The segmentation of money markets which has been observed since the start of the crisis may therefore imply that monetary policy impulses are transmitted differently in those countries whose banks have come under more severe stress than in others.

<sup>44</sup> The segmentation of the money market and the resulting uneven distribution in the provision of central bank liquidity within the Eurosystem are also reflected in the TARGET2 balances of NCBS. The increase in TARGET2 negative balances of some NCBS during the crisis mainly reflects funding stress in their respective banking systems which had previously been funded via the money market.

## LONG-TERM MARKET-BASED DEBT FUNDING

Bank funding conditions in long-term markets are one of the determinants of the prices of loans extended by banks at longer maturities. Therefore, the degree of integration of the markets for long-term debt instruments is a factor in the proper functioning of the monetary policy transmission mechanism; if markets are well integrated, the transmission is smoother and more balanced across sectors and countries. In the following, we review recent developments in these markets from the perspective of cross-country integration and their implications for monetary policy transmission.

Euro area banks' issuance of long-term debt instruments has undergone many changes in recent years.<sup>45</sup> In the period leading up to the financial crisis, issuance of unsecured bank bonds and securitised products was comparatively strong (Chart 41).<sup>46</sup> During the financial crisis, overall issuance dropped significantly. As market uncertainty and counterparty risks increased

substantially from late 2008 onwards, various support schemes were put in place. In the first half of 2009 around 55% of all newly issued bank bonds were covered by government guarantees. In addition to the measures taken by individual governments, the ECB introduced the covered bond purchase programme (CBPP), which was announced on 7 May 2009 and was active in the period from 2 July 2009 to 31 June 2010. This reactivated the issuance of covered bonds in the euro area.<sup>47</sup> More recently, during 2010 and 2011, the crisis in the euro area government bond markets has again impaired the markets for banks' long-term funding instruments. Banks in some countries lost access to these markets, while others faced increasing costs and very volatile market conditions.

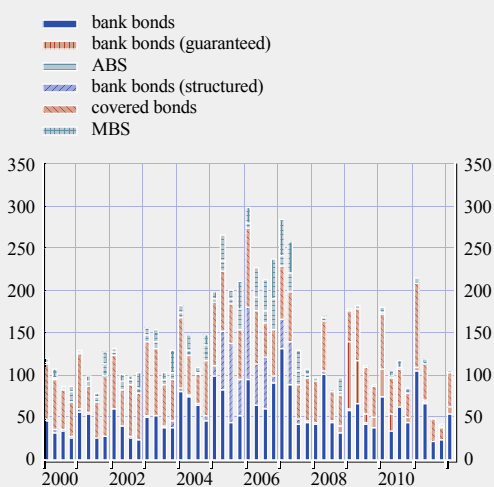
During this period, further support measures were introduced, including a second covered bond purchase programme (CBPP2), which was announced by the ECB on 6 October 2011.

When trying to access markets for long-term debt instruments, a key challenge currently faced by some euro area banks are spillover effects from sovereign bond markets. Taking the market for unsecured bonds as an example, Charts 42 and 43 show the spreads against swaps at issuance of selected bank bonds in the period 2003-2011 for three rating classes and two groups of countries (with and without government guarantees).

The charts show that primary market prices diverged during the financial and sovereign debt

Chart 41 Banks' long-term debt financing instruments – issuance activity

(EUR billions)



Sources: Dealogic DCM Analytics and ECB calculations.

Notes: Retained deals are not included. Bank bonds include non-subordinated unsecured bonds issued by financial corporations and classified as high-yield or investment-grade bonds or medium-term notes. Structured bank bonds are defined as bonds with cash flows linked to commodities, equities, derivatives, credit events, etc.

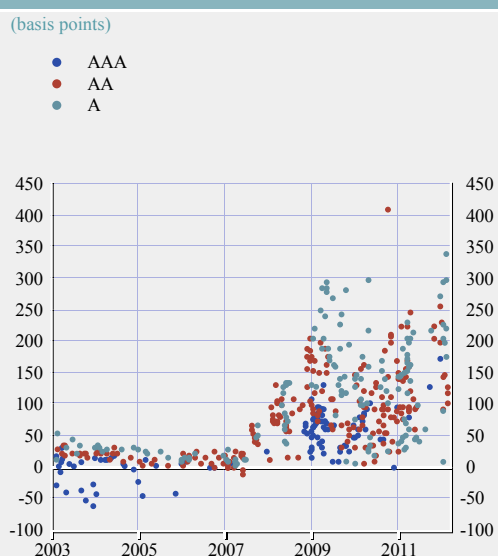
45 A detailed analysis of developments in single market segments can be found in the article entitled "Euro area markets for banks' long-term debt financing instruments: recent developments, state of integration and implications for monetary policy transmission" in the November 2011 issue of the ECB's *Monthly Bulletin*.

46 During this period, some large banks also issued substantial amounts of bonds with payment structures linked to the price developments of other asset classes, e.g. equities or equity indices.

47 For an analysis of the impact of the CBPP on the covered bond markets, see "Covered bond market developments and the covered bond purchase programme", *Monthly Bulletin*, ECB, August 2010, and Beirne, J. et al., "The impact of the Eurosystem's covered bond purchase programme on the primary and secondary markets", *Occasional Paper Series*, No 122, ECB, January 2011.

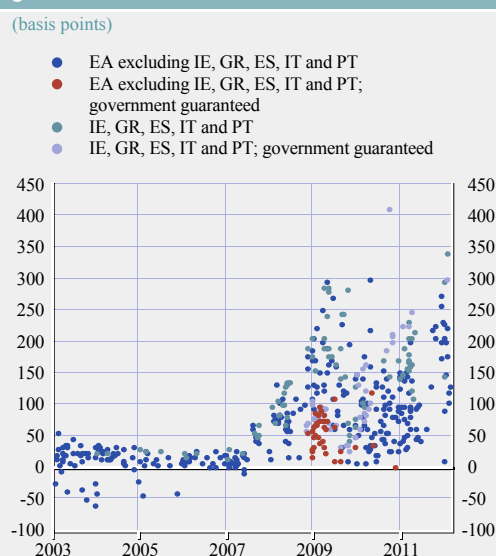


**Chart 42 Bank bond spreads at issuance by rating class**



Sources: Bloomberg, Dealogic DCM Analytics and ECB calculations.  
 Notes: Spreads are computed with respect to swaps. Data are based on the country of operation of the issuer and are therefore on an unconsolidated basis. The charts include senior unsecured fixed rate investment-grade bonds and medium-term notes with a time to maturity at issuance of between one and ten years. Only euro-denominated issuances with a face value of at least €100 million are included.

**Chart 43 Bank bond spreads at issuance by country group with and without government guarantee**



Sources: Bloomberg, Dealogic DCM Analytics and ECB calculations.  
 Notes: Spreads are computed with respect to swaps. Data are based on the country of operation of the issuer and are therefore on an unconsolidated basis. The charts include senior unsecured fixed rate investment-grade bonds and medium-term notes with a time to maturity at issuance of between one and ten years. Only euro-denominated issuances with a face value of at least €100 million are included.

crises and that market access became more expensive for some issuers. Some of this divergence clearly reflects a better risk pricing of individual issuers, as shown by the price differentiation across rating classes (Chart 42).<sup>48</sup>

However, there are also signs of country-dependent price differentiation in the primary market for banks' long-term debt, which started with the sovereign debt crisis. For example, during 2009 banks' costs of accessing the primary bond market for long-term debt depended mainly on their individual rating class. In addition, bonds backed by government guarantees were cheaper to issue, with only small differences related to the country of issue. In 2011, however, the cost of issuing bonds in the primary market was clearly dependent on the country of origin, rather than on the rating and the cross-country differences in the cost for government guaranteed bonds also increased.

This evidence suggests that access to long-term debt financing is more difficult for banks in the countries strongly affected by the sovereign debt crisis. This can only partly be interpreted as a signal of reduced integration in this market. The pricing may also reflect a number of other factors which make the credit quality of banks dependent on the strength of the sovereign. For example, a direct relationship between the sovereign and bank credit pricing might be due to the bank's holdings of domestic sovereign debt or its exposure to the credit risk of domestic households and corporations, which might increase as the country's growth prospects weaken due to sovereign debt problems.<sup>49</sup>

<sup>48</sup> The importance of the possibility of a bail out might also explain the sovereign risk-bank risk correlation. For a further analysis of the possible channels, see, for example, "The impact of sovereign credit risk on bank funding conditions", *CGFS Papers*, No 43, Committee on the Global Financial System, July 2011.

<sup>49</sup> Recently, markets have also differentiated between individual issuers from the same AAA-rated countries (see Chapter 1 of this report).

**Table 3 CDS premia on banks and short-term MFI interest rates on loans to NFCs in selected euro area countries**

(new business; interest rates in percentages per annum; CDS spreads in basis points)

	CDS premia Sep. 09	Interest rates Sep. 09	CDS premia Sep. 11	Interest rates Sep. 11
Germany	91	2.43	271	3.10
France	81	1.84	284	2.87
Italy	58	2.28	472	3.42
Spain	152	2.66	823	3.66
Portugal	87	4.36	1,066	6.67
Greece	144	3.62	2,246	6.24
Dispersion	94	2.51	1,975	3.80

Sources: Thomson Reuters, ECB and ECB calculations.

Notes: Short-term rates refer to up to one year maturity. CDS premia of banks refer to the median spread of five-day moving averages at the end of the fourth week of September. Dispersion is computed as the difference between the highest and lowest values across countries.

In addition, weak investor sentiment among portfolio investors, who might withdraw their funds from the whole region, could result in lower integration in the affected markets.

Diverging costs of market-based funding have major consequences from the perspective of monetary policy transmission. Table 3 provides a cross-country comparison of developments in the cost of market-based bank debt and in lending rates charged by banks. The CDS premia charged by investors for the bank debt in different countries vary much more now than they did two years ago during the recovery phase after the Lehman crisis (see the bottom row of the table).<sup>50</sup> Similarly, there are also clear signs of growing divergence in the lending rates charged by banks in different euro area countries. Thus, from the perspective of financial market integration and its role in the monetary policy transmission mechanism, it is very important to monitor trends and conditions in banks' long-term funding markets across countries.

### 3 CROSS-COUNTRY DISPERSION OF FINANCING CONDITIONS FOR THE NON-FINANCIAL PRIVATE SECTOR

In this section we look at the financing conditions offered by banks to non-financial borrowers.

The sovereign debt crisis has had significant repercussions on conditions of financing for the non-financial private sector. Statistical data and survey evidence point to an increase in cross-country dispersion of access to and conditions of finance in 2011. There is evidence that the impairment and fragmentation of euro area banks' funding markets also affected, via the transmission channel, the borrowing conditions available to real economy. The sovereign debt crisis also had an impact (via the devaluation of firms' portfolios and differentiations of country-specific outlooks), as did a general increase in investors' risk aversion.

The remainder of this section addresses cross-country variations in the financing of NFCs and households.

#### BANK FINANCING OF NON-FINANCIAL CORPORATIONS

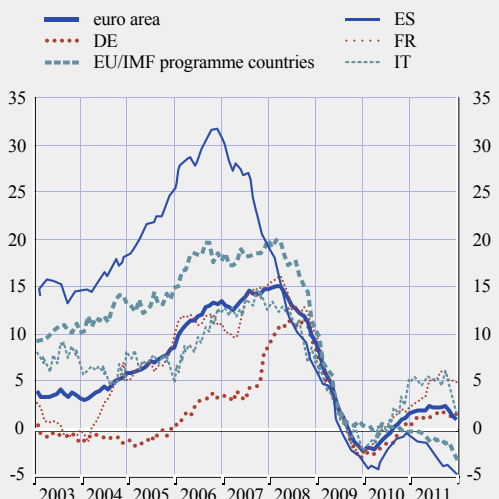
At the disaggregated euro area level, the crisis gave rise to substantially more heterogeneous bank financing conditions for NFCs across euro area countries. At first, this applied in particular to corporates in small countries under EU-IMF programmes, but more recently it has also spread to some of the larger euro area countries, affecting both access to and costs of financing.

In conjunction with the fall in loan growth at the onset of the crisis, there was also a large temporary increase in cross-country dispersion of growth in bank loans to firms. At the start of the economic recovery during 2010 and at the beginning of 2011, overall dispersion in loan growth declined substantially, only to increase again (particularly among the larger countries) after the middle of 2011 following the re-intensification of the sovereign debt crisis (Chart 44). However, the rather homogeneously subdued levels of loan growth up until mid-2009

<sup>50</sup> For better comparability, the table refers to CDS premia rather than yields on market-based debt. This does not influence the results, as the CDS premium is in most cases similar to the secondary market spread of the corresponding bank bonds vis-à-vis swap rates.

**Chart 44 MFI loans to NFCs**

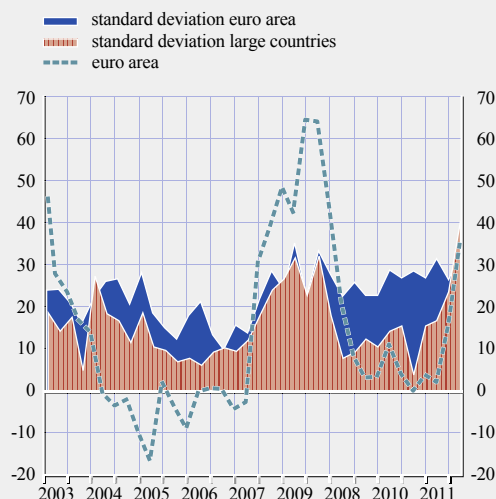
(annual percentage changes)



Source: ECB.  
Notes: Adjusted for securitisation, assuming no securitised loans to NFCs before 2009. Latest observation: January 2012.

**Chart 45 Changes in credit standards applied to the approval of loans or credit lines to enterprises**

(net percentage of banks indicating a tightening of standards)



Sources: Eurosystem's BLS and ECB calculations.

had masked substantial heterogeneity across countries as regards underlying factors such as demand, credit standards and lending rates.

As regards demand for bank loans from enterprises, developments have differed significantly across countries, particularly during the crisis, owing to different needs for external financing for investments and working capital. This dispersion reflects very different investment prospects and domestic economic outlooks, as well as cross-country differences in the internal financing capacities of firms.

On the supply-side, the above mentioned differences in banks' access to and costs of funding and in their balance-sheet conditions (together with the large variations in credit risk across countries and respective sovereigns) contributed to significant and heterogeneous impairments of the monetary policy transmission mechanism, specifically the bank lending channel and the interest rate channel. This, in turn, translated into a substantial degree of heterogeneity in firms' access to and conditions for bank funding, as can be seen, for example, in

the heterogeneity across countries in reported changes in credit standards by euro area banks in the bank lending survey (Chart 45).<sup>51</sup> The standard deviation across countries increased substantially at the onset of the financial turmoil, both across the euro area as a whole and across the large euro area countries. It has since remained at high levels for the euro area as a whole, while, after some convergence towards the end of 2010, it again increased significantly for the larger countries in the course of 2011, reflecting the spillover from the re-intensification of the sovereign debt crisis.

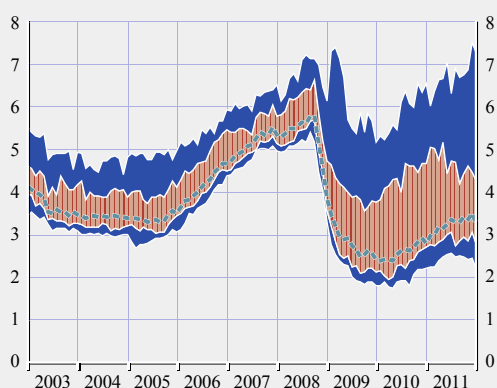
The increase in dispersion of lending rates for corporate loans at the onset of the crisis was particularly pronounced (Chart 46). This fed through to the large euro area countries with a limited time lag, and the dispersion has since remained at elevated levels both across the euro area as a whole and across the larger countries. Again, this strong heterogeneity across countries

<sup>51</sup> Similarly, the "Survey on the access to finance of SMEs in the euro area" (available on the ECB's website) indicates a substantial heterogeneity in access to bank finance from the borrowers' perspective.

**Chart 46 Composite MFI interest rate on loans to NFCs across euro area countries**

(percentages per annum)

- full range
- ▨ interquartile range
- euro area



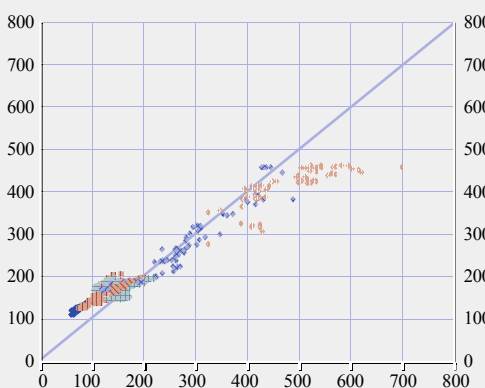
Sources: ECB and ECB calculations.  
Notes: Composite rate aggregated using outstanding amounts. Latest observation is January 2012.

**Chart 47 Sovereign and telecom CDS premia – euro area**

(basis points; 2 January 2010 – 31 December 2011)

x-axis: sovereign CDS premia  
y-axis: telecom CDS premia

- ◆ 2010 Q1
- ◆ 2010 Q2
- ◆ 2010 Q3
- ◆ 2010 Q4
- ◆ 2011 Q1
- ◆ 2011 Q2
- ◆ 2011 Q3
- ◆ 2011 Q4



Sources: Thomson Reuters and ECB calculations.  
Notes: Each chart presents the daily observations of telecom and sovereign CDS premia, marked for days in various quarters over the observation period. Euro area values are computed as the weighted averages of sovereign (or telecom) CDS premia of individual countries, where weights correspond to the ECB capital key.

probably reflected the above-mentioned country-specific impairment of various parts of the monetary policy transmission mechanism, in particular the bank lending channel (comprising banks' access to and costs of funding and their capital and balance-sheet conditions). Indeed, this wide dispersion in lending rates suggests an impairment of the homogenous pass-through of the monetary policy stance.

### MARKET-BASED FINANCING OF NON-FINANCIAL CORPORATIONS

Reflecting the increasing dispersion of the costs of long-term market-based funding for banks in euro area countries, some NFCs also faced increased costs for market-based debt financing. Looking, for example, at developments in the CDS markets for sovereign debt and telecom companies, Chart 47 shows that, in the euro

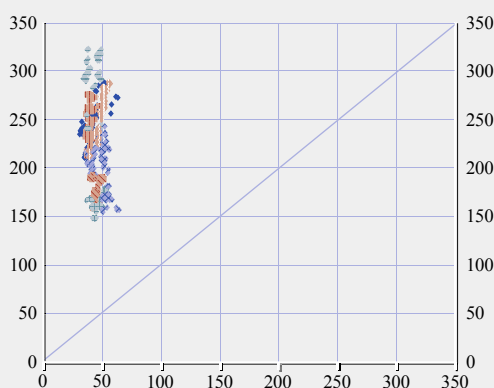
area, a higher sovereign CDS premia has tended to translate into a higher CDS premia for the respective telecom company. However, the same pattern is not observed in the United States (Chart 48). Significant correlation can be observed for all euro area countries. Although the patterns of changes in the telecom and sovereign debt markets vary, the correlation between the two sectors is always positive. However, it should be borne in mind that in most countries only a few corporations use market debt as a source of funding. Those who do so tend to be the larger and more international companies, so their costs are likely to depend primarily on international market conditions. For most euro area companies, bank lending is the main source of funding, so the transmission of funding shocks via this channel is the most relevant to their financing conditions.

**Chart 48 Sovereign and telecom CDS premia – United States**

(basis points; 2 January 2010 – 31 December 2011)

x-axis: sovereign CDS premia  
y-axis: telecom CDS premia

- ◆ 2010 Q1
- ◆ 2010 Q2
- ◆ 2010 Q3
- ◆ 2010 Q4
- ◆ 2011 Q1
- ◆ 2011 Q2
- ◆ 2011 Q3
- ◆ 2011 Q4



Sources: Thomson Reuters and ECB calculations.  
Notes: Each chart presents the daily observations of telecom and sovereign CDS premia, marked for days in various quarters over the observation period.

### CROSS-COUNTRY VARIATIONS IN BANK FINANCING OF PRIVATE HOUSEHOLDS

When compared to the interbank market or the market for lending to NFCs, the market for bank lending to private households has, for a number of institutional reasons, been the least integrated within the euro area. Nevertheless, a well-functioning and integrated financial market, in particular for bank lending in the period before the financial crisis, provided considerable support to the supply of bank loans to households in the euro area. Indeed, the integrated market for loan securitisation considerably enhanced the ability of banks throughout the euro area to meet the demand for loans from households in individual countries. In addition, a deep and liquid international interbank market alleviated lending risks faced by banks, with positive implications for loan supply.

Thus, despite the fact that bank lending to private households is the least integrated of the markets in the euro area, the malfunctioning

and partial fragmentation of the interbank and securities markets triggered by the financial crisis are likely to have repercussions on the funding situation of households in euro area countries, particularly in view of the fact that households depend to a very large extent on banks for their funding.

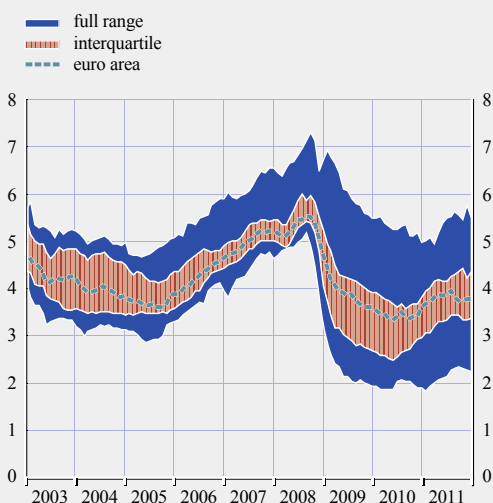
When assessing the implications for bank lending to households of the severe distortions in the transmission mechanism, it needs to be borne in mind that such effects become quantitatively measurable only after a time lag. Furthermore, the non-standard measures adopted by the ECB throughout the crisis have to some extent helped to shield households in the euro area from the negative effects of distortions in the transmission mechanism.<sup>52</sup> Therefore, except for countries under EU/IMF programmes, bank lending to households has not yet been affected in a quantitatively significant way by the severe distortions in the transmission mechanism, either in terms of loan volumes or interest rates. At the same time, the intensification of the stress in sovereign debt markets in the second half of 2011 in the presence of high levels of uncertainty increasingly hampered euro area banks' access to market-based funding. Such impairment risked curtailing lending by credit institutions to euro area households and non-financial corporations and in part contributed to net redemptions in MFI loans to households observed in December 2011. At the same time, non-standard measures adopted on 8 December 2011 by the Governing Council, particularly the three-year longer-term refinancing operations, have alleviated funding pressures on euro area credit institutions, thereby helping to reduce the risk of disorderly deleveraging by the banking sector.

Looking at concrete indicators, the crisis-induced dispersion in banks' funding conditions and the intensification of the sovereign debt crisis in 2011 have contributed to more heterogeneous

<sup>52</sup> See, for example, the article entitled "The ECB's non-standard measures – impact and phasing-out" in the July 2011 issue of the ECB's Monthly Bulletin.

**Chart 49 Composite MFI interest rate on loans to households across euro area countries**

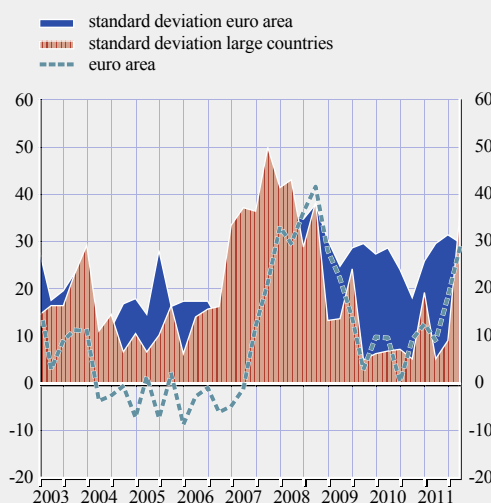
(percentages per annum)



Sources: ECB and ECB calculations.  
Notes: Composite rate aggregated using outstanding amounts.  
Latest observation is January 2012.

**Chart 50 Changes in credit standards applied to the approval of loans or credit lines to households for house purchases**

(net percentages of banks indicating a tightening of standards)



Sources: Eurosystem's BLS and ECB calculations.

conditions for bank financing of households across the euro area, in particular for countries under EU/IMF programmes. Two indicators can be used to illustrate this issue.

First, larger differences in interest rates charged by banks on loans to households across the euro area could be observed throughout the crisis (Chart 49), although the interquartile range was no wider than that observed in the period 2004-2005.

Second, the differences in banks' access to and costs of funding and in their balance sheet conditions across the euro area, contributed to heterogeneity in households' access to and conditions for bank funding. This is, for instance, reflected in the increased cross-country heterogeneity in changes in credit standards reported by euro area banks in the bank lending survey since the summer of 2007 (Chart 50). After also increasing at first, the standard deviation for large countries returned to historically more normal levels in 2010 and up to mid-2011, before increasing again towards the end of 2011.

#### 4 CONCLUSIONS

Overall, evidence from various financial market segments relevant for the funding of euro area banks and the financing of the private non-financial sector points to impairment and increased market fragmentation across euro area countries as a result of the sovereign debt crisis, and in particular its intensification in the summer of 2011. Consequently, the pass-through of changes in key interest rates to money market rates, and along the money market yield curve to longer maturity rates and then to retail interest rates, has been further impaired and become more differentiated. In addition, the market for sovereign debt (essential for the functioning of the interest rate channel) became severely disrupted in a number of euro area countries. This inhibited the homogeneous transmission of movements in short-term interest rates to the longer-term rates relevant to the financing and expenditure decisions of the private sector across euro area countries. The re-activation of the Securities Markets Programme served to partly mitigate these disruptions via interventions in the affected market segments

aimed at preserving the basic functioning of the transmission mechanism.

In parallel, the crisis-related effects on the more narrowly defined credit channel (or bank lending channel), particularly via banks' access to funding in highly fragmented markets, are likely to induce adjustments on banks' asset side, including their loan portfolios, with repercussions on the access to and conditions of financing for the private non-financial sector. In addition, banks' need to deleverage, owing to regulatory and market pressures to increase their capital buffers, is likely to further impair monetary policy transmission in a manner that may be uneven across countries as well as across individual banks.

Therefore, in order to facilitate the smooth transmission of the monetary policy stance across euro area countries and credit intermediation by euro area banks to the real sector, various targeted policy measures, particularly measures aimed at improving banks' access to funding and their liquidity positions, have been introduced during the crisis. More recently, the intensification of the stress in sovereign debt markets in the second half of 2011 – in the presence of high levels of uncertainty – increasingly hampered euro area banks' access to market-based funding. Such impairment risked curtailing lending by credit institutions to euro area households and non-financial corporations. To help to forestall such curtailment of credit and ensure that the ECB's monetary policy continues to be transmitted effectively to the real economy across the euro area, the Governing Council of the ECB decided on 8 December 2011 to implement additional non-standard monetary policy measures, including two longer-term refinancing operations with a maturity of three years and the option of early repayment. In parallel, policy measures aimed at supporting euro area banks' balance sheets may be necessary in order to mitigate the risk that bank deleveraging might endanger the supply of credit to the real sector, both in terms of the overall amount of credit and its distribution across countries.

### C. THE CONSEQUENCES OF REDUCED FINANCIAL INTEGRATION FOR THE EUROSYSTEM'S OPERATIONAL FRAMEWORK

*The operational framework is the set of instruments, regulations and procedures used by the Eurosystem to implement the monetary policy decisions of the Governing Council of the ECB. The framework is organised and structured (and adjusted as necessary) so as to ensure that implementation is efficient, effective and consistent with the singleness of the Eurosystem's monetary policy. This includes a smooth and balanced transmission of the monetary policy impulses to all financial market segments in all countries of the euro area.*

*Relying on market-based transactions and channels, the working of the operational framework depends on the functionality of the markets in which operations are conducted – primarily the money market, but also certain securities markets. The financial crisis has given rise to significant challenges to financial integration, as described in other parts of this report. These challenges have also affected the performance of the operational framework.*

*The non-standard measures adopted by the Eurosystem, ranging from the fixed-rate full allotment tender procedure to outright securities purchases, and more recently to a temporary enlargement of the collateral pool, have mitigated some of the undesired effects of the crisis. While, all in all, the operational framework has proven robust and flexible, adjusting well to difficult conditions, important challenges remain that may require further adaptations.*

#### I INTRODUCTION

The operational framework put in place when the Eurosystem came into being was designed, in part, to mitigate some of the potentially negative consequences of imperfectly integrated national financial markets. To that end, the framework possesses certain features, such as a broad variety of admissible collateral instruments and a large number of counterparties for central bank operations.

Over time, the framework has performed well, allowing the Eurosystem to steer short-term interest rates smoothly and precisely. For many years the volatility and cross-country dispersion of short-term interest rates were consistently moderate. Money market integration was greatly facilitated by the Eurosystem's new service for the settlement of euro payment transactions TARGET (and subsequently TARGET2). This allowed funds to be transferred safely and quickly between institutions throughout the euro area.

Since 2007, however, the financial crisis has presented new challenges for financial integration in the euro area. The impairment of financial integration across many market segments (including, notably, the money market) has affected the operational framework in a major way. Adaptations to the framework have been necessary. Moreover, although the framework was always broad in its scope, the challenge posed by the financial crisis has meant that the Eurosystem has had to extend the framework further, moving beyond money markets to become active in other segments, such as covered bonds and sovereign bonds.

Against the backdrop of developments in financial integration as discussed in other parts of this report, this Special Feature studies the consequences of the impairment of financial integration for the implementation of monetary policy. It shows how the non-standard measures, ranging from liquidity measures to outright purchases, have allowed the operational framework to function even in unprecedented circumstances, mitigating the effects of impaired financial integration on the implementation of monetary policy.

To summarise, Section 2 briefly outlines the most important features of the operational framework as it was until the beginning of the crisis. Section 3 discusses how financial integration has developed in the market segments that are most important for monetary policy implementation. Section 4 explains how the Eurosystem has adapted the



operational framework to the new challenges. Section 5 discusses some lessons provided by the impairment of financial integration during the financial crisis and Section 6 provides some conclusions.

## 2 THE OPERATIONAL FRAMEWORK OF THE EUROSISTEM

This section briefly reviews the main objectives of the operational framework, its instruments and the implementation of monetary policy.

The operational framework comprises the instruments and modalities by means of which the Eurosystem implements its monetary policy stance. The framework is the crucial first link in the chain of cause and effect that, starting from the Governing Council's decisions, is used to fulfil the ECB's mandate to maintain price stability in the medium term. For this purpose, the operational framework must be able to transmit monetary policy decisions to the economy as quickly and precisely as possible, in a way that affects all parts of the euro area (markets, countries, individual financial and non-financial agents) in a balanced manner.

Since monetary policy decisions are implemented and transmitted to the economy primarily through the markets on which interbank deposits and short-term instruments are exchanged (which together comprise the money market), the functionality of these markets is crucial. In particular, financial integration ensures that policy signals are transmitted in a smooth and balanced manner to the whole euro area, thereby providing a crucial contribution to the singleness of the Eurosystem monetary policy (the effects of a lack of financial integration on the monetary policy transmission process are described in Special Feature B).

Although in pre-crisis times the operational framework performed very well, particularly as a result of the extremely high degree of integration attained by the money market since the introduction of the euro, in the last

three years the impairment of financial integration has put the framework under pressure and adaptations have become necessary.

### OBJECTIVES

The main objective of the framework is the control of short-term interest rates.<sup>53</sup> Other important objectives are: (i) supporting the framework for signalling the monetary policy stance; (ii) compatibility with the principles of a free market economy and efficient resource allocation; (iii) providing liquidity to and ensuring the orderly functioning of the money markets, thereby contributing to financial stability; (iv) equal treatment of financial institutions and harmonisation of rules and procedures.

### INSTRUMENTS

The main instruments are open market operations, standing facilities and reserve requirements. The additional, recently adopted instrument of outright purchases is discussed in more detail below.

All counterparties have to maintain a certain minimum level of reserves over the course of a reserve maintenance period, which usually comprises four weeks. The minimum reserve requirement has to be fulfilled on average over the course of the maintenance period.

In normal circumstances, the Eurosystem provides liquidity primarily through two types of operation. In the monthly longer-term refinancing operations (LTROs) of three-month maturity, the Eurosystem allots pre-set amounts of liquidity and is an interest rate taker. By contrast, the main refinancing operations (MROs) are calibrated on a weekly basis so that total liquidity provision equals liquidity needs. Under normal circumstances the Eurosystem signals its monetary policy stance through the MRO rate.

<sup>53</sup> The complete set of objectives of the framework is discussed in more detail in *The monetary policy of the ECB*, ECB, 2011.

In addition to the regular refinancing operations, the Eurosystem offers two standing facilities, the marginal lending facility and the deposit facility, which banks can access on their own initiative either to borrow from or to lend to the central bank. As these facilities are available to an unlimited extent on demand, the two interest rates applied define a range within which unsecured overnight interbank rates usually stay. This range has usually been kept symmetric around the MRO rate at its mid-point.

Even before the crisis, the main features of the Eurosystem's counterparty and collateral framework were as follows: first, the Eurosystem accepts a very broad range of assets as collateral; second, a broad range of counterparties can participate in refinancing operations; third, the same type of collateral is accepted in all credit operations; fourth, the counterparty and collateral eligibility criteria and the associated risk control measures are common across the euro area; fifth, the liquidity deficit of commercial banks and the size of reserve requirements imply large refinancing operations by the central bank. In a single word the operational framework of the Eurosystem could be characterised as "broad", in contrast to the narrow operational framework of the Federal Reserve System before the crisis, which had few counterparties, a limited range of collateral and small refinancing operations. However, while the frameworks of the two central banks differed, they displayed the same ability before the crisis to control short-term interest rates in the vicinity of the respective policy rate.

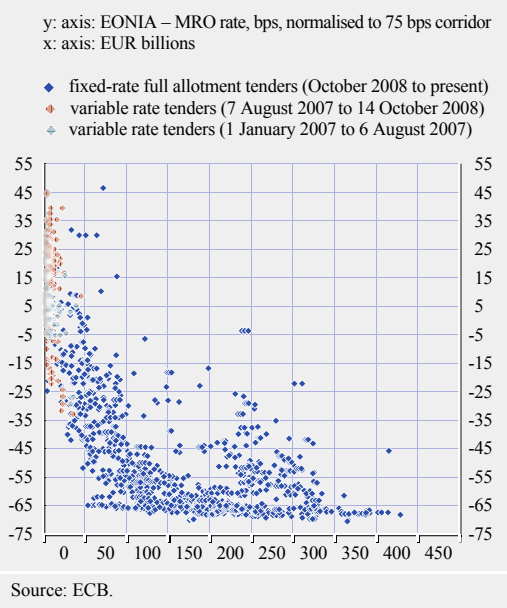
### IMPLEMENTATION

In normal times the ECB calibrates its main refinancing operations so that the amount of liquidity provided allows counterparties to smoothly fulfil their liquidity needs. Liquidity needs stem from reserve requirements and "autonomous factors", such as the quantity of banknotes in circulation.

By steering liquidity provision to meet the banking system's needs, the Eurosystem aims to equalise the probability of banks being long on or short of central bank liquidity at the end of any maintenance period. If they were short, they would need to have recourse to the marginal lending facility. If they were long, they would need to have recourse to the deposit facility. If the probability of recourse to either facility is equalised, then, under certain moderately reasonable assumptions regarding market functioning and aggregate risk aversion, the price of central bank liquidity in the interbank market will be equal to the mid-point of the corridor formed by the deposit facility rate and the marginal lending facility rate. In other words, the interbank overnight rate should equal the MRO rate. With this equilibrium achieved on the last day of the maintenance period, intertemporal arbitrage ensures that the interbank rate is also equal to the MRO rate on the days prior to the last day of each maintenance period. This was indeed, by and large, the situation prevailing before the crisis.

Chart 51 plots the spread between the EONIA and the MRO rate (i.e. the minimum bid rate in MROs) against excess liquidity in three periods, which are indicated by different colours. In pre-crisis times, represented on the chart by the period 1 January to 6 August 2007, excess liquidity was close to zero and EONIA was successfully steered close to the MRO rate. In the period from 7 August 2007 to mid-October 2008, tensions in money markets caused EONIA volatility to increase; this effect was mitigated by the Eurosystem through selective liquidity injections and by allowing counterparties to front-load reserve requirements. Starting with the introduction of fixed-rate full allotment (FRFA) tenders with effect from 15 October 2008 (discussed in more detail below), liquidity supply became demand driven and the substantial amounts of excess liquidity led the EONIA rate to fall below the MRO rate and to settle close to the deposit facility rate.

**Chart 51 The relation between the EONIA spread (EONIA minus MRO rate) and excess liquidity**



### 3 ROLE OF MARKETS AND RECENT DEVELOPMENTS IN FINANCIAL INTEGRATION

This section focuses on the developments in financial integration in market segments of particular importance for the operational framework and the monetary policy transmission mechanism.

The impairment of money markets is of particular importance as it occurs right at the start of the transmission mechanism. Accordingly, several measures have been targeted at improving liquidity provision and alleviating problems in the functioning of the interbank market.

However, in the course of the crisis, disruptions of financial integration also extended to the sovereign and covered bond markets. These markets, too, are important segments of the transmission channel of monetary policy. As a result, the Eurosystem had to look beyond the interbank market in the implementation of monetary policy.

### INTERBANK MARKETS

The euro money market was the financial market segment which achieved the fastest and most complete integration after the start of the monetary union. However, it was also the market in which the crisis was felt most quickly: from the beginning of August 2007, overnight rates started trading at unusually high spreads to the MRO rate, reflecting the more acute liquidity risk.

The collapse of Lehman Brothers in September 2008 transformed the money market tensions into a full-blown crisis, as a vicious circle of increased liquidity demand and counterparty risk brought interbank trading to a virtual standstill. Money markets became extremely segmented and the uncertainty surrounding holdings and values of mortgage-related financial products shut some counterparties out of the interbank market.

Starting in early 2010, as a result of the sovereign debt crisis, cross-country segmentation increased to acute levels. Sovereign bonds are by nature country specific. In addition, for a variety of reasons, they play a central role in the functioning of financial markets. Government bonds are the predominant form of collateral or underlying assets used for repurchase agreements and collateralised transactions, and are also used as benchmarks for a variety of reference indexes. Moreover, since banks exhibit a degree of home bias in their portfolio holdings, and tend to hold a large share of securities perceived as safe, they normally hold, in most countries, significant amounts of public debt. As a result, counterparties' ability to trade cross-border in the interbank market is correlated with the perceived riskiness of their sovereign.<sup>54</sup>

<sup>54</sup> The issue of the linkages between banks and sovereign funding is comprehensively addressed in "The impact of sovereign credit risk on bank funding conditions", *CGFS Papers*, No 43, BIS, July 2011.

One indicator of the growing segmentation of the money market is provided by the development of TARGET2 balances within the euro area during the financial crisis.<sup>55</sup>

The above developments are also reflected in the divergence between secured and unsecured money markets. As the annual Euro Money Market Survey shows, wholesale interbank unsecured lending activity has declined during the financial crisis.<sup>56</sup> By contrast, the secured euro money market has been more resilient. The collateralised nature of repo transactions (which implies that repo transactions are backed by a double guarantee, that of the counterparty and that of the underlying asset) makes them more resilient to credit risk concerns compared to unsecured transactions, and this has an indirect positive effect on their liquidity. Borrowing in the secured market recovered in 2010 to levels similar to those that prevailed just before the start of the financial turmoil in 2007, while turnover volumes in the unsecured market declined continuously between 2007 and 2010, with only a slight increase in 2011 (see also Chart A in Box 2).

In addition, the bi-annual International Capital Market Association (ICMA) European repo

market survey shows that total European repo volumes climbed to €6.2 trillion by June 2011, substantially higher than the €4.6 trillion that prevailed in December 2008 after the collapse of Lehman Brothers.<sup>57</sup> The tensions in the unsecured money market are also observed in the money market price indicator, as the standard deviation of rates across shorter maturities increased substantially in the second half of 2011 (Chart 52). The dispersion between jurisdictions, measured as monthly average, rose to the highest level since the adoption of the euro in December 2011, before falling significantly.

### SOVEREIGN BOND MARKETS

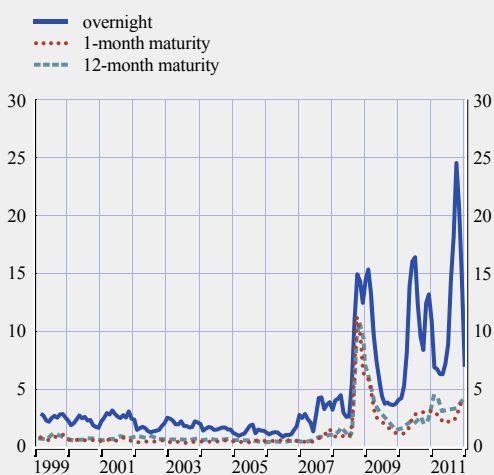
With regard to sovereign bonds, it is possible to distinguish at least three ways in which they affect monetary policy transmission. First, there is the price channel. As a “risk-free” rate, sovereign bonds have traditionally served as a benchmark, often a floor, for the interest rates charged by banks on loans and on other financial contracts and securities of corresponding maturity. For example, holdings of government bonds as liquid assets are given rather favourable treatment in the liquidity risk regulation proposed as part of Basel III. Second, there is the balance sheet channel. Changes in prices of government bonds affect the value of securities held in bank’s trading books. Third, there is the liquidity channel. Government bonds have become the prime source of collateral in interbank lending.

In the early years of monetary union the spreads between sovereign bonds were small to non-existent. However, with the significant divergence of fiscal paths, sovereign risk turned out to have been significantly under-priced.

Since early 2010, sovereign bond markets were characterised by a significant rise in risk aversion

**Chart 52 Cross-country standard deviation of average unsecured interbank lending rates across euro area countries**

(61-day moving average; basis points)



Sources: EBF and ECB calculations.

55 TARGET2 balances of national central banks in the euro area are discussed in detail in Box 4 of the ECB Monthly Bulletin, October 2011.

56 See *Euro Money Market Survey*, ECB, September 2011.

57 See *European repo market survey*, No 21, ICMA, September 2011. The survey presents a snapshot in time, whereby 55 financial groups were asked for the value of the cash side of repo and reverse repo contracts still outstanding on 8 June 2011.

and increased heterogeneity of developments across countries. At the same time, flight-to-safety and flight-to-liquidity flows increased (Chart 53), while the sovereign risk of some countries may have become somewhat overpriced. During the second half of 2011, contagion effects in larger euro area sovereigns gathered strength. This contagion and the negative feedback loop between public finances and the financial sector were also highlighted as one of the key risks to euro area financial stability in the latest Financial Stability Review (December 2011).

A reversal of financial integration can also be seen in the declining trend in cross-border use of collateral in Eurosystem operations that has been observed over the past three to four years (Chart 54). Indeed, in the wake of the financial turmoil, the cross-border use declined, after followed years of continuous increase. By early 2012, the use of intra-euro area cross-border use of marketable assets as collateral had fallen to around 20%, the lowest share since 2005. This can be attributed to an increasing home bias of

investors and, to a lesser extent, partly also to an increase in the use of self-originated marketable assets as collateral. Overall, the decline indicates how fragile the integration of financial markets in the euro area remains.

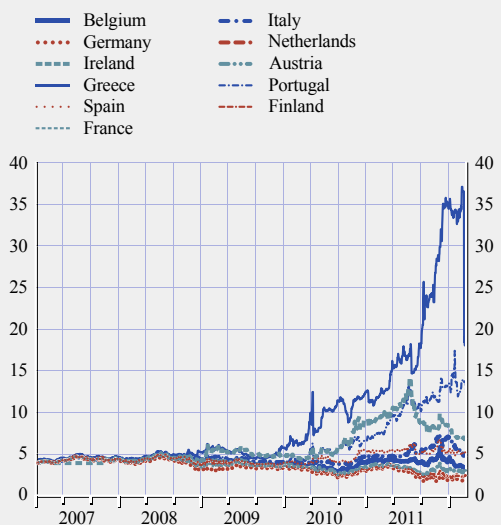
Generally, however, a broad base of collateral, as accepted by the Eurosystem, can serve as an automatic crisis-mitigation tool, countering the effects of impaired the impairment in financial integration.

### COVERED BOND MARKETS

The most important privately issued bond segment in the euro area capital markets is the covered bonds segment. Covered bonds represent a central funding source for euro area banks and, in contrast to some other currency areas, banks are the main source of credit in the euro area. As a result, conditions in covered bond markets are an important determinant of banks' ability to extend credit to their customers.

Chart 53 Ten-year sovereign bond yields

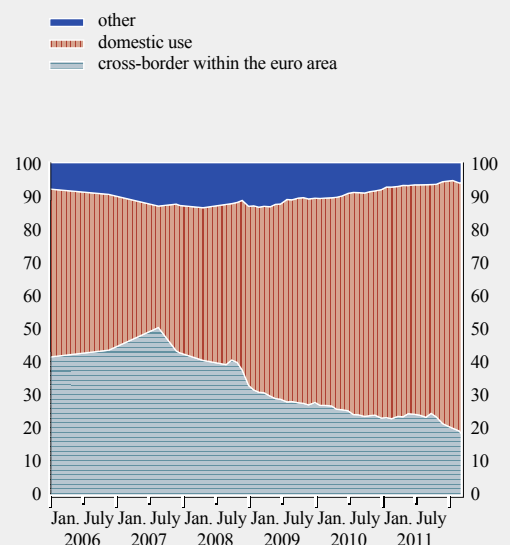
(percentages per annum)



Sources: Bloomberg, ECB.

Chart 54 Cross-border activity in the posting of Eurosystem collateral

(percentage shares of total collateral)

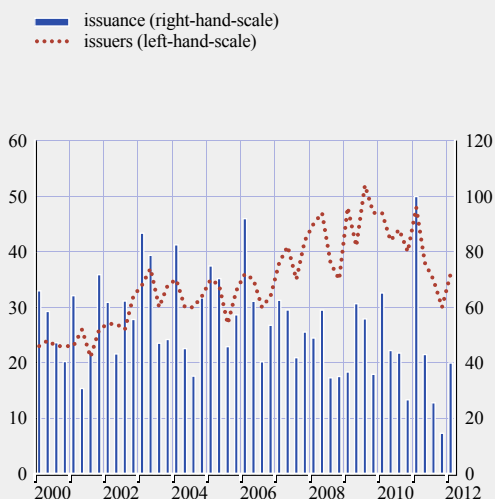


Source: ECB.

Note: The share 'other' which is neither allocated to domestic nor to euro area collateral includes issuances from other EEA, G10 and supra-national entities.

Chart 55 Covered bond issuance in the euro area and quarterly number of issuers

(EUR billions and absolute number of issuers)



Source: Dealogic.

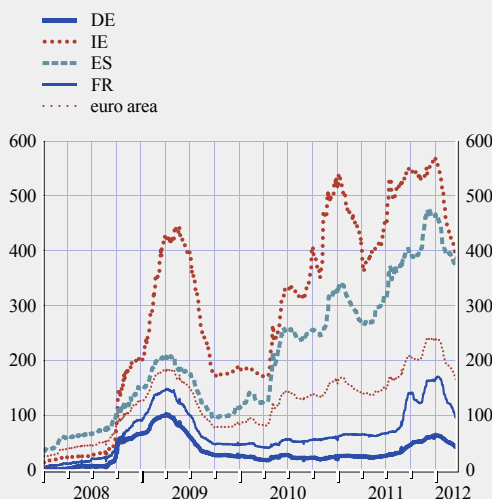
Over the last ten years covered bonds have developed from a funding source for mortgages and public infrastructure projects used in only a few euro area countries to an important source of term funding for banks in many euro area countries. This development is the result of the introduction of specific covered bond legislation in a number of jurisdictions. Issuer participation has increased to between 40 and 50 issuers from euro area countries in this market each quarter (Chart 55).

In the months following the bankruptcy of Lehman Brothers, and particularly in the first quarter of 2009, issuance activity was very low. The ECB decided to introduce the CBPP to enhance banks' access to this source of funding, as further discussed below.<sup>58</sup>

Although investor uncertainty about future developments continued to prevail, market conditions subsequently improved and issuance of covered bonds reached record highs, exceeding €95 billion in the first quarter of 2011. The issuance was broadly distributed across countries, and included larger deal sizes and, to some extent, longer maturities. However, in the second half of 2011 issuance again decreased sharply,

Chart 56 Covered bond spreads against interest rate swaps

(basis points, daily data)



Source: Dealogic.

mainly due to renewed tension in sovereign debt markets, largely owing to the fact that the price of government debt acts as a floor for refinancing costs across a jurisdiction, including the prices of covered bonds. In addition, primary market activity was adversely influenced by high price volatility in secondary markets.<sup>59</sup>

In terms of issuance costs, covered bond spreads widened up to mid-December 2011 for issuers in all jurisdictions in line with developments in the respective underlying sovereign bond markets (Chart 56).<sup>60</sup> Price differentiation, on both

<sup>58</sup> Participation in the market by both issuers and investors has also benefited from new liquidity requirements in Basel III, which encouraged banks to obtain more stable longer-term funding, and from considerations about potential loss absorbency of unsecured bank bonds, as can be seen, for example, in the working document of the European Commission's DG Internal Market and Services on the technical details of a possible EU framework for bank recovery and resolution of 6 January 2011, which was seen by some market participants as enhancing the relative attractiveness of secured instruments like covered bonds. See also ECB Occasional Paper No 122.

<sup>59</sup> See also "Euro area markets for banks' long-term debt financing instruments: recent development, state of integration and implications for monetary policy transmission", *Monthly Bulletin*, ECB, November 2011.

<sup>60</sup> The covered bond spread is the spread between the yield of a covered bond and the rate quoted for a euro interest rate swap contract with a similar maturity.

primary and secondary markets, was observed not only across groups of issuers from different jurisdictions, but also across individual issuers within each country. As illustrated below, the ECB reacted to this situation with the launch of another CBPP. With the start in December, covered bond spreads narrowed.

#### 4 THE OPERATIONAL FRAMEWORK DURING THE FINANCIAL CRISIS

As mentioned above, many significant adaptations were made to the operational framework in order to cope with the challenges of the crisis. We shall now discuss them in more detail.

Focusing on the general approach, it should first be noted that, in the last three years, the role played by the operational framework has temporarily expanded relative to the preceding period. In the course of the crisis, liquidity

management acquired an additional role (distinct from the one performed in normal times): supporting the functioning of the money market. This involved supplying additional amounts of liquidity to ensure the functioning of the market in spite of high levels of risk aversion and liquidity preference. Among other things, this implied that daily interbank rates diverged significantly from MRO rates, usually downward. The large liquidity injections resulted in large amounts of funds being deposited in the Eurosystem deposit facility.

The developments described in the preceding section were damaging to, in particular, the functioning and the integration of money, covered bond and sovereign bond markets, with spillovers across countries and into the banking sector (see the evidence reported in Box 1). Due to the importance of these market segments, the Eurosystem has targeted a number of specific actions at them during the crisis.

#### Box 1

##### VOLATILITY AND CONTAGION IN EURO AREA FINANCIAL MARKETS DURING THE CRISIS AND THE ROLE OF THE NON-STANDARD MEASURES INTRODUCED BY THE EUROSISTEM

*Since 2008, and particularly since the start of the sovereign debt crisis in mid-2010 and its aggravation in mid-2011, euro area financial markets have shown signs of malfunctioning, which has affected both the pricing mechanisms and the normal flow of funds between lenders and borrowers. In this box we present evidence of some of these phenomena. In particular, we show how tensions in sovereign debt markets have spread across countries to an unprecedented extent since May 2010, how instability spilled over from these markets into the banking sector, and vice versa, and what patterns of volatility have been observed in equity markets during the crisis. Finally, we show that the non-standard monetary policy measures introduced by the Eurosystem helped contain the contagion among financial market segments, thus supporting euro area financial integration.*

##### Contagion across sovereign bond markets

Volatility in euro area bond markets was very high throughout 2011. As market liquidity conditions deteriorated, risk aversion increased substantially. Extreme flight-to-quality effects pushed up spreads between yields on some euro area government bonds and those on German

government bonds to very high levels, while flight-to-safety flows resulted in German long-term bond yields falling to historical lows, as discussed in Chapter 1 of this report.

The strained and dysfunctional nature of euro area sovereign debt markets is well illustrated by the cross-country correlation of CDS premia. CDS prices capture default risk and are less affected than sovereign bond yield spreads by other factors not directly linked to default risk, such as flight-to-safety effects. Chart A shows the correlation between the 5-year CDS premia of selected euro area countries and those of Greece. Until early 2009 there was a relatively low degree of co-movement, as one would normally expect. At the same time there were significant differences between the various countries in the level of their perceived riskiness.

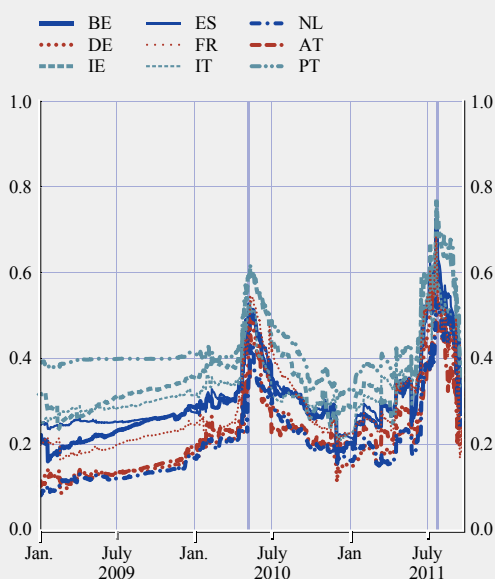
The intensification of cross-country contagion in the months preceding the establishment of the Securities Markets Programme (SMP) in

May 2010 is illustrated by the rapid increase in the correlations between Greek CDS and those of other countries, and in the narrowing of the cross-country differences. Conversely, the observed widening of the range following the ECB's announcement regarding the establishment of the SMP suggests that investors returned to pricing country-specific risks. The degree of correlation between 5-year CDS premia in euro area countries vis-à-vis Greek CDS premia declined strongly following the ECB's announcement in August 2011 of new interventions under the SMP, and fell again in early December 2011 against rising expectations of a resolution of the European debt crisis at the EU summit of 8-9 December. However, in contrast with developments in May 2010, there was no significant return to cross-country differentiation in terms of sovereign risk around the end of 2011, suggesting that other factors of uncertainty besides country-specific risks, such as concerns regarding the institutional framework of EMU, were driving developments in bond markets in the final part of last year.

### Spillovers from the bond market to the banking sector

The banking sectors of most major euro area countries have been suffering as a result of their exposure to sovereign risk. These risks were reflected in higher CDS premia for euro area banks, as well as for governments. The correlation between CDS premia for banks and sovereign CDS premia provides a good illustration of the degree of commonality between the tensions in the sovereign debt market and those in the banking sector. On one hand, the direct exposure of the banks to sovereign debt holdings implies a direct transfer of risk from the sovereign to the banks, while, on the other hand, the costs associated with the resolution of a banking crisis usually

Chart A Correlation between selected five-year sovereign CDS premia and Greek CDS premia



Sources: Thomson Reuters and ECB calculations.

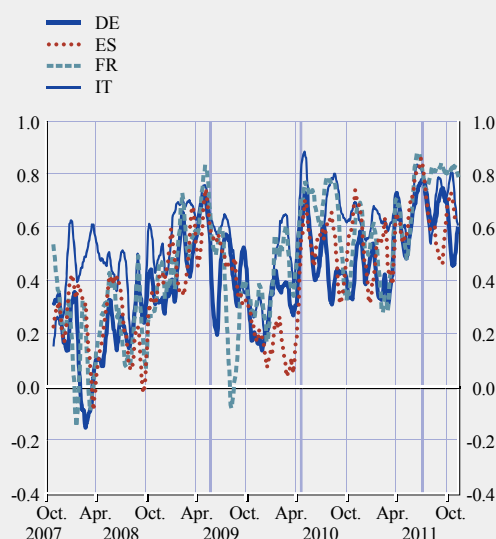
Note: The two vertical lines indicate the dates of two ECB announcements regarding purchases under the SMP (10 May 2010 and 7 August 2011).



imply a transfer of risk from the banks to the sovereign.<sup>1</sup>

As shown in Chart B, the degree of correlation for most countries rose steadily after the bankruptcy of Lehman Brothers in September 2008 as financial market conditions worsened. After June 2009, when the ECB announced purchases of euro-denominated covered bonds issued in the euro area, thus easing funding conditions for euro area banks, correlations temporarily declined, but this pattern was reversed once again as concerns surrounding the fiscal position of Greece became apparent at the end of 2009. When the SMP was established in May 2010, correlations moderated somewhat. However, during the summer of 2011 there was a sharp increase in correlation between these two types of CDS premium. Since the announcement of further purchases under the SMP on 7 August 2011, the degree of correlation has declined for all euro area countries.

**Chart B Correlation between sovereign CDS premia and CDS premia for banks**



Sources: Markit and ECB calculations.  
Notes: The three vertical lines indicate the dates of three ECB announcements regarding purchases under CBPP1 (9 June 2009) and under the SMP (10 May 2010 and 7 August 2011). The correlation is calculated as a 20-day moving average of the correlation obtained from a bivariate GARCH model.

### Stock market volatility developments

Stock markets were weaker in the euro area than in the United States in 2011. This can partly be explained by the fact that in the euro area, in contrast to the United States, 2011 saw declines in both long and short-term expectations as regards corporate earnings. Moreover, uncertainty regarding future macroeconomic and financial market developments discouraged market participants from buying in certain markets. Uncertainty regarding future stock market developments, as measured by implied volatility, was higher in the euro area than in the United States in 2011, and increasingly so in the second half of the year (see Chart C, in comparison with Chart D). The difference between the two economic areas is even more pronounced when looking at the implied probability distribution derived from expected sovereign bond returns, suggesting that, for assets in the euro area, investors are pricing in risks stemming from uncertainty regarding the resolution of the euro area sovereign debt crisis.

### Summing up

The risks associated with the spread of financial contagion from Greece, and subsequently from other countries, led to unusual volatility and contagion effects in euro area financial markets during the course of 2011. Liquidity conditions deteriorated rapidly and, as a result, several segments of the euro area financial markets, notably the money markets, became fragmented, especially across

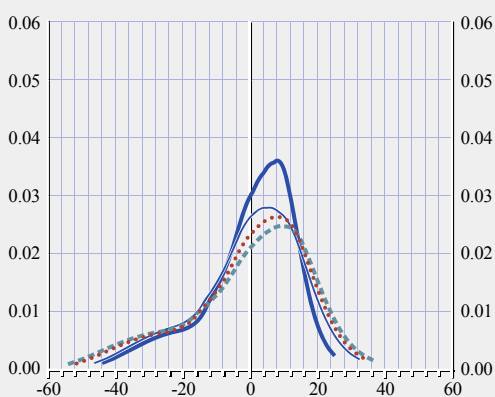
<sup>1</sup> An analysis of expected CDS shortfalls in the euro area was published in the ECB's Financial Stability Review finds empirical support for causality operating in both directions. See the box entitled "How do bank risk and sovereign risk interact? A CDS market-based analysis" in the December 2011 Financial Stability Review.

**Chart C Implied probability distribution function for the Dow Jones EURO STOXX 50 index**

(probability distribution for selected dates)

x-axis: expected percentage change against the index future price level

— 16/03/2011  
 ..... 09/11/2011  
 - - - 10/08/2011  
 — 16/12/2011



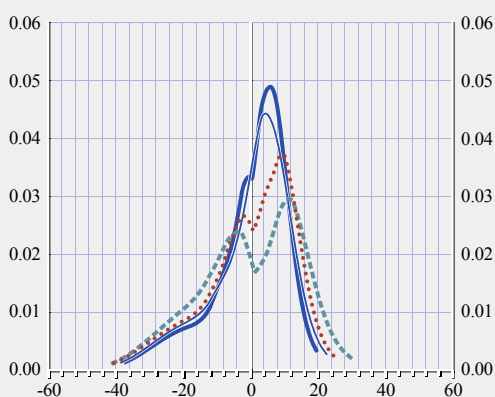
Sources: Bloomberg and ECB calculations.

**Chart D Implied probability distribution function for the Standard & Poor's 500 index**

(probability distribution for selected dates)

x-axis: expected percentage change against the index future price level

— 16/03/2011  
 ..... 09/11/2011  
 - - - 10/08/2011  
 — 16/12/2011



Sources: Bloomberg and ECB calculations.

countries. The evidence shows that, in this context, the non-standard monetary policy measures introduced by the ECB helped limit the contagion between financial market segments and adverse spillovers to the real economy, thereby also supporting euro area financial integration.

In response to the segmentation of interbank markets, the ECB has adopted several measures which temporarily complement impaired intermediation in the interbank market by increasing intermediation via the central bank. Through this intermediation function the Eurosystem alleviates the effects of impaired financial integration.

The four main measures which increased central bank intermediation are: first, the FRFA policy; second, LTROs with 6-month, 12-month and 36-month maturity; third, foreign currency operations; and fourth, a further broadening of the collateral framework.

The malfunctioning of sovereign markets was addressed by the Securities Markets Programme (SMP), adopted in May 2010, which consists of outright purchases by the central bank in specific euro area public debt markets. The objective

of the SMP is to contribute to restoring the functioning of the monetary policy transmission mechanism, which has been impaired by the distressed condition of certain sovereign bond markets. A well functioning monetary policy transmission mechanism is necessary for the ECB to achieve its objective of price stability over the medium term.

The adjustments that were made, as described in more detail below, were largely *within* the existing operational framework and did not change its overall logic, and were not changes *to* the framework itself. This even applies to outright purchases which, on the one hand, constitute a new instrument, while, on the other hand, this instrument is consistent with the existing operational framework. All in all, the operational framework has proven to be remarkably robust in the face of unprecedented challenges.

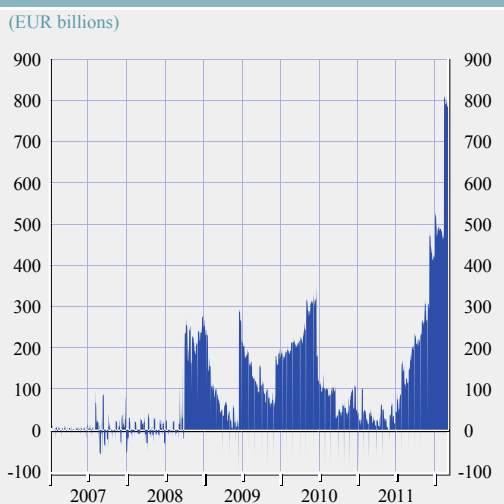
## FIXED-RATE FULL ALLOTMENT

As described above, following the collapse of Lehman Brothers, perceived counterparty risk and liquidity risk brought interbank lending to a virtual standstill. In response to this, the ECB decided in October 2008 that the weekly MROs and all LTROs would be carried out through a FRFA tender procedure.

Under the FRFA procedure, counterparties have their bids for central bank liquidity met in full, subject to the provision of adequate collateral. Thus, the FRFA procedure almost completely removes liquidity risk for individual banks and for the banking system as a whole. By almost eliminating liquidity risk and providing ample central bank refinancing, the procedure also improves refinancing conditions in general.

Chart 57 documents the evolution of excess liquidity, i.e. the liquidity provided to banks in excess of their needs as derived from autonomous factors and reserve requirements. Until August 2007 excess liquidity remained very close to zero. At the start of the tensions in money markets in August 2007, the ECB carried out some large-scale injections of liquidity.

Chart 57 Excess liquidity since 2007



Source: ECB.

In addition, a developing preference of banks to fulfil reserve requirements early in the maintenance period was satisfied by adjusting MRO allotment amounts, without increasing liquidity supply over the maintenance period. Excess liquidity thus remained at zero on average.

With the introduction of the FRFA procedure, liquidity became demand driven and excess liquidity both increased substantially and became highly volatile. However, excess liquidity implies additional costs for banks, as more liquidity is demanded and paid for than needed. The amount of excess liquidity can therefore serve as an indicator both of stress in the interbank market and of the degree to which the Eurosystem is compensating for insufficient intermediation in the interbank market.

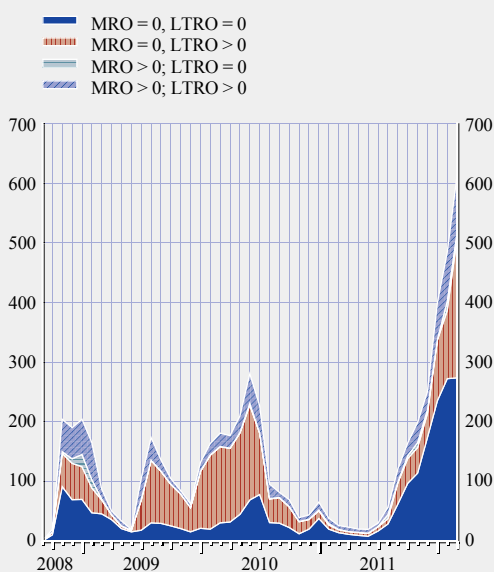
Chart 58 documents the recourse to the deposit facility, distinguishing four groups of banks: those not participating in refinancing operations, those participating in MROs only, those participating in LTROs only, and those participating in both MROs and LTROs.

Following the introduction of the FRFA procedure, about a third to a half of the counterparties which deposited liquidity in the deposit facility also obtained liquidity in refinancing operations at the same time. This can be a costly form of liquidity insurance. However, if counterparties have outstanding funds only in the LTROs, they cannot reduce their funds until the LTRO matures, even if they no longer need the liquidity. Starting with the introduction of the 12-month tender, which attracted bids totalling €442 billion in June 2009, a majority of counterparties with recourse to the deposit facility held such liquidity insurance.

From the middle of 2010 recourse to the deposit facility fell and remained relatively low until the middle of 2011, when it started to rise again. In this most recent episode, recourse to the deposit facility was mainly by counterparties not accessing central bank refinancing, pointing to

**Chart 58 Deposit facility recourse by participation in refinancing operations**

(EUR billions)



Source: ECB.  
Note: Data by banking group.

significant segmentation in the money market, which the Eurosystem is countering through its intermediation.

Thus, the FRFA policy can fulfil at least two functions when intermediation through the money market is impaired. First, it can provide a form of liquidity insurance. Second, it can provide central bank intermediation to mitigate the implications of money market segmentation.

### LONGER-TERM REFINANCING OPERATIONS

The FRFA policy has been complemented by LTROs with maturities greater than 3-months, in particular 6-month, 12-month and 36-month LTROs.<sup>61</sup> These operations further reduced funding liquidity risk in the banking system over a longer horizon, thereby amplifying the positive effects of the FRFA policy.

As can be seen in Chart 57, excess liquidity increased sharply in the summer of 2009, after

the first 12-month LTRO. Since the start of the financial turmoil, the Eurosystem has conducted four operations of approximately 12-month maturity. The Eurosystem conducted two LTROs with 36-month maturity in December 2011 and February 2012, but included an option to repay after the first 12 months. €489 billion was allotted in the first of these 36-month operations in December 2011, while €530 billion was allotted in the second in February 2012.

These temporary operations imply that the bulk of liquidity to the banking system is provided through LTROs (above one month). By contrast, before the crisis, the bulk of liquidity was provided in the weekly MROs.

### THE COLLATERAL FRAMEWORK

A broad collateral framework, like the one adopted by the Eurosystem, can serve as an automatic crisis mitigation tool. This role has been further enhanced with targeted adjustments.

Following the collapse of Lehman Brothers in September 2008, in order to facilitate the FRFA policy and further increase the already very broad range of eligible assets on banks' balance sheets, the Eurosystem decided to temporarily expand the list of collateral. The list was expanded to include bank bonds traded on accepted non-regulated markets, subordinated debt instruments protected by an acceptable guarantee, securities (except ABSs) with a credit rating of at least BBB-, as opposed to the previously prescribed A-, and collateral denominated in other currencies (JPY, GBP and USD), provided they fulfilled all the usual eligibility criteria. As of 1 January 2011, the temporary measure to allow lower-rated assets as collateral, subject to appropriate haircuts to mitigate risk, was made permanent. Furthermore, in December 2011

<sup>61</sup> The focus here is on operations of exceptionally long maturity. However, in the course of the crisis the Eurosystem also introduced operations with a maturity of one maintenance period.

the Governing Council decided to increase the availability of collateral by, first, reducing the rating threshold for ABSs that fulfil certain conditions over and above the existing provisions and, second, allowing NCBs, as a temporary solution, to accept as collateral additional and performing credit claims (i.e. bank loans) that satisfy specific eligibility criteria.

The benefits of a broad collateral framework are also visible from the fact that the financial crisis led other major central banks to significantly broaden their collateral frameworks. By contrast, the Eurosystem only needed relatively small adjustments.

It should be emphasised, however, that the collateral framework remains flexible. As part of its prudent risk management, the ECB has also tightened some requirements in the course of the crisis. For instance, rating requirements for ABSs have been tightened, and now require at least two AAA ratings from different ratings agencies at issuance, except in the case of ABSs fulfilling certain additional conditions as mentioned above.<sup>62</sup>

#### RESERVE REQUIREMENTS

With effect from the maintenance period beginning in January 2012, the ECB reduced the reserve requirement from 2% to 1%. Under the conditions prevailing at the time, with large amounts of excess liquidity and segmented money markets, there was less need of reserve requirements to stabilise money market rates. Lower reserve requirements reduce the need for collateral and support money market activity. Lowering the requirement is complementary to the broadening of the set of eligible collateral. Furthermore, lower reserve requirements reduce highly remunerated liquidity buffers and increase banks' exposure to the opportunity costs of the standing facilities, thereby increasing incentives to trade in money markets.

#### FOREIGN CURRENCY OPERATIONS

Reduced financial integration has also been visible in foreign currency funding markets. During the crisis, European banks have faced challenges in accessing US dollar liquidity; lately this has been amid the concerns about the fiscal difficulties confronting some euro area countries and the condition of some European banks. US banks and investors (mainly US money market funds) have reduced their exposures to European financial institutions. This has resulted in a reduced access to US dollar liquidity for European banks.<sup>63</sup> In response to this, the international cooperation of the major central banks has been crucial. In particular, the swap arrangements between the Federal Reserve System and the ECB have allowed the Eurosystem to provide US dollar liquidity directly to its counterparties through tender operations aimed at lessening the consequences of impaired money markets in foreign currency. There was large recourse to these operations following the collapse of Lehman Brothers, but demand petered out during the course of 2010. Demand rose again at the end of 2011 after major central banks agreed on a price reduction on the regular US dollar operations in order to ease ongoing strains in financial markets. As a precautionary measure, on 30 November 2011 the ECB, in coordination with the Bank of England, the Bank of Japan, the Federal Reserve and the Swiss National Bank, decided to establish temporary bilateral liquidity swap arrangements so that non-domestic liquidity can be provided in each jurisdiction in any of their currencies should market conditions so warrant.

#### SECURITIES MARKETS PROGRAMME

As discussed above, due to the tensions in securities markets, the impairment of the monetary policy transmission mechanism in the euro area

<sup>62</sup> See Decision ECB/2011/25.

<sup>63</sup> See also *Financial Stability Review*, ECB, December 2011.

went beyond the interbank market. This has led the Eurosystem to adopt outright purchases of securities as a new, non-standard tool in the implementation of its monetary policy.

The SMP was a response to malfunctions in the bond markets of some euro area jurisdictions, which became more acute in May 2010. The programme is aimed at maintaining a functioning monetary policy transmission mechanism by addressing malfunctions in securities markets. Under the SMP, public and private debt securities are considered eligible for purchase. The scope of the interventions is determined and frequently reviewed by the Governing Council of the ECB. At the end of 2011, the cumulated amount of purchases stood at about €211 billion.

The SMP must be clearly distinguished from a policy of quantitative easing. Whilst the objective of the SMP is to maintain the transmission mechanism of monetary policy, quantitative easing is aimed at injecting additional central bank liquidity in order to stimulate the economy. As a result, quantitative easing entails large and precise quantitative targets. By contrast, the size of SMP purchases is determined by the aim of maintaining monetary policy transmission in segments where and at times when market functioning seems most difficult. The liquidity injected through SMP purchases is re-absorbed on a weekly basis so as to neutralise the programme's liquidity impact.

### COVERED BOND PURCHASE PROGRAMMES

In response to the developments in covered bond markets outlined above, the first covered bond purchase programme had four objectives: first, reducing money market term rates; second, easing funding conditions for credit institutions and enterprises; third, encouraging credit institutions to maintain or expand their lending; and, fourth, improving market liquidity in important segments of private debt securities markets.

CBPP1 was announced in May 2009 and €60 billion of covered bonds were purchased between the beginning of July 2009 and the end of June 2010. The programme has been very successful in restarting activity in primary covered bond markets.<sup>64</sup> With the recent intensification of the sovereign debt crisis, however, covered bond markets have again come under significant pressure.

The Governing Council therefore decided at the beginning of October 2011 to announce a second CBPP (CBPP2) under which €40 billion of covered bonds will be purchased between the beginning of November 2011 and the end of October 2012. The programme will operate in both the primary and the secondary markets. The purchases, which are conducted by the Eurosystem, are subject to rules on, for example, minimum outstanding amounts, rating thresholds, maximum maturity, legal safeguards, and underlying assets. CBPP2 shares with CBPP1 the objectives of easing funding conditions and encouraging institutions to maintain or expand lending to their clients, thereby contributing to the Eurosystem's role in supporting the functioning of financial markets.

### 5 LESSONS FOR THE POST-CRISIS OPERATIONAL FRAMEWORK

The operational framework has proven effective in mitigating some of the effects of the deterioration in financial integration. It should be stressed, however, that the framework does have its limits; it can neither address the root causes of the deterioration nor completely offset its effects. In many cases, in particular in relation to the sovereign debt crisis, these causes depend on actions that fall under the responsibility of national governments and European institutions.

<sup>64</sup> See "The Impact of the Eurosystem's covered bond purchase programme on the primary and secondary markets", *Occasional Paper Series*, No 122, ECB, January 2011.

At the same time, once such causes have been removed, a gradual phasing-out of the non-standard measures will be possible, and the changes introduced in the operational framework during the crisis will no longer be necessary. A phasing-out is even desirable once market conditions allow it, as otherwise some non-standard measures could themselves become a source of market distortions. Meanwhile, the experience raises some questions and potentially provides lessons regarding the future design of the operational framework, both in normal times and in times of crisis.

#### **GROWING IMPORTANCE OF SECURED MARKETS**

As discussed above and in Box 2, the crisis led to an increased role for secured repo transactions, partially substituting the short-term unsecured market. Consequently, there has been some divergence in the development of secured and unsecured money markets. Going forward, these trends could affect monetary policy implementation. In its steering of short-term money market rates, the central bank may need to give greater prominence to secured overnight rates. The decreased activity in unsecured lending could lead to more volatility in this market, particularly under stressed conditions, and thus make the steering of unsecured interest rates more difficult and even inappropriate in certain conditions. As shown in Chart 52, cross-country standard deviations of overnight rates have been large and volatile during the crisis. The two developments dictate that central banks should give greater prominence to secured money market rates when measuring, monitoring and setting market conditions. The implications from both an operational and a macroeconomic perspective of giving greater emphasis to secured rates as operational targets for monetary policy deserve a fuller exploration. It should be noted, however, that the ECB has always paid attention to a range of very short-term interest rates, not only unsecured rates such as the EONIA.

#### **BROAD VERSUS NARROW FRAMEWORK**

During the crisis, the Eurosystem has successfully complemented the intermediary function of banks when needed, thanks to its interaction with a large number of counterparties, the broad range of collateral it accepts and the large size of its operations. In the euro area there are more than 6,000 credit institutions, of which currently more than 2,000 are eligible to participate in Eurosystem refinancing operations. Furthermore, these counterparties range from universal and multinational banks to smaller domestic savings banks with very different balance sheets and business models. In addition, a broad collateral framework has proved to be an effective liquidity crisis mitigation tool. For instance, it has made it easier to address the growing use of domestic collateral, the nature of which may differ across jurisdictions.

A question remains, however, regarding the optimal breadth of the collateral framework in post-crisis conditions. A broad approach to collateral may increase liquidation risk for the central bank in the event of counterparty default, in particular for collateral for which markets are not functioning well. Furthermore, making a broad set of collateral eligible for Eurosystem credit operations may lead to preferential treatment of illiquid assets relative to liquid ones, which could raise the price of illiquid assets and thereby lead to oversupply. Both risks are, however, mitigated by risk control measures.

Furthermore, a broad framework may encourage over-reliance by banks, *ex ante*, on central bank re-financing. Clearly, a narrow framework does not preclude the possibility of subsequent broadening in response to need, although widening the framework during a crisis, without allowing sufficient time for market participants to prepare, may pose its own challenges.

The breadth of the collateral framework also has an important international dimension, which

can have a financial integration aspect. Large internationally active banks have recourse to central bank refinancing in various jurisdictions and currencies. The Eurosystem, with its relatively broad operational framework, may thus offer a larger crisis mitigation role, but also attract collateral of a lower quality than central banks operating with a narrower framework.

### SIZE OF THE LIQUIDITY DEFICIT

As recalled above, since its inception the Eurosystem has implemented its monetary policy in a context where the banking system as a whole is in a liquidity deficit with the central bank. This means that, without recourse to Eurosystem refinancing operations, the banking system would be unable to cover the liquidity needs resulting from autonomous factors and reserve requirements.

The evolution of the most important balance sheet items is shown in Chart 59. While liquidity injected through the SMP is sterilised through liquidity-absorbing operations on a weekly basis, this is not the case for, for instance, the CBPPs. Consequently, with CBPPs the liquidity deficit falls because the cash injected through the CBPPs reduces the need for banks to participate in

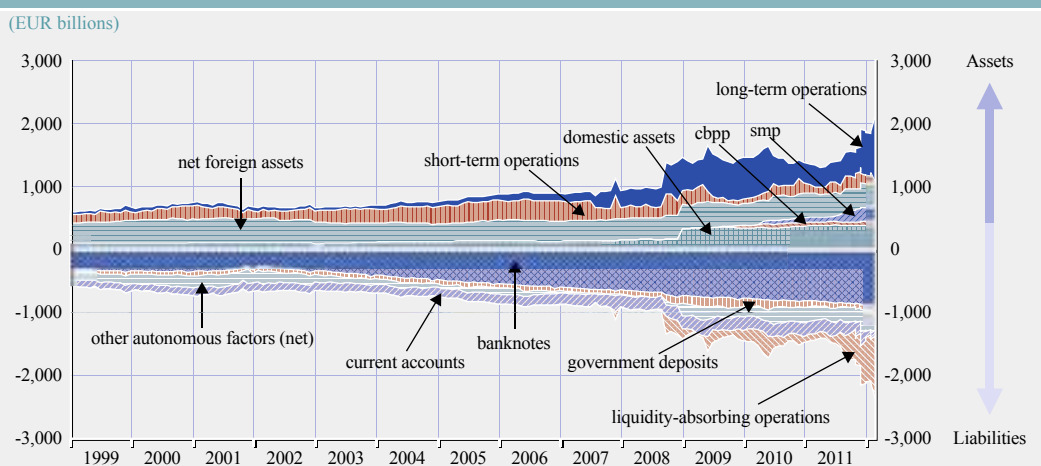
refinancing operations. Increases in central bank assets unrelated to monetary policy can also reduce the liquidity deficit. This happens, in particular, in the case of emergency liquidity assistance. The same is true, for instance, if governments reduce their deposits with the Eurosystem or other liabilities of the Eurosystem are reduced.

This raises the question of whether in the future the Eurosystem may implement its monetary policy with a smaller liquidity deficit or even with a liquidity surplus, which may call for some amendments to the operational framework. Alternatively, the Eurosystem may consider ways of restoring a larger liquidity deficit.

### LIQUIDITY RISK REGULATION

Another development that may affect the operational framework is liquidity risk regulation. The liquidity risk standards of Basel III are aimed at ensuring that banks rely on their own liquidity buffers and raise stable funding, thus reducing reliance on short-term funding and on central banks as liquidity providers. At the same time, in the euro area, the banking system as a whole is, as mentioned above, in liquidity deficit vis-à-vis the central bank. Thus some degree of structural

Chart 59 Evolution of major Eurosystem balance sheet items



Source: ECB.



reliance of the banking system on liquidity provision from the central bank is inevitable.

The interaction between liquidity risk regulation and the operational framework is complex. It is likely that the impact of liquidity risk regulation on the way banks participate in central bank operations will take the form of a greater recourse to central bank refinancing using as collateral assets which do not qualify as high-quality liquid assets under Basel III. This potential impact stems from the fact that the Eurosystem's definition of eligible assets is broader than the regulatory definition of

liquid assets. This raises the broader question of what the optimal degree of interaction between liquidity risk regulation and the operational framework would be, and how closely the two baskets of eligible instruments should overlap.

As intended by the new liquidity rules in Basel III, a potential impact on financial markets is reduced reliance on short-term unsecured wholesale funding, which may diminish activity at the short end of the money market. This would also shift reliance from unsecured markets to secured markets, reinforcing the development reported above and in Box 2.

## Box 2

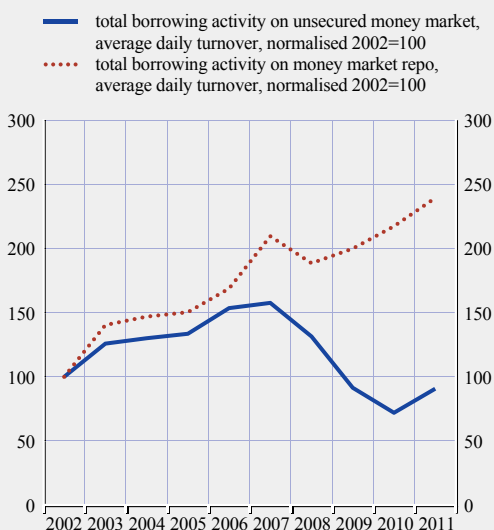
### THE INCREASED SEGMENTATION OF THE EURO AREA REPO MARKETS DURING THE SOVEREIGN DEBT CRISIS

Following the onset of the financial crisis, some segments of the money market developed differently to others. Several indicators show that overall the secured/repo market fared much better during the financial crisis than other segments of the interbank market, in particular the unsecured market. This result is not surprising given the fact that the collateralised nature of repo transactions makes them more resilient to heightened credit risk concerns than unsecured transactions. Chart A shows that, as counterparty and liquidity risks significantly increased, recourse was indeed made to the secured money market as an alternative to the unsecured market.

The nature of segmentation in the euro money market has, however, shifted over time. Initially, the segmentation was mainly visible for individual banks, with name-specific credit risk concerns being the key driver for the worsening of funding conditions (both in terms of pricing and overall market access). In the more recent phase of the crisis, the fiscal positions of euro area countries have come into focus and segmentation seems to have run along national lines. This implies that the banking systems of certain euro area countries have already experienced or may experience significant difficulties in accessing market funding. In particular, since the sovereign debt crisis started to affect banking systems, there has been a significant increase in price differentiation in repo markets, as market participants increasingly took into account "correlation risks" in repo trades (e.g. the price for a bank "repoing" a government bond of its own jurisdiction increasingly differed from the price for the same bank "repoing", for example, a German government bond).

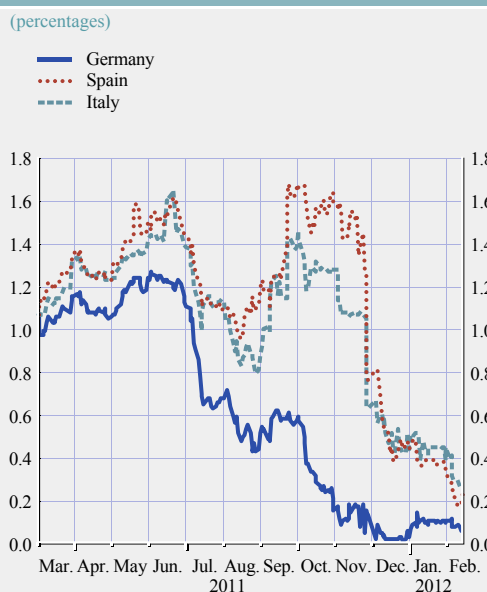
Chart B shows the developments of 3-month indicative market repo rates on German, Italian and Spanish government bonds since March 2011. Initially, from March to June rates moved more or less in parallel, albeit at different levels. In July, repo rates on Italian and Spanish bonds increased, moving away from repo rates on German bonds. This means that the price of funds obtained against Spanish and Italian collateral also increased, indicating the ongoing contagion to these countries during the intensification of the crisis. It is also worth noting that for certain counterparty/collateral

**Chart A Borrowing activity in the euro area secured and unsecured markets**



Source: ECB's Euro Money Market Survey.

**Chart B 3-month indicative market repo rates on German, Italian and Spanish government bonds**



Sources: Bloomberg and Commerzbank.

combinations the effects went beyond mere pricing differentiation in that the bilateral repo market closed completely, as counterparties were no longer willing to accept the correlated risks.

The shift towards secured segments and along the lines of country-specific segmentation has been accompanied by increased use of CCP clearing. In fact, data from the ECB's Euro Money Market Survey indicate that the increase in the total repo volumes is closely linked to a corresponding increase in the use of CCPs (Chart C). This feature suggests that since 2008 CCPs have played an important role in reducing risk premia and in maintaining access to the markets in times of financial strain. Moreover, within the secured market, the use of CCPs is on an upward path. The Euro Money Market Survey showed that in the second quarters of 2010 and 2011 roughly 50% of the repo market activity was cleared via CCPs, which compares with 41% in 2009. Another source, the ICMA European repo market survey,<sup>1</sup> where repos in euro represent 63.5% of the total, finds a similar trend – the importance of CCPs in the repo market grew significantly in 2010 (to 32.3% from 22.4% in 2009) and remained around 30% in 2011.

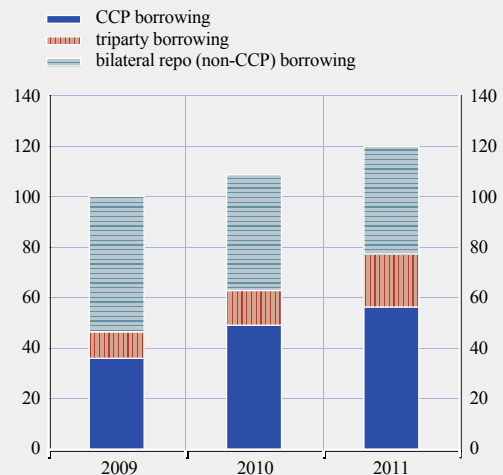
The majority of the repo trades are executed electronically (via automated trading systems – ATSS). The electronic trade execution together with the use of CCPs provides the advantage of anonymity in the transaction. According to the June 2011 ICMA survey, in data provided directly by the principal ATSS, the value of anonymous electronic trading grew by 3.3% in the first half of the year. The value of non-anonymous trading fell back sharply by 20%, accounting for a record low of 11.1% of all electronic trading, which may reflect the need of many banks to shift into anonymous CCP-cleared trading in order to preserve market access and reduce risk.

<sup>1</sup> The ICMA and ECB surveys are quite different in scope: the ECB survey consists of a larger panel of institutions (172 institutions, against 59 for the ICMA survey) exclusively focused on the 27 EU Member States + Switzerland (against 13 European countries, North America and Japan for the ICMA survey); the ICMA survey measures outstanding amounts at the end of June/December, while the ECB study focuses on daily average turnover in the second quarter of each year; and the ECB survey is limited to the euro repo market, while the ICMA survey covers all major currencies, with the euro accounting for 63.5% of the total repo volume.

However, price differentiation can also be detected in the CCP-cleared market, where banks benefit from lower credit risk and trading anonymity. For example, Eurex Repo's GC Pooling EUR Overnight Index<sup>2</sup> (computed on the basis of trades with high quality ECB-eligible collateral) has maintained levels below the unsecured EONIA rate. On the other hand, a similar rate<sup>3</sup> calculated on the basis of trades on the Italian MTS platform (also cleared by CCP) has recently been more volatile and above the EONIA rate. At the same time, the corresponding MTS volumes have been declining, while the volumes traded in the Eurex Repo's Euro GC Pooling segment have strongly increased. In this regard, it is possible that the collateral management services offered by some CSDs and the service for the re-use of collateral with Eurosystem central banks, in combination with anonymous trading, may have helped to keep sufficient liquidity in this specific segment during the crisis, and that this may be one explanation for the observed lower rates. It remains to be seen how this will evolve with the implementation of cross-border triparty collateral management services for Eurosystem credit operations in the coming years.

**Chart C Average daily turnover in the various secured market segments**

(index: total secured market in 2009 = 100)



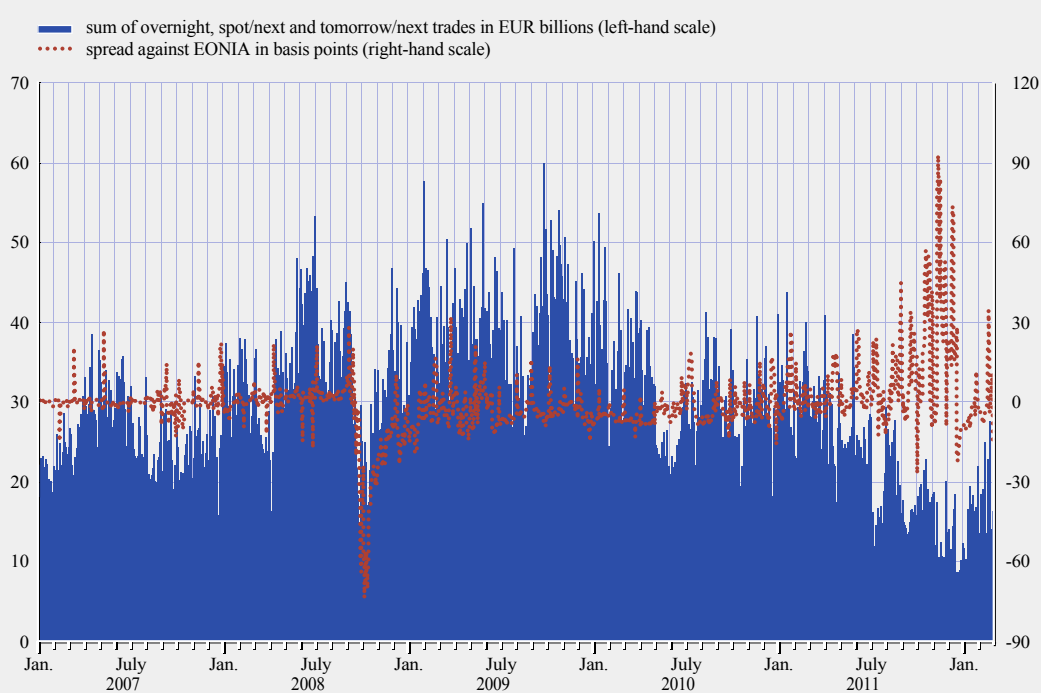
Source: ECB's Euro Money Market Survey.

The growing preference for CCP-cleared repos increases the relative importance of CCPs' risk management practices and the consistent setting of differentiated margin requirements. The imposition of additional margins for trades collateralised by specific bonds is aimed at protecting the members of the clearing platform from counterparty risk. However, selective increases in margin requirements in response to deteriorating conditions in some market segments may trigger a vicious circle, especially if they come as a surprise to market participants. Still, as CCPs are required to employ sound risk management frameworks, including frequent (daily and often intraday) margining based on sophisticated and proven margin calculation methods, sudden large haircut increases or unexpected margin calls in the repo market segment served by a CCP are less likely than the adjustments which may be necessary to correct possible under-collateralised positions in bilateral repos. Unexpected large haircut increases and resulting margin calls may result in sell-offs of the underlying securities because they (i) significantly increase the costs of short-term funding for banks, (ii) decrease the traded volumes, and (iii) contribute to a further segmentation of the secured market. In conclusion, it therefore seems that – as secured trading has become more and more important – segmentation along the lines of the perceived credit quality and liquidity of marketable securities has also occurred.

2 The GC Pooling EUR Overnight Index (GCPI) is the measure of overnight interest rates in the secured money market denominated in euro. GCPI represents a volume-weighted average of all interest rates from overnight transactions in the GC Pooling ECB Basket. The basket covers approximately 8,000 ECB-eligible securities. This overlap of eligible assets has been combined with a special service, i.e. re-use with a central bank within the collateral management system run by the CSD. This allows the specific re-use of received collateral for Eurosystem credit operations, albeit only on a domestic basis at present.

3 One-day rate – the sum of overnight (ON), spot/next (SN) and tomorrow/next (TN) trades.

Chart D Volume and one-day rate spread over the EONIA in the Italian MTS



Source: MTS.

## Box 3

**(TEMPORARY) BROADENING OF THE COLLATERAL FRAMEWORK**

In recent months, some euro area banks' access to Eurosystem refinancing operations had become more limited due to a lack of eligible collateral. On 8 December 2011, the Governing Council of the ECB enacted a temporary expansion of the list of eligible collateral for Eurosystem refinancing operations, aimed at overcoming such constraint thereby helping maintain an adequate flow of bank lending to the private sector in all parts of the euro area. In particular, it was decided to expand the use of Asset-Backed-Securities (ABSs) that are backed by loans to small and medium enterprises and by residential mortgages, and to increase the possibility to use bank loans, which have always been a part of the Eurosystem's collateral policy. Both measures should particularly benefit smaller banks involved in financing small and medium-sized companies, which suffer from the current malfunctioning of credit markets.

The type of assets used as collateral for refinancing operations by counterparties differ across jurisdictions as a result of specific operating practices in local financial markets and differences in legal frameworks. In the case of non-marketable assets such as bank loans, mobilisation costs and the availability of adequate credit assessments for the debtors depend very much on national specificities. Therefore, it was decided to offer to national central banks the ability to develop, within a common framework, national criteria for the acceptance of additional bank loans, in order

to capture the most relevant types of bank loans in each individual jurisdiction. Due to the fact that knowledge of the domestic economy and of the national legal framework is essential, the responsibility to assess the eligibility of the bank loans and specifically their creditworthiness lies with the relevant NCB, also in order to ensure a swift and efficient implementation of the measure.

In accordance with the prevailing role of NCBs in designing collateral frameworks for these instruments, it was decided that potential losses arising from the acceptance of additional bank loans will be borne by the NCBs themselves. At the same time, by establishing a minimum risk control framework (e.g. harmonised credit quality threshold and haircuts), an appropriate level of harmonisation across all national frameworks will be achieved, while not preventing national central banks from applying more stringent risk management measures if they see fit. The average haircut is estimated to be about two thirds of the value of the posted bank loans so that the over collateralisation is substantial. This is a level of protection sufficient to cover the Eurosystem from the risk of incurring losses under realistic scenarios.

This broadening of the collateral framework was adopted as a temporary solution, in the face of exceptional circumstances. It is of significant importance and can contribute to a sizable but controlled expansion of the liquidity provision by the Eurosystem. By intervening itself to address the impairment of local financial markets, the Eurosystem supports the effectiveness of the single monetary policy throughout the euro area, which is essential to price stability.

It is not desirable that the effectiveness of prudential regulation is undermined by the operational framework or that monetary policy implementation is adversely affected by regulation. There is therefore a need for detailed analysis of the effects of the implementation of the liquidity risk standards of Basel III on the use of central bank refinancing operations and related relevant market segments.

## 6 CONCLUSIONS

The financial crisis has given rise to significant challenges to the Eurosystem operational framework. The impairment of financial integration has adversely affected the functioning of money markets, a key part of the transmission mechanism of monetary policy. To mitigate this adverse impact, the Eurosystem has intervened in market segments that are outside its usual area of operation (specifically, the sovereign debt and covered bond markets).

The operational framework, thanks partly to the adjustments made to it, has been successful in mitigating the effects of the impairment of

financial integration on the transmission of monetary policy. However, it is evident that the operational framework cannot resolve the root causes of financial instability, nor can it completely offset the damage done to euro area financial integration.

While the operational framework has performed well, exhibiting both robustness and flexibility, important challenges remain that may require further adaptation. Four areas have been mentioned in which further reflection will be required in the near future.

The first area concerns the implications of the sizeable shift in money market transactions from the unsecured to the secured segments. This phenomenon suggests that increasing emphasis should be placed on repo markets in the conduct of monetary policy operations, though the full implications of this transition need to be explored further.

The second concerns the breadth and scope of the operational framework. During the crisis, the Eurosystem expanded the scope of its operations, performing to some extent an intermediary

function for the broader euro area economy. Questions remain regarding when the framework will need to return to a more normal mode of operation, and what form this will take.

The third concerns the issue of the appropriate size of the liquidity deficit of the banking system with the central bank in future. During the crisis, certain Eurosystem instruments resulted in a reduction in the liquidity deficit. If the deficit remains permanently lower, or even turns into an occasional surplus, the nature of the monetary policy instruments may have to change.

The fourth concerns the new regulation of bank liquidity risk contained in Basel III and how it should interact with the Eurosystem collateral framework. Both liquidity regulation and the collateral framework are important elements of the financial architecture, capable of affecting market practices. Hence the importance of ensuring their mutual consistency and synergy over time in the interest of preserving bank liquidity and guaranteeing effective monetary policy implementation.

## D INSTITUTIONAL REFORM IN THE EUROPEAN UNION AND FINANCIAL INTEGRATION

*The recent crisis underscored the weaknesses inherent in the EU financial and institutional framework in the years between the introduction of the euro and the financial crisis. Those inadequacies played a decisive role in undermining the stability and integration of the euro area financial sector, culminating, particularly during the euro sovereign debt crisis, in the fragmentation or even the virtual splitting along national lines of some key euro area financial market segments.*

*At a time in which the framework is undergoing radical reform, it is useful to reflect on its links with capital market integration, especially in the single currency area. Against this background, this Special Feature reviews the main features of the EU financial and institutional framework in the early years of EMU and the main focus areas of the current financial and institutional reform process from the perspective of their implications for the integration of the Single Market for capital and financial services in the euro area.*

## I INTRODUCTION

This Special Feature pursues two related objectives. The first one is to examine the failures of the pre-crisis financial and institutional framework from a financial integration perspective. Within this framework, the focus lies on (i) the regulatory and supervisory arrangements of the financial services sector and (ii) macroeconomic and fiscal governance, including surveillance. The second objective, which is more forward looking, is to review the reforms currently underway, assess how they can contribute to restoring and preserving financial integration on a more durable basis, and suggest possible improvements.

The structure is as follows. Section 2 explores the conceptual link between financial integration and

the EU financial and institutional arrangements, focusing on the drawbacks of the pre-crisis arrangements. Section 3 examines the ongoing reforms and their potential impact on financial integration. Section 4 concludes.

## 2 THE PRE-CRISIS FRAMEWORK AND ITS IMPLICATIONS FOR FINANCIAL INTEGRATION

The financial crisis, which started in 2007 under the influence of instability factors originating in the United States and has culminated, since mid-2010, in the euro-centred sovereign debt crisis, has challenged the stability and integration of EU financial markets in an unprecedented way. It is increasingly acknowledged that the observed instability and fragmentation of euro area financial markets stemmed, to a large extent, from the deficiencies of the pre-crisis financial and institutional framework of the euro area. These deficiencies encompass both the arrangements relating to financial stability and those concerning fiscal and macroeconomic governance, including the respective crisis management frameworks.

The weaknesses in the financial and institutional framework affected financial integration in two ways. First, the incomplete harmonisation of the pre-crisis supervisory and regulatory framework prevented the benefits of full integration from being reaped and, as shall be explained below, created fragilities in the structure of financial markets that became more apparent over time and under stress. Second, the crisis revealed the weaknesses in the national and EU-wide crisis management frameworks, resulting in the partial disintegration and splitting along national lines of some segments of the single EU market for capital and financial services.

With this in mind, this section provides a summary of the pre-crisis arrangements and discusses how the lack of a proper financial and institutional framework eventually undermined the integration of EU financial markets.

## A. FINANCIAL FRAMEWORK

Broadly speaking, the pre-crisis financial stability arrangements in the EU were characterised by a dichotomy between the increasingly globalised nature of finance and the national nature of supervision and regulation, which remained a prerogative of Member States, with only a modest degree of supranational coordination. This asymmetry was more relevant in the euro area, because of the tensions generated by the existence of a common currency and central bank, while substantial supervisory, fiscal and economic policy powers remained in national hands without sufficient discipline being exercised by the coordination mechanisms.

This dichotomy prevented the full integration of the EU financial sector and the detection of the build-up of vulnerabilities before the crisis. Once the vulnerabilities materialised, it also proved to be an obstacle to the efficient management of the crisis, thereby significantly setting back the integration process.

### REGULATION AND SUPERVISION

The “Lamfalussy framework”, which was launched in 2001 along the lines set out in the Lamfalussy Report (published in March 2001, following the work of the Committee of Wise Men chaired by Alexandre Lamfalussy), foresaw the restructuring of the EU’s legislative, regulatory and supervisory architecture into four levels. Level 1 envisaged the adoption of general framework legislation; Level 2 provided for the adoption of detailed implementing measures for the Level 1 legal acts; and Level 3 focused on fostering cooperation among national supervisors aimed at ensuring a uniform enforcement of the Level 1 and Level 2 acts. For this purpose, three Level 3 committees were established: CEBS, CESR and CEIOPS with competence for banking, securities, and insurance and pension funds respectively. The main functions and tasks of these committees were to work on consistent guidelines and common standards (in areas not covered by EU legislation), to provide peer reviews, and to compare regulatory practice to ensure consistent

implementation and application. Finally, Level 4 was intended as an enhanced control to be exercised by the European Commission on the application of Level 1 and Level 2 acts in Member States. Moreover, colleges of supervisors were envisaged to enhance supervisory cooperation and information exchange.<sup>65</sup>

According to the Stockholm European Council of 23 March 2001<sup>66</sup>, the Lamfalussy framework had three broad aims: (i) making Community legislation on securities markets more flexible, so that it can be agreed and adapted more quickly in response to innovation and technological change in financial markets; (ii) allowing institutions to benefit from the technical and regulatory expertise of European securities regulators and from closer involvement of external stakeholders; and (iii) pursuing a more even implementation and enforcement of Community law in the Member States.<sup>67</sup> While the Lamfalussy Report originally focused on the securities markets, in 2003 the Commission launched a package of seven measures to extend the Lamfalussy process to banking, insurance and occupational pensions.<sup>68</sup>

While the Lamfalussy framework contributed to the development of a more flexible European regulatory system and to a faster and more efficient decision making process, it had a number of weaknesses. One of these was that it relied on a regulatory framework that allowed national options and discretions and “gold-plating”, owing

<sup>65</sup> Colleges of supervisors were established as part of the EU regulatory framework for the banking sector by Directive 2009/111/EC of the European Parliament and of the Council of 16 September 2009 amending Directives 2006/48/EC, 2006/49/EC and 2007/64/EC as regards banks affiliated to central institutions, certain own funds items, large exposures, supervisory arrangements, and crisis management (OJ L 302, 17.11.2009, p. 97).

<sup>66</sup> See *Resolution of the European Council on more effective securities market regulation in the European Union*, Stockholm, 23 March 2001, available on the ESMA website (<http://www.esma.europa.eu>).

<sup>67</sup> See *Commission staff working document: The application of the Lamfalussy process to EU securities markets legislation – A preliminary assessment by the Commission services* (SEC(2004) 1459).

<sup>68</sup> *Idem*.



to the significant scope for interpretation as regards several regulatory concepts. Furthermore, measures agreed at Level 3 were not applied consistently in day-to-day supervisory practice, sometimes exacerbated by the fact that guidance was issued at national level that diverged from the agreed Level 3 guidance.<sup>69</sup>

Effective regulatory convergence is a prerequisite for supervisory convergence. Differences in supervisory requirements and approaches and overlapping policy measures led to increased compliance costs for cross-border institutions, with a negative effect on cross-border activity.

Furthermore, in many Member States, the lack of a robust regulatory and supervisory framework led to a failure to control an unbalanced and unsustainable expansion of credit by the banking sector, in a period characterised by low interest rates.

The build-up of risks in the “shadow banking system” (e.g., the practice of banks to shift part of their activity and risks off their balance sheets, often in order to bypass prudential regulations or tax charges) remained largely unregulated and unsupervised. While supervisors were aware of the off-balance sheet exposures of banks towards the shadow banking system, they were often unaware of the dimension of the phenomenon and the risks involved. Hence, vulnerabilities in the shadow banking system were allowed to build up, and interdependencies between the traditional and shadow banking sectors went unscrutinised by supervisors. As a consequence, the financial sector took excessive risk and became overly leveraged.

In addition to limitations in national supervisory frameworks, insufficient cooperation and exchange of information among national supervisors contributed to preventing the early recognition of risks in the EU financial sector.

Besides the shortcomings in micro-prudential supervision, the framework was also not conducive to identifying cross-country and

cross-sector interlinkages, which therefore went unaddressed.

### CRISIS MANAGEMENT

The crisis also revealed severe deficiencies in the crisis management framework. Member States were forced to resort to a government-funded bailout to prevent a potentially disorderly failure of financial institutions.

The reasons were manifold. First, the absence of a special bank resolution regime often precluded the option of an orderly closure of financial institutions. Second, even if a well-designed special bank resolution regime had been in place in an individual country, this did not guarantee that the resolution of a cross-border bank could also be dealt with effectively, as there was no adequate resolution framework for cross-border banks.

Third, given the lack of a clear legal framework, rescue strategies were surrounded by a high degree of uncertainty. One of the main obstacles to group resolution lay in the fact that procedural and substantive insolvency rules are a matter of domestic law. Another relates to asset transferability within groups. While supervisory ring-fencing measures served to protect domestic creditors and shareholders from unfavourable transfers, they sometimes made the survival of a group more difficult. Yet another example is the property rights of stakeholders. More specifically, obligations to hold a general meeting to decide on an increase in capital served to hamper the efficient and swift resolution or restructuring of a financial institution, in particular in a cross-border setting.

Fourth, and closely linked to the previous two points, the inadequacy of private financing arrangements and the lack of ex ante burden-sharing arrangements also posed a significant barrier to effective resolution. In their absence, strong interlinkages existed between supervisory

<sup>69</sup> See *Review of the Lamfalussy framework – Eurosystem contribution*, ECB, November 2007, available on the ECB’s website (<http://www.ecb.europa.eu>).

and crisis management policies and national fiscal policies. In this context, more effective cooperation and exchange of information among national authorities would have been helpful. In particular, the 2008 Memorandum of Understanding among supervisors concerning crisis management<sup>70</sup> did not ensure that the incentives of the different national authorities were aligned to the extent necessary.

Within this institutional framework, cooperation and coordination of intervention policies took place to a certain extent to face the challenges of late 2008. However, later developments would suggest that, in retrospect, coordination policies could have been more effective. In particular, government support measures in some cases distorted the level-playing field, mirroring differences in credit risk of Member States; cross-border financial institutions in distress were often dissected along national lines; uncertainty on rescue strategies and legal uncertainties discouraged cross-border activities (e.g. lending, deposit-taking, bank branching and mergers); government-funded rescue operations distorted the level playing field and sometimes induced financial institutions to retrench behind national borders by linking financial support to sustaining the real economy; and the lack of a crisis management framework exacerbated cross-border counterparty risks and led to further segmentation.

## B. FISCAL AND MACROECONOMIC FRAMEWORK

Prior to the financial crisis, the macroeconomic surveillance framework was characterised by a fiscal surveillance framework, the Stability and Growth Pact, and by the virtual absence of a corresponding framework to monitor and prevent other imbalances, notably external and competitive imbalances among the euro area countries. Concerning the latter, it was a commonly stated assumption that, once these countries were linked by a single currency, with perfect mobility and substitutability of capital denominated in euro, considerations related to “external accounts” among euro area members lost all economic and policy relevance.

In addition, as increasingly experienced in practice, the fiscal framework was far from effective in ensuring adequate fiscal governance. The Stability and Growth Pact, which was meant to preserve the sustainability of fiscal policies, had a number of shortcomings.<sup>71</sup> One of the most important was its weak enforcement mechanism. The “preventive” arm of the Pact, requiring governments to achieve structural budget balances close to zero or in surplus, was often overlooked in policy formulation. Moreover, the “corrective” arm of the Pact, notably the excessive deficit procedure – aimed at inducing governments to quickly correct deficits in excess of 3% of GDP – was not properly applied. An implicit assumption of “non-interference” prevailed among Member States. The disciplinary function that should have been performed by peer pressure proved insufficient, or even at times turned into reciprocal leniency. In 2003 the credibility of the Stability and Growth Pact was severely undermined when the excessive deficit procedure was not rigorously implemented for large euro area countries. Moreover, the government debt criterion was never effectively applied in practice.

As a consequence, many countries failed to achieve sound fiscal positions during a period in which good macroeconomic conditions would have facilitated this process (and made it less painful). Moreover, due to the absence of a framework for macroeconomic surveillance, the dangers stemming from the interaction between macroeconomic and fiscal imbalances and from the build-up of financial risks in the euro area did not receive the necessary attention from policy-makers. As a result, corrective policy actions were not undertaken at a time when the favourable economic climate – with strong growth and price stability prevailing at the global

<sup>70</sup> Memorandum of Understanding on cooperation between the financial supervisory authorities, central banks and finance ministries of the European Union on cross-border financial stability, 1 June 2008, available on the ECB’s website (<http://www.ecb.europa.eu>).

<sup>71</sup> See, inter alia, the article “The reform of economic governance in the euro area – essential elements”, *Monthly Bulletin*, ECB, March 2011.

level – would have made such measures more effective and less costly than they are now.

### C. IMPLICATIONS FOR FINANCIAL INTEGRATION

The years preceding the financial crisis were very favourable from the viewpoint of the integration of capital markets in the EU (and in the euro area in particular). They were characterised by growing cross-border financial and banking activity. Financial integration, as measured by several statistics (e.g. cross-country interest spreads, their volatility, cross border investment and portfolio flows) increased steadily and, in some cases, strongly and rapidly.<sup>72</sup> This progress, taking place in the context of the competitive EU market for capital and financial services prevailing since the early 1990s, was further boosted after 1999 by the introduction of the single currency, which increased asset substitutability across frontiers by eliminating currency risks. Financial integration was remarkably fast in money and financial markets; but it was slower and, in fact, never completed in other segments, notably in retail banking, as described extensively in previous issues of this report.

Meanwhile, regulatory and supervisory arrangements remained organised essentially along national lines, with some cross-border cooperation within supervisory colleges and other supervisory fora. The existing financial policy framework attempted to strike a balance between two contrasting features of the EMU architecture – regional integration in some respects and national transposition and enforcement of EU legislation. In keeping with the Treaty provisions, the transposition of financial legislation and day-to-day supervision ultimately remained national responsibilities. In the logic of this institutional design, regulatory divergence was to be neutralised by the combination of home country control (according to which the supervision of financial institutions and their branches, wherever located, was entrusted to the supervisor of the country of incorporation), freedom of establishment and mutual recognition (the principle according

to which the host supervisor recognises the authority of the home supervisor over the branches, but not the subsidiaries, located in the host supervisor's territory). In practice, the transposition of these legislative acts into national law left room for adaptation to country-specific conditions.

This “minimum harmonisation” approach shaped the financial landscape.

The cross-border divergences had much less impact on smaller financial institutions, which tend to be domestically oriented and, in the EU, are typically rooted in national or even local markets, where proximity to supervisors is of value.

Conversely, large financial institutions are more open to expanding across borders. They possess the size and ambition to expand internationally and are able to exploit economies of scale, but are hampered by regulatory fragmentation, which multiplies the associated compliance costs. It is indicative, in this respect, that large financial institutions have systematically supported official initiatives to enhance supervisory harmonisation in Europe. In the end, while financial liberalisation and the introduction of the euro proved, as hoped, to be major steps towards a single market for banking and financial services, regulatory fragmentation impeded progress by limiting the scope for cross-border activity by those institutions.

Not surprisingly, cross-border banking is one of the aspects of financial integration that has developed the least in the period between 1999 and 2007. As noted in the 2007 report on Financial Integration in Europe, “*while interbank and capital market-related activities show signs of increasing integration, retail banking markets continue to be less integrated, which is also reflected in the fragmented underlying financial*

<sup>72</sup> The fundamental reassessment of credit risk in sovereign bond markets during the crisis indicated that the compression of cross-country yield spreads before 2007 was the result of systematic underpricing of credit risk and therefore was over-interpreted as an indicator of financial integration.

*infrastructure*". This judgment has not changed in subsequent years. Cross-border banking through branches or subsidiaries has remained limited, in stark contrast to other forms of banking integration, like interbank deposits or securities holdings, partly as a result of informational asymmetries stemming from supervisory fragmentation.<sup>73</sup> Likewise, cross-border mergers and acquisitions, after strong acceleration following the introduction of the euro, stalled and remained low for years, rising again during the crisis only as a result of merger operations engineered through the public sector.

A rather different pattern was observed in securities markets. Securities market integration, measured by yield differentials and intra-euro area cross-border flows and holdings, increased markedly in the early years of monetary union up to 2007, albeit to varying degrees, for all categories of institutional holder (banks, mutual funds and pension funds) and issuer (sovereigns, corporates and the banking sector).<sup>74</sup> For example, bank holdings of securities issued by foreign banks *within* the euro area increased sharply, as did, in parallel, holdings of bank securities issued *outside* the euro area (see Chart 32 in the Statistical Annex), in the context of (the perception of) low counterparty risk in the banking sector. An abrupt reversal took place after 2007; banks reduced the share of foreign (intra euro area) securities issued by other banks held in their securities portfolios by almost 10 percentage points. By contrast, holdings of extra-euro area securities did not decline (see again Chart 32 in the Statistical Annex). While these movements should be seen in the context of a general retrenchment of securities markets during the crisis, it is noteworthy that intra-euro area holdings have been penalised more strongly. It seems conceivable that, particularly in certain countries, counterparty risk perceptions may have been exacerbated more by the interaction between fiscal fragility and bank fragilities than by regulatory asymmetries and uncertainties (which presumably were relevant for non-euro area countries as well). Consistent with this interpretation is the fact that intra-euro area cross-border interbank loans also decreased

markedly during the crisis (See Chapter 1 of the 2011 report on Financial Integration in Europe).

Another key feature of the pre-crisis financial framework which is relevant from a financial integration perspective was the lack of emphasis on systemic risk. Following established practice and the prevailing supervisory culture, national supervisors concentrated their attention on individual institutions, taking systemic stability for granted and macroeconomic conditions as given. Even the international bodies, which were more accustomed to looking at broader interconnections, did not focus on the systemic implications to a great extent. This seemed unproblematic at the time, but had consequences later. The crisis struck banks that were unprepared in their capital adequacy, liquidity buffers and risk-management approaches, to face a dramatic scaling up of contagion risks. Consequently, counterparty risk perceptions increased sharply, leading to a virtual severing of many cross-border banking channels.

A key role in reinforcing these phenomena was also played by the other pillar of the pre-crisis EMU architecture, namely the framework to deal with internal fiscal and macroeconomic imbalances. As described in the preceding sub-section, the Stability and Growth Pact, in its original formulation as well as after the 2004-2005 reform, failed to prevent large and persistent budgetary imbalances from arising in

<sup>73</sup> See, for example, Dermine, J. (2002), "European banking: past, present and future", paper prepared for the Second ECB Central Banking Conference – the Transformation of the European Financial System, available on the ECB website (<http://www.ecb.europa.eu>). Dermine noted that cross-border banking in the EU takes place to a large extent via subsidiaries, rather than branches, a surprising fact in his view, considering their higher regulatory costs for multinational conglomerates. However, while branches seem to be the logical solution for a conglomerate offering banking services abroad with a single passport, an opposite argument applies to customers, for whom regulatory uncertainty is lower when dealing with a local subsidiary than with a branch of a foreign bank. The resulting market configuration balances opposing preferences on the demand and the supply side, with a mix of solutions being adopted, while the overall volume of cross-border banking is in decline.

<sup>74</sup> However, yield differentials may have been overly compressed after the introduction of the euro: the recent crisis showed that spreads had been artificially low, given past accumulated fiscal imbalances and different country competitiveness profiles.

certain euro area countries. At the same time, the currency area did not possess a policy framework to deal with macroeconomic and external imbalances. Elements of economic policy cooperation existed in the Lisbon Agenda, with its coordinated market-oriented and competitiveness-enhancing provisions, but these lacked sufficient specificity and strength to prevent intra-euro area imbalances from arising. The latter were also not perceived as very important, owing to two assumptions widely held at the time. First, a currency area with full capital mobility should be able to finance any internal current account gap with offsetting private capital flows, through banks or the non-financial sector. Second, competitive imbalances should, in principle, readjust spontaneously through changes in economic activity and prices, without explicit policy actions. The latter assumption, in particular, depends on goods markets functioning well, so that prices are sufficiently responsive to economic conditions, but this was an unrealistic assumption, given the structural characteristics of many parts of the euro area.

Therefore, contrary to these assumptions, the weaknesses of the fiscal and macroeconomic frameworks ended up interacting with those of financial governance, resulting in a major, albeit delayed, adverse impact on financial stability and integration. The deeper financial integration in the euro area (deeper than in the EU as a whole) facilitated strong interdependencies between the real, fiscal and financial sectors, resulting in powerful cross-border spillover effects during the crisis. Euro area budgetary imbalances interacted with banking fragilities (in both directions in the more recent phase of the crisis). On one hand, high deficits and debts eroded confidence in the public sector's ability to support the domestic banking system, increasing bank counterparty risk in respect of banks located in heavily indebted countries, and, on the other, bank fragility had a severe budgetary impact in some countries, as public funds were mobilised to recapitalise ailing institutions and to backstop their losses. Apart from their impact via financial instability, fiscal fragilities also affected

financial integration directly by undermining the level playing field: banks in countries with fiscal problems had to bear higher funding costs that reflected the higher headline risk of their sovereign. In addition, government guarantees on bank bonds widely provided during the crisis had different values, depending on the fiscal situation of the sovereign.

As the crisis developed, market confidence in the ability of some governments to restore or maintain sustainable public finances over the medium term also weakened substantially, contributing to a spike in economic uncertainty. This fed negatively into domestic economies and led to further contagion in euro area countries with perceived weak fiscal fundamentals, structural problems and financial fragilities. Against the background of dried-up liquidity, high government refinancing needs also created concerns that the public sector may crowd out bank debt issuance. National banking sectors with high exposure to domestic sovereign markets were hit hardest, but foreign banks holding large portfolios of the most vulnerable sovereigns were not spared either.

At the beginning of the crisis (especially the period 2007-2008), national efforts to support financial institutions were implemented in an insufficiently coordinated manner, which may have contributed to an exacerbation of costs in some countries. Moreover, the announcements of bank rescue packages led to a re-assessment by investors of sovereign credit risk, first and foremost through a transfer of risk from the private financial sector to the government, as reflected in subsequent increases in sovereign bond yield spreads.<sup>75</sup> In many cases, the adverse feedback loop was exacerbated by the expectations mechanism, leading to sharply rising and volatile sovereign spreads, often co-varying with bank spreads and bank stock valuations.

<sup>75</sup> For an empirical analysis, see also Attinasi, M., Checherita-Westphal, C. and Nickel, C. (2009), "What explains the surge in euro area sovereign spreads during the financial crisis of 2007-09?", *Working paper Series*, No 1131, ECB.

The role of macroeconomic imbalances was more complex and delayed, but it is likely to be more protracted because of the high persistence which typically characterises adjustments in price setting and in the real economy. Initially (until approximately 2007-08), those imbalances, consisting in steadily rising competitiveness gaps, current account disequilibria and increasing private sector leverage, were easily financed through private capital movements, confirming the aforementioned assumptions. Subsequently, however, they started to affect the financial sector and public budgets, feeding onto the loop described above. High private sector leverage increases bank risk, particularly once the loss of competitiveness weakens economic growth, making high leverage ratios less sustainable. It also impacts on public budgets, as windfall revenues during boom times were in many cases accompanied by expansions in expenditure, the latter being more difficult to reverse in bad times. This, together with large revenue shortfalls and rapidly declining output, contributed to a build-up of deficits and debt. The experience of those euro area countries that have gone from boom to recession in recent years clearly illustrates how private sector indebtedness can, more easily and quickly than previously thought, endanger public finances and eventually create additional risks to financial stability and integration.

Overall, the euro sovereign debt crisis can be considered to a large extent to be a manifestation of failures in fiscal, financial and macroeconomic policy coordination. Unless tackled with decisive policy measures, it risks undermining the economic stability and growth potential of Europe and the stability of the monetary union itself. The current efforts to improve that coordination framework are reviewed in the next section.

### 3 REFORMING THE EU'S FINANCIAL AND INSTITUTIONAL FRAMEWORK

In response to the shortcomings of the pre-crisis framework, the EU has embarked on a series of overarching reforms with the key objective of

reinforcing the resilience of the financial system by strengthening the financial and institutional arrangements. The ongoing reforms will also help to foster the integration of the EU's financial sector (as well as its stability), hopefully reversing rapidly its current fragmentation. The current reforms are an important step in the right direction, but further steps are needed to ensure the stability and full integration of financial markets in the EU.

#### A. REFORMING THE FINANCIAL FRAMEWORK

##### REFORMING FINANCIAL SUPERVISION

Following the crisis, the EU **supervisory framework** underwent a comprehensive reform, aimed at ensuring a stable, reliable and robust Single Market for financial services, in accordance with the recommendations of the De Larosière Report.<sup>76</sup> The new EU architecture consists of two mutually reinforcing European pillars:

- i. A *macro-prudential pillar*, with the creation of the European Systemic Risk Board (ESRB) with a mandate to prevent and mitigate the build-up of risks to financial stability in the EU financial system and to contribute to the smooth functioning of the internal market.<sup>77</sup>
- ii. A *micro-prudential pillar*, with the establishment of three European Supervisory Authorities (ESAs) for banking (EBA), securities (ESMA) and insurance and pension funds (EIOPA), replacing the earlier three Level 3 Committees CEBS, CESR and CEIOPS.

<sup>76</sup> At the request of the European Commission, a high-level group chaired by the former Governor of the Banque de France, Jacques de Larosière, formulated a broad set of recommendations for reforming the European institutional framework dealing with financial supervision. The report of the High-Level Group on Financial Supervision in the EU is available on the Commission's website (<http://ec.europa.eu>). A legislative package which reflects these recommendations was adopted by the European Parliament and the Council respectively on 22 September and 17 November 2010. Following the adoption of the new legal framework, the ESRB and the ESAs formally started to operate on 16 December 2010 and January 2011, respectively.

<sup>77</sup> For details, see Special Feature A in the December 2009 issue of the ECB's Financial Stability Review.

With radically enhanced powers and mandates relative to the Lamfalussy Level 3 Committees, the ESAs have a stronger role aimed at achieving regulatory and supervisory convergence in their respective financial sectors. The powers given to the ESAs include:

- the development of draft technical standards, (to be made legally binding by the Commission) with a view to the creation of a single EU rule book;
- the settlement of disagreements in cross-border situations among national supervisors, with the power to make binding decisions; and
- a coordinating role with respect to the operations of supervisors in emergency situations.

The specific powers granted to the three ESAs have been designed to improve the quality and consistency of supervision, reinforce the supervision of cross-border groups, strengthen crisis prevention and management across the EU, and establish a set of common standards applicable to all financial institutions (the “single rule book”). Such reforms should help to reduce regulatory arbitrage and advance progress towards more sustainable financial integration in the EU.

Beyond ensuring consistency in the supervisory rules applicable within each financial services sector, the supervisory reform also paves the way for a coherent supervisory approach across financial services sectors. A Joint Committee has been established to serve as a forum in which the ESAs can cooperate with the aim of reaching common positions on cross-sectoral issues.<sup>78</sup>

#### REFORMING FINANCIAL REGULATION

Regarding financial **regulation**, the current reform efforts mirror the lessons from the pre-crisis and crisis periods, i.e. the need for stronger resilience, better infrastructure, and greater harmonisation of rules.

#### Bank and market resilience

The crisis has highlighted the urgency of overhauling the regulatory capital framework in the EU. The European Commission has issued a proposal for a Capital Requirements Directive (CRD IV) and a Capital Requirements Regulation (CRR) to implement the Basel III framework, which is aimed at strengthening the quality and quantity of capital.<sup>79</sup> Beyond the micro-prudential dimension of capital, Basel III also introduces key macro-prudential elements, such as a capital conservation buffer and a counter-cyclical capital buffer. These requirements ensure, respectively, that banks build up capital buffers outside periods of stress and provide for a safeguard for periods of excessive growth. In order to prevent the build-up of leverage, a “leverage ratio” has been included in the framework. Furthermore, Basel III and the CRD IV incorporate **new liquidity standards** which should ensure that banks hold sufficient high quality liquid assets to withstand acute stress. In the longer term, they will increase banks’ incentives to use more stable sources of funding on a structural basis.

Following the establishment of the ESRB as the European macro-prudential oversight body, macro-prudential policies need to be established. The countercyclical capital buffer is the first major instrument to be introduced. Furthermore, tools addressing risk exposures to certain sectors and regions will have to be established.

Another relevant legislative initiative by the European Commission was the review of the

<sup>78</sup> These are related to (i) the rules applying to financial conglomerates, (ii) accounting and auditing issues, (iii) micro-prudential analysis of cross-sectoral developments, risks and vulnerabilities for financial stability, (iv) retail investment products and consumer protection issues, (v) measures to combat money laundering, and (vi) information exchange with the ESRB.

<sup>79</sup> See proposal for a Directive of the European Parliament and of the Council on the access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms and amending Directive 2002/87/EC of the European Parliament and of the Council on the supplementary supervision of credit institutions, insurance undertakings and investment firms in a financial conglomerate (COM(2011) 453 final) and proposal for a Regulation of the European Parliament and of the Council on prudential requirements for credit institutions and investment firms (COM(2011) 452 final).

### Markets in Financial Instruments Directive

(MiFID) in October 2011.<sup>80</sup> The review was aimed at adapting the current EU regulatory framework to the latest technological and financial developments, while addressing the G20's requests for national authorities to tackle less regulated and more opaque parts of the financial system.

The main objective of the Regulation on **short selling** and certain aspects of credit default swaps<sup>81</sup> is to create a harmonised framework for short selling practices at EU level, consistent with internationally agreed standards. The Regulation also aims at preventing market fragmentation and safeguarding the smooth functioning of the internal market.

In the field of credit ratings, the **Credit Rating Agencies Regulation** was adopted in 2009, introducing strict authorisation requirements and supervision. In addition, in December 2011 the European Commission put forward a legislative proposal to further strengthen the Credit Rating Agencies Regulation with the objective of helping to reduce risks to financial stability and restore the confidence of investors and other market participants in financial markets and ratings quality<sup>82</sup>. Ratings are deeply embedded in the regulatory architecture and are also crucial to investor decisions. It is therefore essential that they are independent, objective and of the highest possible quality, as shortcomings in rating activity can erode market confidence and adversely affect financial stability and integration.

Another crucial area of regulatory reform on which the European Commission is currently working relates to the **"shadow banking system"**. This work is aimed at developing a better understanding of unregulated entities (as well as their interconnections with regulated ones). In the run up to the crisis, systemically important areas of activity developed in the financial system without proper regulatory oversight, creating financial stability risks.<sup>83</sup> Work on this area is also at a relatively early stage both at international level and in the EU.

### Financial infrastructure

The crisis has highlighted the fact that the resilience of individual financial institutions depends not only on their own characteristics, but also on the resilience of their counterparties and of the markets and infrastructures that they rely on when carrying out their business. Regulatory reform in this broad area is therefore focused on ensuring greater transparency in the various market segments and infrastructures, ensuring sufficient competition, and attenuating pro-cyclicality as much as possible.

A key priority is the establishment of an appropriate regulatory framework for **over-the-counter (OTC) derivatives**. In the EU, the forthcoming Regulation on OTC derivatives, central counterparties and trade repositories (also known as the European Market Infrastructure Regulation, or EMIR) is aimed at fostering market transparency through the reporting of all transactions to trade repositories, mitigating counterparty risks through the use of central counterparties (CCPs) for sufficiently standardised and liquid products, and ensuring the safety and soundness of OTC derivatives, CCPs and trade repositories.

A non-crisis related project that will strengthen the financial infrastructure further is **TARGET2-Securities (T2S)**, which aims to deliver harmonised and commoditised

80 See proposal for a Directive of the European Parliament and of the Council on markets in financial instruments repealing Directive 2004/39/EC of the European Parliament and of the Council (Recast) (COM(2011) 656 final), and proposal for a Regulation of the European Parliament and of the Council on markets in financial instruments and amending Regulation on OTC derivatives, central counterparties and trade repositories (COM(2011) 652 final).

81 Regulation (EU) No 236/2012 of the European Parliament and of the Council of 14 March 2012 on short selling and certain aspects of credit default swaps, OJ L 86, 24.3.2012, p. 1.

82 See proposal for a Regulation amending Regulation (EC) No 1060/2009 on credit rating agencies (COM(2011) 747 final) and a proposal for a Directive amending Directive 2009/65/EC on the coordination of laws, regulations and administrative provisions relating to undertakings of collective investment in transferable securities (UCITS) and Directive 2011/61/EU on Alternative Investment Funds Managers in respect of the excessive reliance on credit ratings (COM(2011) 746 final).

83 See *Shadow Banking: Strengthening Oversight and Regulation – Recommendations of the Financial Stability Board*, FSB, 27 October 2011, available on the FSB's website ([www.financialstabilityboard.org](http://www.financialstabilityboard.org)).



delivery-versus-payment (DvP) settlement in central bank money, both in euro and in other participating currencies. This will contribute to safer processing, improved efficiency and lower costs, especially for cross-border securities transactions. The project is currently in the development phase, and the platform is due to go live in June 2015.

Other important initiatives include a proposal for a regulation on central securities depositories (CSDR), aimed at regulating the authorisation, supervision, and cross-border provision of services offered by CSDs; a directive on securities law (SLD) aimed at dismantling legal barriers created by differences in national securities laws that impede efficient cross-border securities holding and disposition in the EU; a directive on close-out netting (for more information, see Section 1 in Chapter 3); and the establishment of technical requirements for SEPA credit transfers and SEPA direct debits in euro, imposing an end-date for migration to SEPA (the SEPA migration end-date Regulation).

#### Regulatory harmonisation

Recognising the benefits of harmonised regulation, the European Council has committed itself to adopting a single European rule book applicable to all financial institutions in the Single Market. A single European rule book will ensure that financial institutions providing financial services in the Single Market comply with one set of prudential rules, thereby fostering financial integration.

A single European rule book can in principle be achieved by the adoption of Level 1 legislation, which is directly applicable across the EU and does not require transposition into national law. This legislation may be complemented by implementing measures, prepared on the basis of the work of the ESAs. The ECB has consistently supported the “single rule book” approach for financial regulation, with the aim of promoting the smooth functioning of the Single Market.

The most prominent example is the current proposal to implement Basel III partially through regulation.

#### REFORMING THE CRISIS MANAGEMENT FRAMEWORK

Although strengthening the supervisory framework and the prudential rules is the first line of defence in crisis prevention, this needs to be complemented with a credible resolution framework, especially for large cross-border financial institutions. The EU framework for crisis management and resolution is currently being revised so as to address the deficiencies highlighted by the crisis.<sup>84</sup> The European Commission will shortly publish a legislative proposal for an EU framework for bank recovery and resolution.<sup>85</sup> The ultimate objective of the framework is to ensure that all institutions can be allowed to fail in a way that safeguards the stability of the financial system and minimises public costs and economic disruption. The new framework will also have positive effects on financial integration.

First, the new framework will include a *harmonised set of early intervention tools*, thereby ensuring that the same tools are available in all Member States and are applied in a harmonised manner, based on common triggers.<sup>86</sup> Hence, financial institutions will operate under similar resolution regimes, and it will be easier to

84 For details on the EU framework for bank recovery and resolution, see Special Feature A in the 2011 ECB report on Financial Integration in Europe.

85 This legislative proposal is expected to be consistent with work carried out in this field at the international level. In particular, a new international standard for resolution regimes (see *Key Attributes of Effective Resolution Regimes for Financial Institutions*, Financial Stability Board (FSB), October 2011, available on the FSB’s website, [www.financialstabilityboard.org](http://www.financialstabilityboard.org)) developed by the FSB was endorsed by G20 leaders at their Summit of 4 November 2011. It contains not only a broad arsenal of effective resolution tools, but also provisions to facilitate cooperation among national authorities.

86 The early intervention measures envisaged by the new framework include prohibiting the payment of dividends, imposing additional reporting requirements, and requiring the replacement of managers or directors or the cessation of certain risky activities.

recover or resolve cross-border banks without breaking them up along national borders.

Second, *intra-group financial support* will reduce the current legal uncertainty that surrounds asset transferability within groups. According to the Commission's proposal, the conditions for intra-group loans, guarantees and transfers of assets for use as collateral could be set out in group financial support agreements between parent banks and bank subsidiaries. However, progress in this area is extremely challenging, since group interest is not a well-defined legal concept, while national laws focus on protecting local creditors. The challenge will be to include adequate safeguards in the framework to ensure that the financial stability of the transferring country is not exposed to undue risk as a result of the support provided under the agreement.

Third, the *involvement of the EBA*, playing two equally important roles, will help to ensure a pan-EU perspective in the future regime. In its role as a standard-setter, the EBA drafts binding technical standards. This could be key to ensuring convergence in national approaches as well as transparency vis-à-vis market players regarding the details of the possible measures to be applied. In its role as a supervisory authority, the EBA is involved in the resolution colleges and, even more importantly, its mediation powers have the capacity to actively foster cooperation and coordination, including in practice.

The full details of the new framework are not known at the time of writing. However, it will be crucial for financial stability and integration that the new framework ensures harmonisation and the application of all aspects of the framework across Member States. For instance, to swiftly and effectively resolve a cross-border financial institution, the complex issue of property rights of stakeholders will need to be addressed. It will be important to properly balance the fundamental rights of shareholders and creditors with the general interest in the

stability of the financial system. Likewise, all aspects of temporary credit institutions or "bridge banks"<sup>87</sup>, which are currently emerging as a key resolution tool, will need to be tackled. Last, but not least, the question of funding bank restructurings and resolutions will need to be resolved.

## B. REFORMING THE FISCAL AND MACROECONOMIC FRAMEWORK

### FISCAL AND ECONOMIC GOVERNANCE

Since the outbreak of the sovereign debt crisis, the economic governance of the EU, in particular within the euro area, has been quickly evolving and has undergone far-reaching reforms. A key milestone was the adoption of the so-called "six-pack" on economic governance by the Council and the European Parliament in autumn 2011. It consists of six legal acts, which (i) revise the Stability and Growth Pact and the sanctions mechanism; (ii) introduce a new macroeconomic imbalances surveillance procedure and a related sanctions mechanism; and (iii) introduce a directive on national fiscal frameworks. Moreover, during the most recent European Council meetings, the Heads of State or Government have shown a strong commitment to deepening economic coordination and strengthening governance mechanisms and their enforcement, in particular for the euro area countries.

#### The economic governance "six-pack"

The overarching objective of the reformed economic governance framework is to institute deeper coordination and mutual surveillance among Member States, with stronger enforcement rules for euro area countries. Besides greater peer pressure, the reformed framework should also reinforce market pressure by making it easier for markets to monitor key policy choices of national governments.

<sup>87</sup> A bridge bank is a legal entity that is wholly owned by one or more public authorities and that is created for the purpose of carrying out some or all of the functions of an institution under resolution and for holding some or all of the assets and liabilities of an institution under resolution.

Regarding fiscal policy surveillance, the main changes focus on the following four areas:

- (i) Stronger regulation under the “preventive” arm of the Pact as part of a broader annual review process (the “European Semester”). In particular, a new expenditure benchmark is being introduced, with the aim of preventing expenditure from growing in excess of potential GDP growth and thus avoiding the financing of expenditure out of windfall revenues in times of economic boom.
- (ii) Stronger regulation under the “corrective” arm of the Pact, placing more emphasis on the public debt criterion. This means targeting the reduction of the debt-to-GDP ratio towards the reference value of 60% of GDP through the introduction of a numerical 1/20th annual reduction benchmark.
- (iii) A new directive establishing minimum standards for domestic fiscal rules.
- (iv) Greater scope for financial and non-financial sanctions. It is noteworthy that earlier and more graduated financial and political sanctions have been introduced to encourage Member States’ compliance.

Moreover, the decision-making procedure under the Stability and Growth Pact has been made more stringent. In particular, its degree of automaticity has been increased through the introduction of reverse qualified majority voting: certain recommendations of the Commission will be deemed adopted *unless* the Council rejects them by a qualified majority within a certain period of time.

In addition to fiscal surveillance, a new macroeconomic surveillance framework will monitor potential internal and external imbalances. This new procedure will be specifically aimed at identifying and addressing macroeconomic imbalances and situations of deteriorating competitiveness, notably through a macroeconomic scoreboard. The new

mechanism will apply to all 27 Member States, with a preventive and a corrective arm. To deter non-compliance with recommendations, a sanctions mechanism, inspired by the excessive deficit procedure for fiscal surveillance, is foreseen for euro area countries. The regular publication of the scoreboard by the Commission will facilitate the monitoring by markets of competitiveness developments in individual euro area countries.

While the proposed reforms under the six-pack represented important steps in the right direction, they fell short in reassuring markets about the sustainability of public finances in the euro area. In many respects, they lacked the necessary force to induce governments to make meaningful changes to their domestic arrangements and, in particular, to consolidate their public finances sufficiently in economic good times. Moreover, the existence of a wide range of escape clauses and special factors suggest that some rules may be difficult to enforce in practice. Similarly, despite improvements, insufficient automaticity in sanctions still leaves a considerable degree of administrative and political discretion in the decision-making process at each stage of the excessive deficit procedure.

As a follow-up to the six-pack, and in order to implement the commitments of the European Council of 26 October 2011, the European Commission presented in November 2011 two proposals for fiscal surveillance under Article 136 Treaty on the Functioning of the European Union. The first proposal seeks to strengthen budgetary surveillance by (i) requiring ex ante evaluation of draft national budgets by the Commission and the Eurogroup; (ii) establishing a budget balance rule to implement the medium-term objective of the Stability and Growth Pact in national legislation; and (iii) setting up independent fiscal councils. The second proposal focuses on stronger surveillance mechanisms for countries that are receiving financial assistance in connection with an economic adjustment programme.

### The Treaty on Stability, Coordination and Governance in the Economic and Monetary Union

The European Council meetings in late 2011 built on existing reforms and set the way ahead for enhanced economic governance and improved enforcement of common rules. In March 2012, the Heads of State or Government of 25 EU Member States<sup>88</sup> signed the Treaty on Stability, Coordination and Governance in the Economic and Monetary Union, which will enter into force once it has been ratified by at least 12 euro area countries, but no sooner than 1 January 2013. This intergovernmental agreement commits the contracting parties to stronger fiscal discipline, transparency, and deeper fiscal integration.

The most noteworthy feature of this treaty is the requirement to anchor (*ex ante*) balanced budget rules in structural terms into national legal systems in the participating Member States, preferably at constitutional or equivalent level, including an automatic correction mechanism. The Court of Justice of the European Union will have jurisdiction over the transposition into national legislation. Moreover, the euro area countries have committed themselves to more automaticity in the excessive deficit procedure.

The treaty also formally introduces the Euro Summit as the venue to coordinate economic policies in the euro area at the level of Heads of State or Government; contracting parties other than those whose currency is the euro shall also participate in case issues such as the global architecture of the euro area are discussed. Finally, the *ex ante* reporting of national debt issuance plans to the Council of the European Union and the European Commission represents a further step towards more coordinated and integrated government bond markets in the euro area.

Overall, the governance reform targets the prevention of unsustainable fiscal developments and diverging competitiveness trends through stricter rules, as well as through peer pressure and market pressure. These should help to address

the underlying causes of the current sovereign debt crisis and to alleviate an important source of financial instability. This should in turn provide the basis for more resilient sovereign bond markets in the euro area and have beneficial effects for financial integration.

### SOVEREIGN DEBT CRISIS MANAGEMENT INSTRUMENTS

New crisis resolution instruments have been created over the past two years to guarantee the financial stability of the euro area. The European Financial Stability Facility (EFSF) was established in June 2010 while the European Stability Mechanism (ESM) will enter into force in July 2012.

The main rationale for the EFSF and ESM's core activities is to relieve a euro area country from market pressure for a limited period of time to allow it to adjust in times of severe economic stress. During 2011 European leaders increased the flexibility and size of both instruments, as all changes to the EFSF also apply to the ESM.

In July 2011 euro area Heads of State or Government agreed to augment the crisis resolution toolbox of the EFSF/ESM. First, the EFSF was given the power to conduct secondary market interventions if an ECB analysis recognises the existence of exceptional financial market circumstances and risks to financial stability. These interventions are aimed at supporting the functioning and appropriate price formation of government bond markets in exceptional circumstances if the limited liquidity of markets threatens financial stability.

Second, the recently foreseen use of EFSF loans for the recapitalisation of banks will allow negative feedback loops between sovereigns and the banking sector, such as have been seen during the current crisis, to be weakened. By ensuring the capacity of the government concerned to finance bank recapitalisation at sustainable borrowing costs, it should help to

<sup>88</sup> Both the Czech Republic and the United Kingdom decided to opt out of the agreement.

preserve financial stability in the euro area as a whole and within euro area countries and limit the contagion of financial stress.

Finally, euro area Heads of State or Government have agreed to add precautionary programmes to the toolbox of the EFSF. The objective is to support sound policies and prevent crisis situations from developing by encouraging countries to secure their access to EFSF assistance before they face difficulties in raising funds in the capital markets. The new, less cumbersome procedures should allow countries to react in a timelier manner and should send a positive signal to financial markets that this is only a short-term arrangement.

In October and December 2011 euro area Heads of State or Government agreed to increase the effective intervention capacities of the EFSF and the ESM through leveraging. The initial capacities of €440 billion and €500 billion, respectively, have been increased via a bond insurance scheme, and the creation of co-investment funds, with the aim of attracting additional funds from public and private sources.

On 2 February 2012 euro area countries signed the Treaty establishing the European Stability Mechanism (the ESM Treaty). Prior to this, on 30 January the euro area Heads of State or Government had decided to undertake efforts to allow the ESM to enter into force in July 2012. In addition, its operational flexibility was enhanced; in emergency situations, decisions on granting financial assistance may be taken with a majority of 85%, as opposed to the usual standard of mutual agreement. It was also decided that, after 1 March 2013, euro area countries will only be able to apply for financial assistance from the ESM if they have ratified the Treaty on Stability, Coordination and Governance in the Economic and Monetary Union. The ESM Treaty also stipulates that, from 1 January 2013, all euro area government bonds with a maturity beyond one year must include collective action clauses. Private sector involvement should be considered

only in exceptional cases, in accordance with IMF principles and practices.

In general terms, these financial assistance arrangements should help to diminish the overshooting of markets and limit contagion effects across the euro area. The negative effects of financial instability and uncertainty on financial integration observed during the crisis should thereby be reduced. Finally, EFSF and ESM securities are liquid euro area-wide assets and could therefore have beneficial effects for financial integration.

#### 4 CONCLUSIONS

This Special Feature has shown that the pre-crisis inadequacies of the EU financial and institutional framework played an important role in undermining the stability and integration of the euro area financial sector during the crisis. It argues that the current reforms in the EU have the potential to create positive and mutually reinforcing effects between stronger financial and institutional frameworks and financial integration. They will strengthen the resilience of the financial markets and help to mitigate the risks of the vicious circle of market instability and fragmentation observed during the crisis. At the same time, the ongoing reforms make decisive steps towards stronger EU integration, by enhancing coordination and further limiting regulatory arbitrage. However, challenges remain.

Looking forward, it will be crucial that the current regulatory and supervisory initiatives to foster harmonisation are completed.

The new EU framework for bank recovery and resolution is a step in the right direction, as are the creation of the ESRB, which is in charge of macro-prudential oversight, and the establishment of the three new ESAs with powers in the area of micro-prudential supervision. The design as a coordination framework means that national authorities will ultimately retain competence for most

decisions, but national authorities will be strongly encouraged to reach joint decisions in resolution colleges on the ways to handle bank crises, although their actions are likely to be conditioned by their accountability to their own taxpayers, given that ultimate fiscal responsibility still rests with national authorities. Furthermore, the resolution of a cross-border financial institution under the new framework would still be a highly complex task, as several national authorities, national deposit insurance funds and national resolution funds would be involved.<sup>89</sup>

For the euro area, a resolution authority, composed of national supervisors, including or combined with a resolution fund, in principle could provide an effective solution in the medium term which could be transformed into an integral EU resolution framework on a full EU-wide basis in the longer term. However, such a fundamental regime shift would have to be integrated into a comprehensive reform of the overall EMU institutional framework.

On the basis of frequent peer reviews, qualitative assessments and stocktaking of best practices, the current framework could pave the way for these envisioned pan-EU initiatives. The review of the new EU supervisory authorities in 2014 may be a good occasion to consider the suitability of moving to a more European solution for both supervision and resolution.

Whether the EU will muster the political will to move to integrated EU supervision and resolution frameworks will also depend, to some extent, on the effectiveness of public/private burden-sharing. The establishment of ex ante funded resolution funds (and eventually an EU-level fund of resolution funds, or a single EU resolution fund) together with the use of “bail-in-able” instruments would be important steps forward.<sup>90</sup>

The globalisation of financial markets adds another layer of complexity. Given the global nature of many markets, it is crucial for financial integration across the globe, efficiency,

a level-playing field, and the prevention of regulatory arbitrage that the current and future EU frameworks for supervision, regulation and crisis management are fully in line with global standards, while taking into account the specificities of the EU.

Important steps have also been taken in the field of economic governance. Rules have been enhanced with a strong focus on their implementation and enforcement. A particular milestone is the governance “six pack”, which reinforces the Stability and Growth Pact and introduces a mechanism to monitor and correct macroeconomic imbalances. The Treaty on Stability, Coordination and Governance in the Economic and Monetary Union represents a strong commitment to future economic policy making that is more coordinated at the European level. The intention to incorporate numerical values in binding national primary legislation and to allow supervision by the Court of Justice of the European Union should lay the foundations for stable public finances and foster growth in the long term.

Crisis management has also been greatly improved. By broadening the EFSF/ESM’s toolkit, the European crisis resolution instruments have been better equipped to cope with swift and rapid market movements. With a permanent crisis mechanism coming into play with the ESM, investor uncertainty – a significant impediment to financial integration – is expected to decrease over time.

<sup>89</sup> A previous mapping exercise by the ECB identified more than 40 banking groups with significant cross-border activities which were headquartered in the EU. Notably, 17 of them had a presence in at least ten Member States.

<sup>90</sup> “Bail-in-able” instruments are liabilities of an institution that, in case of resolution, can be written down or converted with a view to either recapitalising the institution to restore its soundness or to providing capital for a bridge bank that takes over some or all of the assets and liabilities of the institution under resolution.

## E SECTORAL BALANCES AND EURO AREA FINANCIAL INTEGRATION

*In a financially integrated area comprising several countries, financial deficits (or surpluses) of economic sectors within one country can, in principle, be financed equally well from (or invested in) any country within the area. More than thirty years ago Feldstein and Horioka<sup>91</sup> noted that national investments and savings tend to be highly correlated across countries, and interpreted this as evidence that world financial markets were not well integrated.*

*Following this line of reasoning, cross-country patterns in financial balances can provide a complementary perspective on financial integration. This Special Feature examines how aggregate and sector imbalances have developed across countries in the euro area in recent years. It also shows how they have affected intra euro area financial flows and heterogeneities in financial and non-financial leverage ratios.*

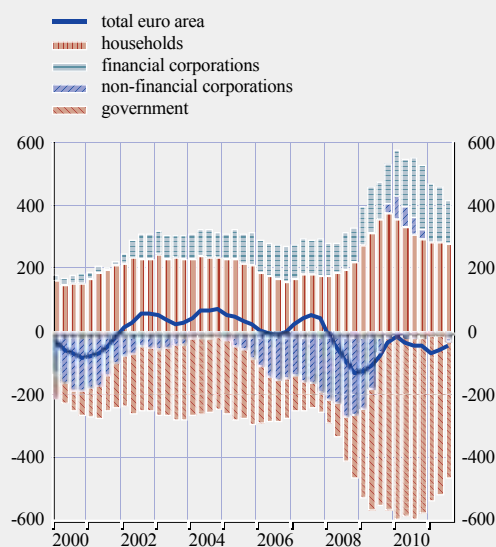
*The analysis suggests that euro area financial integration increased during the boom preceding the crisis, with deficits and surpluses increasingly diversified across countries and intra euro area financial transactions gaining weight. At the same time, leverage increased remarkably in countries presenting external aggregated deficit. These trends have been partially reversed in recent times.*

### I INTRODUCTION

A traditional approach to international finance analysis uses the balance of payment current account data to measure imbalances across countries. Sectoral accounts (or “flow-of-funds” data) provide an additional breakdown of the external deficit or surplus of a country (or economic area) into the contributions by the various domestic sectors. In this vein, Chart 60 uses euro area sector accounts (EAA) to break down the euro area external balance into deficits and surpluses (net financial balances or net lending/net borrowing) of households, non-financial corporations, financial corporations and government.

Chart 60 Euro area sectoral balances

(four quarter sums; EUR billions)



Sources: EAA (ECB and Eurostat).

The chart illustrates that the 2006-08 boom was characterised in the euro area by a strong increase in private sector borrowing, which was then reversed in 2008-10. This later reversal found a counterpart in a considerable increase in net borrowing of government.

These developments at euro area level hide developments within the area. In particular, one may question whether the financial balances described above present a national bias (i.e. with a deficit/surplus in a sector of a given country being offset by surpluses/deficits of sectors resident in the same country) or not.

In this respect, in their aforementioned contribution, Feldstein and Horioka found that national investments and savings tended to be highly correlated across countries, and interpreted this as evidence that world capital markets were not well integrated (so-called “Feldstein-Horioka puzzle”). To explain this, they hypothesised that portfolio preferences and

<sup>91</sup> Feldstein, M.S. and Horioka, C.Y. (1980), “Domestic saving and international capital flows”, *Economic Journal*, Vol. 90, pp. 314-329.

institutional rigidities impede long-term capital flows – short term capital mobility would not be affected, as revealed by the fact that short-term covered interest rate differentials are negligible.

In order to use sectoral financial balances to learn about financial integration, countries in the euro area mentioned in the Special Feature are divided for illustrative purposes into “surplus countries” (countries predominantly running current account surpluses before the crisis, i.e. Belgium, Germany, Luxembourg, the Netherlands, Austria and Finland) and “deficit countries” (Ireland, Estonia, Greece, Spain, France, Italy, Cyprus, Malta, Portugal, Slovakia and Slovenia).<sup>92</sup> The analysis is undertaken on the basis of the EAA and the national sector accounts. Section 2 focuses on the sectoral deficits/surpluses, while section 3 looks into the main components of such imbalances: saving and investment. Section 4 deals with the financial transactions that finance the imbalances, and section 5 discusses the balance-sheet implications by looking into the leverage ratio. Section 6 draws some conclusions.

## 2 SECTORAL AND GEOGRAPHICAL IMBALANCES

Chart 61 shows the financial balances of the two groupings distinguishing government sector and private sector balances.<sup>93</sup> The light dashed lines show total balances, broadly corresponding to the current account surplus for each group. The blue line, as in Chart 60, corresponds to the total euro area external balance.

Broadly speaking, three periods can be distinguished. Before 2006, sector imbalances seemed to roughly offset each other at national level, public deficits being largely mirrored by private sector surpluses, as implied by the limited external surpluses or deficits existing then. In the 2006-08 period, which preceded the most acute phase of the financial crisis and was characterised by strong growth and wider macro imbalances in the area, increasing negative balances in the deficit countries – largely driven by the private sector in some of those countries – were matched

by a positive net private sector balance in the surplus countries. This evidence, observed in the more mature phase of the economic expansion preceding the financial crisis, is consistent with increased capital market integration.<sup>94</sup> It suggests that, during that period, a marked (and possibly unsustainable) economic expansion in the deficit group was financed to an increased extent by savings originating in the surplus group. This is indeed confirmed by the analysis on gross financial transactions which is undertaken below (see Chart 63). At the same time, these

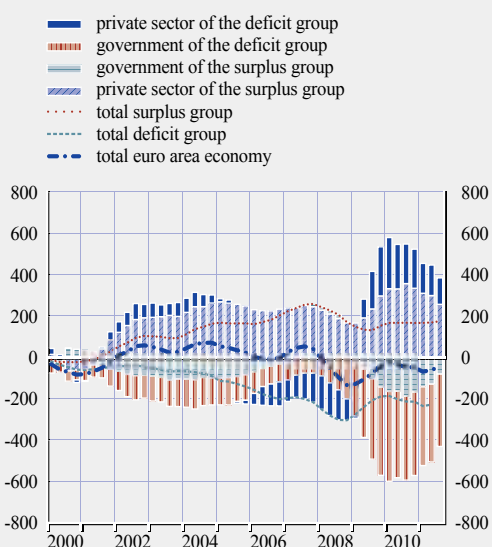
92 Each grouping is in fact rather heterogeneous in itself, comprising countries with very large external deficits or surpluses and others with nearly balanced current account positions. In addition, the countries differ considerably in other respects, such as the fiscal position or the presence of specific boom-bust cycles. Obviously, the composition of the group is closely tied to the reference period and would change over time. Germany, for instance, would have been in the “external deficit group” in case the exercise had been conducted in earlier years, while Italy and France would have been in the surplus group.

93 Defined here as the sum of all sectors other than government sectors.

94 O. J. Blanchard and F. Giavazzi for instance suggested such a process to be at work in the case of Portugal and Greece in “Current Account Deficits in the Euro Area: The End of the Feldstein Horioka Puzzle”, in G. Perry and W. Brainard, eds., *Brookings Papers on Economic Activity*, September 2002.

Chart 61 Euro area sectoral balances, by country grouping

(four quarter sums; EUR billions)



Sources: EAA and national sector accounts (ECB and Eurostat).



developments may also reflect the impact of “regional” demand booms and supply rigidities on competitiveness, in a context of insufficiently integrated labour or goods market.<sup>95</sup>

After 2008, the pattern changed again, with the financial deficits of the private sector of the deficit countries sharply turning into surpluses, accompanied by higher surpluses in the surplus countries and matched by higher government deficits across the board. On one hand, this reflects the adjustment process, with ensuing saving and deleveraging in the private sector, and the support provided by governments to the national economies.

On the other hand, it can also be interpreted as a decline in capital market integration, as suggested by other indicators shown in this Report. At the euro area level, in the absence of an improvement in the external balance (the solid line in Chart 61), mounting private sector surpluses had for counterpart increased government deficits, in particular in the deficit countries.

### 3 SAVINGS AND INVESTMENT

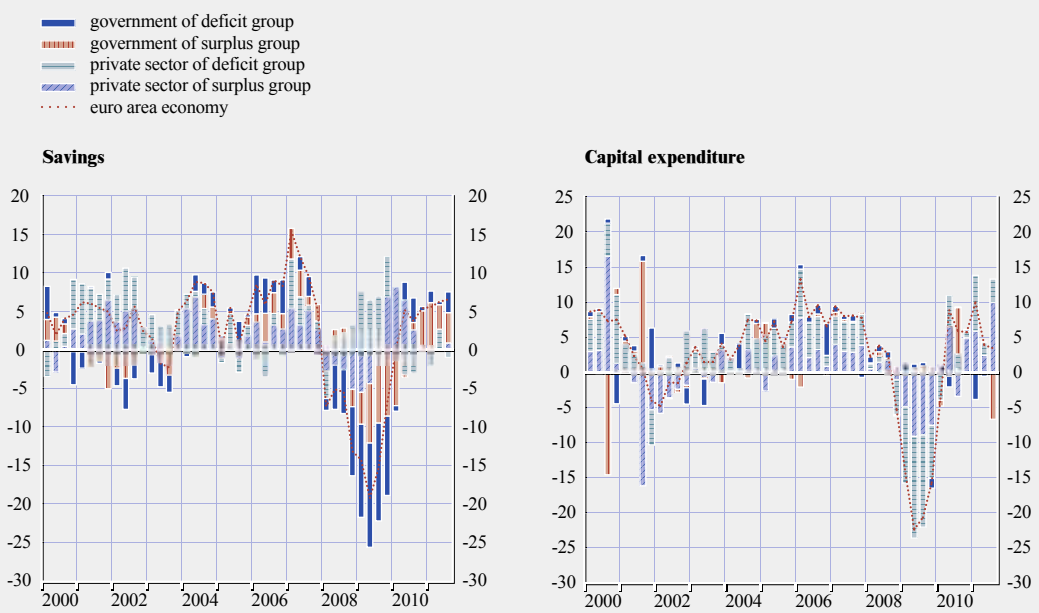
Chart 62 shows the developments in the two main components of net balances: savings and capital formation (data are expressed in yearly growth rates, as opposed to the four quarter sums in the earlier charts).

In the years prior to the crisis, most of the increases in savings were located in the surplus countries, particularly as a result of high retained earnings by non-financial corporations there, while most of the investment growth took place in the deficit countries. While the crisis had a dampening effect on investment across the board (albeit more acutely in the previously booming deficit countries), savings did present clearly different patterns in the two country groupings, to a certain extent also offsetting each other. The private sector savings of the deficit countries sharply

<sup>95</sup> See box 3 entitled “A sectoral account perspective of imbalances in the euro area” of the *Monthly Bulletin*, ECB, February 2012.

**Chart 62 Savings and capital expenditure**

(annual percentage change; percentage point contributions)



Sources: EAA and national sector accounts (ECB and Eurostat).

increased up to the end of 2009, as a reflection of the economic adjustment process, while those of surplus countries contracted abruptly. This was accompanied by extraordinarily high government dissaving, particularly in deficit countries. During 2010 and 2011 the sovereign debt market tensions and the realignment of fiscal policies towards consolidation resulted in positive contributions by governments to savings growth, while contributions by the private sector of the deficit countries returned to negative territory owing, in particular, to a reduction in government income transfers.

At the same time, growth in private savings in the surplus countries turned positive, reflecting again strong retained earnings of the corporate sector.

#### 4 CROSS-BORDER TRANSACTIONS

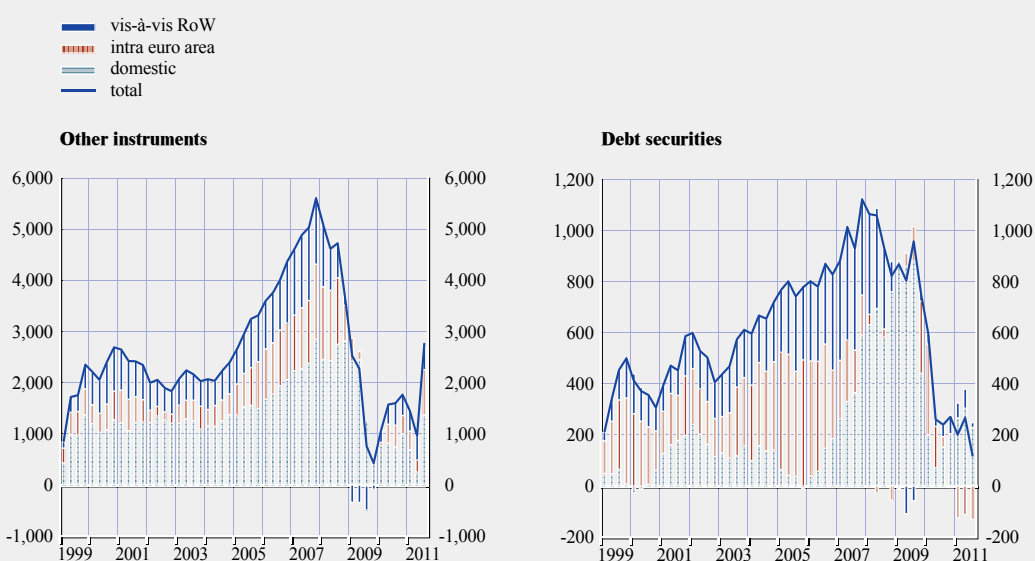
Until 2008, the rise of intra euro area regional imbalances was accompanied by an increase in intra euro area cross-border financial transactions. Chart 63 shows total transactions in financial assets held by all euro

area creditors broken down by residence of the debtor: domestic, other euro area resident (i.e. intra euro area cross-border transactions), and not resident in the euro area (i.e. rest of the world). A distinction is also made between debt securities (second panel) and other instruments (first panel).

The relative share of intra euro area cross-border transactions increased steadily until mid-2008 for deposits, loans and equity (Chart 63.1). This matches well the increase in integration already noted in the sectoral balances. These transactions nearly vanished in the last quarter of 2008 (with four-quarter moving sum transactions rapidly falling from that quarter onwards) in the wake of the Lehman Brothers bankruptcy, and in a context of overall contraction of economic activity and the associated reduction of financial transactions. Thereafter they rose again, although not returning to the high previous levels. The latter development however masks divergent dynamics in the components of the aggregate, with cross-border deposits (largely interbank) losing weight and cross-border

**Chart 63 Total transactions in financial assets held by euro area creditors, by residence of the debtor**

(four quarter sum; EUR billions)



Sources: EAA and national sector accounts (ECB and Eurostat).

equity gaining weight.<sup>96</sup> As noted in chapter 1, equity markets are the segment which had the smallest reduction in cross-border integration within the euro area during the crisis. It should be noted that no data exist that would permit identifying which country grouping provide finance to whom.

As for debt securities (Chart 63.2), a considerable increase in intra-area flows occurred in the first half of the decade. Though being again unable to identify which group is adding to each instrument and against which group, one can conjecture that surplus countries purchased debt securities issued by deficit countries in the boom phase. In early 2007, the share of intra euro area cross-border transactions began to show signs of moderation, more than a year earlier than was the case for the other instruments, and rapidly vanished in a context of increasing uncertainty about private debt

securities (in particular regarding structured products). In early 2009 intra euro area cross-border transactions in debt securities resumed as governments increased their issuance of debt and MFIs stepped up their purchases. They declined again from 2010 onwards, owing to sovereign debt market tensions and associated divestments by financial institutions.

## 5 LEVERAGE AND CAPITAL BUFFERS

The movements just described also resulted in different debt accumulation patterns across the euro area (see Chart 64).

The debt ratios, in terms of income or GDP as shown in Chart 64.1 for the household and the

<sup>96</sup> The increase in transactions in the last quarter reflects interbank lending between the Eurosystem and other MFIs as a result of the unconventional liquidity support measures.

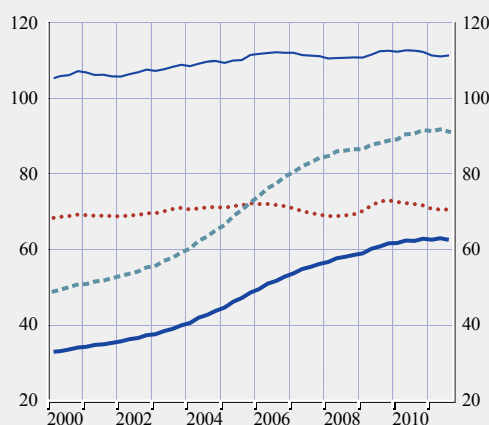
**Chart 64 Leverage in the non-financial sectors**

(debt in percent of gross disposable income, HGDI, for households; or GDP, for non-financial corporations)

(percentages of notional assets; year-on-year changes in percentages; contributions to changes)

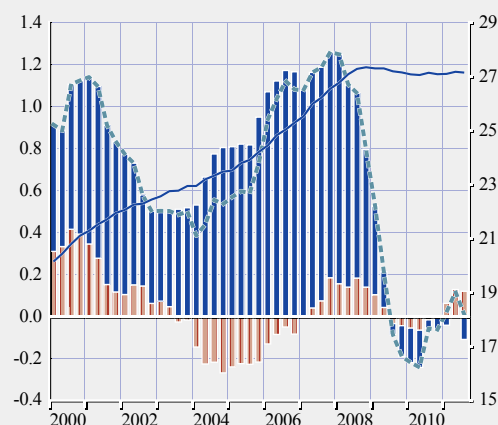
### Debt ratios of households and NFCs

- NFCs in deficit countries (percentage of GDP)
- ... NFCs in surplus countries (percentage of GDP)
- - - households in deficit countries (percentage of HGDI)
- households in surplus countries (percentage of HGDI)



### Changes in notional debt-to-assets ratio of the non-financial sectors

- contribution by deficit countries to change in euro area debt-to-asset ratio
- ... contribution by surplus countries to change in euro area debt-to-asset ratio
- - - total change in euro area debt-to-asset ratio
- euro area debt-to-asset ratio (right-hand scale)



Sources: EAA and national sector accounts (ECB and Eurostat).

Notes: Notional concepts (assets and debt) result from the accumulation of transactions on the stock at the end of the first quarter of 1999. The notional debt-to-asset ratio is calculated as notional debt to notional assets. By construction, the dynamics of the notional ratio is not affected by asset price changes.

NFC sectors respectively, increased steadily in the external deficit group, while they remained virtually unchanged in the external surplus group. In the case of households, developments were driven primarily by the housing boom in some countries of the external deficit group, while the increase in the NFC sector were more broadly based across countries. Chart 64.2 shows the dynamics of leverage in more detail presenting the changes in the debt-to-asset ratio<sup>97</sup> of the non-financial sectors as a whole broken down by the contributions of the two country groups. The chart shows only changes in the ratio that are due to transactions (i.e., changes to the “notional leverage ratio”<sup>98</sup>), not those caused by changes in asset prices. The high increase in leverage in the euro area, particularly in the period 2003-2006, was exclusively due to the deficit countries. The non-financial sectors of the surplus countries were actually deleveraging in terms of the debt-to-asset ratio, in particular in the NFC sector. Similarly, and after the period 2007-2008 where the external surplus countries also contributed to the total increase in leverage, the correction induced by the crisis in 2008-2009 was again mainly a phenomenon of the deficit countries. These developments reflect the impact on the balance sheets of non-financial corporations in the deficit countries of their net financial balance configuration (as they were the main contributor to the overall private sector deficit), and the impact of the housing boom on the household balance sheets of some deficit countries.

In parallel, the build-up of leverage in the non-financial sector was not accompanied by a parallel build-up of precautionary capital buffers by financial intermediaries. On the contrary, the financial institution sector appears to have been a major pro-cyclical contributor to overall leverage growth in the years prior to the crisis. Chart 65 sheds light on the geographical distribution of MFI capital in the euro area, as calculated using sector accounts data and the notional ratio concept mentioned above.<sup>99</sup>

While, broadly speaking, the MFIs in the surplus countries maintained a constant capital

ratio, deficit country MFIs reduced their ratios progressively during the years preceding the crisis. Albeit starting from a considerably better position, by 2009 the latter country group had almost caught up with the former in terms of capital position. In addition, the banks in the deficit countries only started to correct their capital shortages after the Lehman Brothers bankruptcy, while banks in surplus countries started increasing capital ratios a year earlier as they were first affected by losses in structured private debt products.

Looking in more detail at the reasons behind the different capital dynamics, Chart 66 (showing the retained earnings in the two groups of countries, which cumulate into the capital base

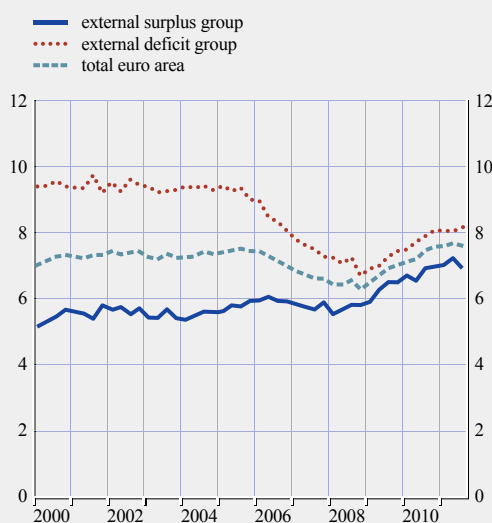
97 Debt to total assets, including non-financial assets, which provides a different perspective on debt sustainability insofar as it relates debt developments to collateral/assets developments.

98 For more detail on the compilation of the notional ratio, see the box entitled “Indebtedness and leverage methodology” in the article “The financial crisis in the light of the euro area accounts: a flow-of-funds perspective” in the October 2011 issue of the ECB’s Monthly Bulletin.

99 Note that these capital ratios are not weighted for risk and in particular disregard any off-balance sheet elements.

Chart 65 Notional capital ratio of MFIs

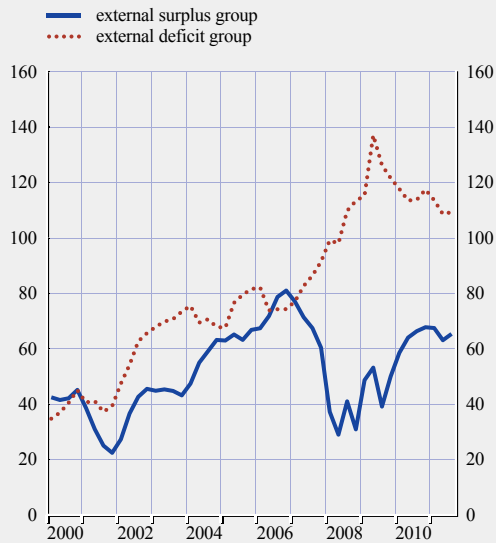
(ratio of notional net assets to notional assets; percentages)



Sources: EAA and national sector accounts (ECB and Eurostat).  
Note: See notes to Chart 64.

**Chart 66 Retained earnings of financial institutions**

(four quarter sums; EUR billions)



Sources: EAA and national sector accounts (ECB and Eurostat).

of these institutions) suggests that the lower capital accumulation in the deficit countries were not a result of more subdued profits, which were in fact much higher in the deficit countries from 2007 onwards. At the same time, the data also show that the different dynamics are not explained either by stronger equity issuance by MFIs in the surplus group (which amounted to €73 billion in the three years to the third quarter of 2011, compared with €153 billion in deficit countries). The stronger leverage path followed in the deficit countries was therefore due to asset accumulation in that country group, much faster, in comparison to the surplus countries, than the accumulation of net assets through profits and equity issuance.

## 6 CONCLUSIONS

The analysis of the sector financial balances in the euro area provides some evidence that a process of financial integration took place in the euro area during the economic expansion preceding the financial crisis, with high deficits in the external deficit countries, in particular in

the private sector, being financed by surpluses in the external surplus countries group.

Intra euro area financial transactions also increased strongly during the expansion period, reflecting financing flows from the surplus countries group to the deficit countries group. This resulted in remarkably divergent dynamics of private sector financial gearing in the two groups, with leverage increasing at a much faster pace in the deficit countries. At the same time, the capital position of MFIs in the two groupings converged as the deficit countries caught up with the surplus countries, due to a faster accumulation of intermediated assets compared to capital in the former country group.

The financial crisis resulted in an abrupt, albeit partial, reversion of the integration trends described above as the financial deficits of the private sector of the deficit countries sharply turned into surpluses and as government deficits started to accommodate domestically the mounting private surpluses. Thus, a certain national bias in the relationships between deficits and surpluses seems to have started to re-emerge again.

This reversal was also visible in financial transactions, as the weight of intra euro area flows started to decline, in particular for interbank transactions. At the same time, the private sector of the external deficit group started to deleverage, finding in the issuing of debt by the domestic government sectors a partial counterpart for such process.



## CHAPTER III

### EUROSYSTEM ACTIVITIES FOR FINANCIAL INTEGRATION

*The Eurosystem distinguishes between four types of activity through which it contributes to the enhancement of financial integration: (i) advising on the legislative and regulatory framework for the financial system and direct rule-making; (ii) acting as a catalyst for private sector activities by facilitating collective action; (iii) enhancing knowledge, raising awareness and monitoring the state of European financial integration; and (iv) providing central bank services that also foster European financial integration. The following sections provide an overview of the Eurosystem's contributions in these areas, focusing on the initiatives pursued during 2011.*

#### I THE LEGISLATIVE AND REGULATORY FRAMEWORK FOR THE FINANCIAL SYSTEM

While the Eurosystem considers financial integration to be first and foremost a market-driven process, the legislative and regulatory framework for the financial system clearly plays an important facilitating role.

Against this background and in line with their advisory and regulatory functions<sup>1</sup>, the ECB and the Eurosystem monitor and actively contribute to the development of the EU legislative and regulatory framework.

More specifically, the ECB and the Eurosystem provide input for strategic policy deliberations, such as on the overall EU financial services policy strategy or on the further development of the EU framework for financial regulation and supervision. Examples of such input are the publication of Eurosystem position papers on the websites of the ECB and NCBs and informal discussions with the regulatory and supervisory committees. Furthermore, the ECB and the Eurosystem provide both formal opinions and informal input for EU and national legislation in the area of financial services. They may also contribute to ex post evaluation of regulatory measures.

The EU has taken important steps towards strengthening the regulation of the banking and investment sector. Following the agreement reached on new capital and liquidity standards in December 2010 (Basel III) by the Basel Committee on Banking Supervision (BCBS), the European Commission issued proposals in July 2011 for legislation to transpose the Basel III framework into European law. The proposal would replace the current CRD<sup>2</sup> with a new Capital Requirements Directive (CRD IV) and a Capital Requirements Regulation (CRR). In its Opinion of 25 January 2012, the ECB expressed its general support for the Commission's proposals.<sup>3</sup>

The proposed legislation, which would be directly applicable in all Member States, takes a "single European rulebook" approach. This approach is expected inter alia to further enhance financial integration in Europe. As mentioned in the ECB Opinion, the ECB supports the idea that this approach should be complemented with a framework that would allow national authorities to strengthen prudential rules in a coordinated manner across Europe, if this is justified on the grounds of financial stability risks. This framework should allow imposing stricter requirements in their national legislation, i.e. to tighten the quantitative ratios and limits for capital; limits on large exposures; liquidity requirements and leverage ratio, following a notification of the proposed measures to the ESRB. At the same time definitions should be maintained, thus respecting the principle of an EU rulebook. Furthermore, this framework should be subject to strict safeguards, under the coordination

1 According to the Protocol on the Statute of the European System of Central Banks and of the European Central Bank, the ECB must be consulted, within its field of competence, on any proposed Union act or any draft legislative provision proposed by national authorities. Furthermore, the ECB has the right to issue regulations in certain areas, for example in the field of payment systems and statistics.

2 Directives 2006/48/EC and 2006/49/EC.

3 See Opinion of the ECB of 25 January 2012 on a proposal for a Directive on the access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms and a proposal for a Regulation on prudential requirements for credit institutions and investment firms (CON/2012/5).

of the ESRB, in order to guard against possible unintended consequences and spillover effects.

Another milestone in financial regulation was the release of the review of the MiFID<sup>4</sup> by the Commission in October 2011. The proposal consists of a Directive and a Regulation which are aimed at making financial markets more efficient, resilient and transparent, and to strengthen the protection of investors. It will also increase the supervisory powers of regulators and provide clear operating rules for all trading activities. Harmonised rules in this field will also contribute to more financial integration. The ECB published its Opinion on the proposal in March 2012.

#### EU SUPERVISORY ARRANGEMENTS

Following the implementation of the new EU supervisory framework, the ESRB and the ESAs<sup>5</sup> formally started to operate on 16 December 2010 and 1 January 2011, respectively.

During 2011 the activities of the ESRB were aimed in particular at ensuring adequate integration of macro-prudential and micro-prudential supervision of the EU financial system. In this respect, on 21 September 2011, the ESRB issued (i) a Decision on the provision and collection of information for the macro-prudential oversight of the financial system within the Union (Decision),<sup>6</sup> and (ii) a Recommendation on lending in foreign currencies.<sup>7</sup>

*As regards the provision and collection of information*, the Decision sets out the aggregated information required by the ESRB<sup>8</sup> in order to perform its macro-prudential oversight tasks. In particular, information must be provided on a regular basis by:

- the ECB<sup>9</sup>, which shall report datasets, both published and non-published, for the Member States whose currency is the euro in the area of monetary and financial statistics, which are regulated in respect of content, frequency and timeliness by the legal acts referred to in Annex I of the Decision, or

as established by common practice. To the extent that data for Member States whose currency is not the euro are made available on a voluntary basis with the approval of the relevant national central banks, the ECB shall also report that data.

- the ESAs<sup>10</sup>, which shall report aggregated information on at least three legal persons, none of which represents 85% or more of the relevant market, whether it consists of one or more Member States or the Union as a whole. However, if dispersion measures are provided in addition to the aggregated information, the aggregated information comprises data on at least five legal persons when referring to publicly available data, and data on at least six legal persons when there is a need to protect confidential firm-level data. Further rules are moreover provided for the single ESAs.

The Decision also grants the ESRB the power to make requests for aggregated information on an ad hoc basis, which may be met by providing information already available or by conducting ad hoc surveys.

*As regards lending in foreign currencies*, the ESRB saw excessive foreign currency lending as significantly increasing systemic risks

4 Proposal for a Directive of the European Parliament and of the Council on markets in financial instruments repealing Directive 2004/39/EC of the European Parliament and of the Council (Recast), COM(2011) 656 final.

5 There are three ESAs, namely the European Banking Authority (EBA), the European Insurance and Occupational Pensions Authority (EIOPA) and the European Securities and Markets Authority (ESMA).

6 Decision of the ESRB of 21 September 2011 on the provision and collection of information for the macro-prudential oversight of the financial system within the Union (ESRB/2011/6).

7 Recommendation of the ESRB of 21 September 2011 on lending in foreign currencies (ESRB/2011/1).

8 The content of the aggregate information has been defined in cooperation with the ECB and the ESAs on the basis of a joint report.

9 Recital 10 of Regulation (EU) No 1096/2010 states that “The ECB should be entrusted with the task of providing statistical support to the ESRB”.

10 Pursuant to Article 15(3) of Regulation (EU) No 1092/2010, the ESRB may request information from the ESAs, as a rule in summary or aggregate form such that individual financial institutions cannot be identified.

for Member States, and potentially a cause of negative cross-border spillover effects. Therefore, it deemed it appropriate to take action in order to (i) limit exposures to credit and market risks; (ii) control excessive foreign currency credit growth and avoid asset price bubbles; (iii) limit funding and liquidity risks; (iv) create incentives to improve risk pricing associated with foreign currency lending; and (v) avoid circumvention of national measures through regulatory arbitrage.

Consequently, the ESRB adopted a set of seven recommendations for national supervisory authorities, providing for an “act or explain” mechanism, according to which the addressees shall take appropriate action or give adequate justification of inaction. The EBA was also recommended to issue guidelines on capital requirements. Unless otherwise specified, the deadline for this is 31 December 2012.

### EU LEGAL FRAMEWORK FOR RETAIL PAYMENTS

Because of rather unsatisfactory migration progress towards the **Single Euro Payments Area (SEPA)**, the Eurosystem drew attention to the need for an end date for the migration to SEPA already in its 6th SEPA Progress Report in 2008. In December 2010, following intense debate between the Eurosystem, the European Commission and the market, the Commission decided to launch a proposal for a Regulation establishing technical requirements for credit transfers and direct debits in euro<sup>11</sup> (the SEPA migration end-date Regulation), which will impose end-dates for migration to SCT and SEPA direct debits (SDD). The ECB welcomed and supported this initiative in its Opinion of 7 April 2011<sup>12</sup>, which pointed out clearly that, unless such a regulation enters into force, the SEPA project would face a serious risk of failure. On 20 December 2011 an agreement was reached between the European Parliament and the Council, implying, among other things, a single migration end-date for credit transfers and direct debits set at 1 February 2014.<sup>13</sup> The regulation was finally adopted on 28 February 2012.

### EU LEGAL FRAMEWORK FOR PAYMENT SERVICES AND SECURITIES

The current legislative projects in the EU have in common the objective of developing an appropriate regulatory framework for clearing and settlement, securities acquisition, holding and disposition, and close-out netting in order to improve the integration of the EU framework and to foster safety and efficiency.

The future **Central Securities Depository Regulation (CSDR)** is aimed at regulating the authorisation, supervision, and cross-border provision of services offered by CSDs. Particular attention is paid to the definition of a CSD’s core functions, namely its notary, safekeeping and settlement functions. Ancillary services offered by CSDs are also defined and include, in particular, granting credit. The CSDR will also address the extent of a passport regime in the EU, namely which types of service CSDs in the EU would be free to provide across borders. Moreover, capital, organisational, and prudential requirements related to risks from core and ancillary services are foreseen for all CSDs in the EU. Finally, the CSDR will provide for open access to CSDs, the requirement for harmonisation of settlement finality rules, an exemption from the application of general criteria where outsourcing of certain tasks is made to a public entity, the harmonisation of settlement periods and an EU-wide settlement discipline regime. In its response on 22 March 2011 to the Commission’s public consultation, the ECB expressed its strong support for the general aims of a future regulation, because the CSDR is regarded as fostering the harmonisation initiatives undertaken in the context of the TARGET2-Securities (T2S) project. The ECB noted that the statutory responsibilities of central

11 Proposal for a Regulation of the European Parliament and of the Council establishing technical requirements for credit transfers and direct debits in euros and amending Regulation (EC) No 924/2009 (COM(2010) 775 final).

12 Opinion on a proposal for a Regulation establishing technical requirements for credit transfers and direct debits in euro (CON/2011/32).

13 31 October 2016 for non-euro area Member States.





banks should be reflected and that consistency with international standards should be ensured.

The aim of the forthcoming proposal for a **Securities Law Directive (SLD)** is to dismantle legal barriers owing to differences in national securities laws that impede efficient cross-border securities holding and disposition in the EU, as flagged by the Legal Certainty Group in its second advice to the Commission.<sup>14</sup> The ECB provided its supportive contribution to two public consultations conducted in 2009<sup>15</sup> and 2011<sup>16</sup> concerning the SLD's objectives of harmonising the legal framework for the holding and disposition of securities in book entry form and the exercise of rights flowing from securities via intermediaries, and of improving the conflicts-of-law regime supporting the above. The authorisation and supervision of account providers will be dealt with in the parallel review of the MiFID. In order to promote global compatibility, the SLD is intended to build on the common concepts developed by the International Institute for the Unification of Private Law (UNIDROIT) (International Institute for the Unification of Private Law) Convention on substantive rules regarding intermediated securities adopted on 9 October 2009 in Geneva by a Diplomatic Conference. The ECB supports this initiative because the harmonisation it may achieve will support the legal architecture of T2S and the Eurosystem's collateral framework.

**Close-out netting** is a crucial risk mitigation technique because it is conducive to reducing bilateral exposures, mitigating credit risk, and lowering transaction costs and capital requirements. Despite harmonisation measures in the past, there is still diversity among close-out netting regimes in the EU. Therefore, the European Commission services launched work in early 2011 on the elaboration of a proposal for an EU netting directive strengthening the protection for close-out netting in the EU. The objectives of a future EU legal act on netting would be to address potential needs arising in relation to the present regulatory treatment of netting in the EU, such as the consistency of

set-off and netting terminology used in the various directives or to solve specific conflict-of-law issues. At the global level, the UNIDROIT Study Group on the netting of financial instruments launched work with a view to setting international principles on the enforceability of netting arrangements.<sup>17</sup> In parallel, the European Commission issued a consultation on bank recovery and resolution on 6 January 2011 suggesting inter alia that a resolution authority should be empowered to suspend (i) the close-out netting rights available to counterparties of failing banks and (ii) the payment and delivery obligations of failing banks. These suspension powers ("temporary stays") are coordinated at a global level by the Financial Stability Board (FSB) and the BCBS. The ECB supports the initiative to strengthen close-out netting rights throughout the EU because the Eurosystem relies on close-out netting documentation for its credit operations. In respect of suspension powers, the ESCB noted in May 2011 that due consideration must be paid to their impact on central banks, CCPs, and payment and settlement systems, which may justify an exemption from the suspension's scope, but that consistency with the future EMIR must also be ensured.<sup>18</sup>

14 See "Second Advice of the Legal Certainty Group: Solutions to Legal Barriers related to Post-Trading within the EU", August 2008, available on the European Commission's website ([www.ec.europa.eu](http://www.ec.europa.eu)).

15 See "ECB contribution to the public consultation concerning 'Legislation on legal certainty of securities holding and dispositions: Consultation document of the Services of the Directorate-General Internal Market and Services'", June 2009, available at the website of the Communication and Information Resource Centre for Administrations, Businesses and Citizens (<http://circabc.europa.eu>).

16 See "ECB answers to the second public consultation concerning legislation on legal certainty of securities holding and dispositions", January 2011, available at the website of the Communication and Information Resource Centre for Administrations, Businesses and Citizens (<http://circabc.europa.eu>).

17 See Paech, P., "The need for an international instrument on the enforceability of close-out netting in general and in the context of bank resolution", UNIDROIT Study Group on principles and rules on the netting of financial instruments, March 2011.

18 See "European Commission's public consultation on the technical details of a possible EU framework for bank recovery and resolution – ESCB contribution", ECB, May 2011, Part II, Section 4, paragraphs 11 and 18.

## EU LEGAL FRAMEWORK FOR OTC DERIVATIVES, CENTRAL COUNTERPARTIES AND TRADE REPOSITORIES

The proposed **Regulation on OTC derivatives, central counterparties and trade repositories** (also referred to as the **European Market Infrastructure Regulation, EMIR**) will stipulate the conditions of authorisation and registration, supervision and surveillance, and requirements for CCPs and trade repositories (TRs) respectively. The proposal also aims to establish a common EU framework for CCPs (across financial products), promoting the integration, safety and efficiency of the EU clearing space. EMIR is the Union's implementation of the G20 commitment in Pittsburgh in September 2009 that all standardised OTC derivatives should be cleared through CCPs by the end of 2012. In its Opinion of January 2011<sup>19</sup>, the ECB noted its concerns that the statutory ESCB competencies in relation to authorising and laying down technical standards for CCPs and TRs (including recognising and concluding cooperative arrangements for third-country infrastructures) and assessing CCPs, as well as the cooperation among supervisors, overseers, and central banks of issue, had yet to be adequately reflected. As regards CCPs, the Presidency's proposal of September 2011 on EMIR<sup>20</sup> acknowledged that central banks participate in colleges for authorising and recognising CCPs and that regulatory technical standards regarding in particular capital requirements, governance, record keeping, margin and collateral, business continuity, liquidity risk controls, default procedures and interoperability are to be developed in consultation with the ESCB. Finally, in the legislative proposals revising MiFID, issued on 20 October 2011, the Commission provided the requisite follow-up to the G20 mandate regarding the electronic trading of OTC derivatives.

## DEVELOPMENT OF AN INTERNATIONAL REFERENCE DATA UTILITY

Work on the development of an international reference data utility, beginning with a

fundamental building block, the legal entity identifier (LEI), has demonstrated the formation of a broadly shared political will at the highest level to work towards that goal now.

The latest expression of support can be found in the G20 Cannes Summit Final Declaration of 4 November 2011, which states: "We support the creation of a global legal entity identifier (LEI) which uniquely identifies parties to financial transactions. We call on the FSB to take the lead in helping coordinate work among the regulatory community to prepare recommendations for the appropriate governance framework, representing the public interest, for such a global LEI by our next Summit."<sup>21</sup>

In December 2011, the FSB set up a global FSB-LEI Expert Group (the FSB-LEI-EG) of public sector representatives, including the active participation of the ECB, which is now developing the recommendations requested by the G20 leaders. The FSB-LEI-EG structured its work into five workstreams: (1) governance, (2) operations, (3) data scope, (4) funding, (5) implementation. The FSB-LEI-EG is supported by a global Industry Advisory Panel.

The recommendations will be submitted to the FSB in the course of April for submission to the G20 in time for the G20 Summit on 18-19 June 2012 in Los Cabos, Mexico.

## 2 CATALYST FOR PRIVATE SECTOR ACTIVITIES

While public authorities have the responsibility of providing an adequate framework, conducive to financial integration, progress in European financial integration ultimately depends on private sector initiatives making full use of cross-border business opportunities.

19 Opinion on a proposal for a regulation of the European Parliament and of the Council on OTC derivatives, central counterparties and trade repositories (CON/2011/1).

20 The text is available on the Council of the European Union's website ([www.consilium.europa.eu](http://www.consilium.europa.eu)).

21 <http://www.g20-g8.com/g8-g20/g20/english/for-the-press/news-releases/cannes-summit-final-declaration.1557.html> (see paragraph 31).

Competition among market players is a major driving force in this regard. In addition, progress made in the field of financial integration also depends on effective collective action, notably where heterogeneous market practices and standards need to be overcome. However, possible coordination problems may hamper such cooperative approaches among market participants. In such cases, public sector support for private sector coordination efforts may help to overcome possible difficulties.

Given its institutional characteristics, the Eurosystem is particularly well placed to play an active role as a catalyst for private sector activities in the field of European financial integration. The ECB is both a public authority with a pan-European remit and, in its capacity as the central bank of the euro area, an active market participant, with knowledge of and business contacts in the financial markets. Over the past few years, the ECB has acted as a catalyst in many fields.

In 2011 the catalytic activities of the ECB and the Eurosystem focused mainly on the following initiatives.

#### STEP INITIATIVE

The Eurosystem has supported the STEP initiative in two ways. First, the STEP label was introduced in 2006 and, until June 2010, the Eurosystem assisted the STEP Secretariat in the labelling of STEP programmes on the basis of a temporary arrangement. Since July 2010 the STEP Secretariat has managed the labelling process itself. Second, the ECB provides statistics on the STEP market. As well as daily yields and spreads on new issues, the ECB statistics include daily data on aggregated outstanding amounts and new issues broken down by sector, maturity, rating and currency. Outstanding amounts and currency breakdowns are also shown at the level of each individual issuance programme.<sup>22</sup> This is important in particular for investors in assessing their concentration risk, i.e. how large their exposure to a specific programme is compared to the programme's overall size.

There were 169 active STEP-labelled programmes in place at the end of December 2011. The STEP market has emerged relatively unscathed from the financial market turmoil, as the total outstanding amount of STEP debt securities was €415 billion in December 2011, which is slightly above the total outstanding amount one year earlier and is significantly above the level prevailing when the financial market turbulence started in August 2007.

The steady development of the STEP market reflects the fact that STEP criteria can be applied to almost all existing market programmes and that, owing to its characteristics in terms of accessibility, transparency and safety, STEP is accepted by the Eurosystem as a non-regulated market for collateral purposes. Since 1 January 2012, STEP-labelled securities issued by credit institutions have also become eligible collateral for ECB monetary policy operations as a result of the abolition of the requirement that debt instruments issued by credit institutions, other than covered bonds, are only eligible if they are admitted to trading on a regulated market.

#### STRUCTURED FINANCE MARKETS

In order to reactivate the structured finance markets in Europe, the Eurosystem acted as a catalyst by supporting market-led initiatives to promote the reactivation of these market segments and create a viable structure that would also attract institutional investors with a medium to long-term investment horizon. In this respect, and in order to increase transparency in the area of ABSs, the Governing Council of the ECB decided in December 2010 to establish loan-by-loan information requirements for ABSs in the Eurosystem collateral framework. It decided to start the application of these requirements in the residential mortgage-backed securities (RMBS) market segment, which represents by far the largest relevant asset class. The Governing Council also introduced a lead

<sup>22</sup> See the section on the ECB's website under Statistics/Monetary and Financial Statistics/Short-term European Paper (STEP).

time of about 18 months for this ABS type to comply with the new requirements. This implies that the loan level template published by the ECB in December 2010 must be complied with by late summer 2012. In April 2011 the Governing Council of the ECB took a similar decision on commercial mortgage-backed securities (CMBS) and small to medium-sized enterprise (SME) transactions with the same timeline of 18 months for implementation.

In addition, the ECB has acted as an observer and catalyst in a market-led initiative promoted by the European Financial Services Round Table and the Association for Financial Markets in Europe. This initiative aims to reinforce ABSs as sustainable investment and funding tools for both investors and originators, in particular with a view to improving market resilience in Europe. This initiative, called the Prime Collateralised Securities Initiative, rests on EU-wide standards for ABSs which relate to quality, transparency, standardisation and simplicity. These standards are expected to lead to increased liquidity for securities which acquire the PCS label.

Standardisation and enhanced transparency, which would in particular ensure access by investors to comprehensive and standardised information across the European ABS market, are expected to foster a properly functioning securitisation market. This will in turn contribute to the completeness of the European financial system and to integration through the improved comparability of instruments across borders.

### SEPA INITIATIVE

Together with the European Commission, the Eurosystem has continued to support SEPA, with a view to integrating the market for retail payments and transforming Europe into a true domestic market for retail payments in euro.

In October 2010 the Eurosystem published its 7th SEPA Progress Report<sup>23</sup>, providing an assessment of the progress achieved in the implementation of SEPA, highlighting

accomplishments, providing guidance and pointing out milestones ahead. In order to monitor the usage of the newly created payment instruments, SCT and SDD, a set of SEPA indicators were introduced. According to figures from December 2011, migration from domestic credit transfers to SCT in the euro area reached 23.7% (see Chart 34 in the Statistical Annex). The Eurosystem also collects information on migration at national level. These national indicators show that there are still big national differences in migration to SCT. As regards the SDD, migration in the euro area amounted to only 0.5% by December 2011. The introduction of legal measures to support migration to SEPA schemes has been promoted by the Eurosystem and therefore the agreement between European Parliament and Council on an end-date regulation was very welcome (see also Section 1 of this chapter).

To increase the usage of the new instruments, enhanced communication strategies are needed. According to a statement issued by the SEPA Council in June 2011<sup>24</sup>, its members are committed to supporting their constituencies in setting up communication strategies in each Member State and facilitating swift, effective and cost-efficient SEPA implementation. The NCBs are supporting SEPA migration in their countries by, for instance, considering the launch, where necessary, of appropriate publicity campaigns.

Another important area in which further work is clearly needed relates to card payments. In the 7th SEPA Progress Report, the Eurosystem made several recommendations that were monitored during 2011.

23 The 7th SEPA Progress Report is available on the SEPA pages of the ECB's website ([www.ecb.europa.eu](http://www.ecb.europa.eu)). The SEPA internet address ([www.sepa.eu](http://www.sepa.eu)) also redirects to this site.

24 The SEPA Council is a forum co-chaired by the European Commission and the ECB which brings together the demand and supply sides of the European retail payments market. The SEPA Council had two meetings in 2011.

First, in order to enhance the security level of card transactions and to reduce card fraud based on “skimming”<sup>25</sup>, the Eurosystem encourages the market to migrate to EMV-chip technology and abandon the magnetic stripe. It also urges the different stakeholders involved to develop solutions to minimise the fraud related to the use of magnetic stripe as long as the global migration to EMV-chip technology remains incomplete (e.g. by blocking by default magnetic stripe transactions).

Second, to facilitate market access and efficiency in the cards business, it was noted that further progress needs to be made in the area of technical standardisation and in the establishment of a harmonised SEPA security certification framework. To help facilitate this work, the Eurosystem organised an ad hoc Forum on Cards Standardisation in March 2011 to inform stakeholders of the work of the various standardisation initiatives.

In addition, in order to create an integrated and competitive cards market, non-technical barriers to integration also need to be abolished. In 2011 discussions with stakeholders were initiated on business practices in the field of cards (e.g. abolishing geographic restrictions in licensing, issuing and acquiring). Furthermore, in 2011 the ECB published an occasional paper on “Interchange Fees in Card Payments”<sup>26</sup>. The paper explores issues surrounding multilateral interchange fees in payment card markets from various angles, with the aim of facilitating a constructive dialogue among the stakeholders involved in this debate.

Another focus area is where the SEPA project provides a unique opportunity for innovation in retail payment service offerings, e.g. online or e-payments.

In the context of online payments, the Eurosystem has stressed several times the need for secure and efficient online payment solutions to be offered to consumers and internet retailers throughout SEPA. Although

a clear market demand for this kind of service exists, market participants might be awaiting the finalisation of the investigation opened by the European Commission in September 2011 into the EPC’s standardisation process for payments over the internet.

During 2011 work continued in the area of the security of payments, where a new forum on the security of retail payments (SecuRe Pay) was established by the Governing Council of the ECB. It was established to foster voluntary cooperation between relevant authorities within the EEA dealing with the issue of security in retail payments. The forum is aimed at addressing areas where major weaknesses and vulnerabilities are detected and, where necessary, will make recommendations. In 2011 the focus of the forum was on the security of online banking and of card transactions conducted over the internet.

Moreover, at the global level the ECB has contributed to the work of the Committee on Payment and Settlement Systems (CPSS) in its Working Group on Retail Payments. This working group is drawing up a report on innovation in retail payments. The results of an online survey conducted by the ECB in 2010 in order to obtain a snapshot of innovations which have been rolled-out in the European market in recent years was also considered for this CPSS report.

Another area of attention is infrastructure. European retail payment infrastructures will play a key role in the success of SEPA as they provide for the clearing and settlement of payment transactions. Further to the pan-European ACH (STEP2), which allows SEPA payments to be exchanged with other systems,

25 “Skimming” is the unauthorised copying of data contained in the magnetic stripe via a manipulated or fake terminal or with a handheld reading device; the data copied from the magnetic stripe can be used to create a counterfeit card or could be used in card-not-present transactions.

26 Börestam, A. and Schmiedel, H. (2011), “Interchange fees in card payments”, Occasional Paper Series, No 131, ECB.

a number of infrastructures have established interoperability links, based on the technical interoperability framework of the European Automated Clearing House Association (EACHA). The foreseen market consolidation is still at an early stage and will probably take longer than originally expected.

### INTEGRATION OF SECURITIES INFRASTRUCTURES

Financial market integration needs to be complemented and supported by the integration of the underlying infrastructures. Although the European post-trading market infrastructure for securities transactions is evolving, it is still fragmented and has not yet reached a level of efficiency, integration and soundness compatible with the requirements of the Single Market and the single currency.

The Eurosystem therefore has a strong interest in fostering further integration in this area. The Eurosystem's most fundamental contribution to integration is through the building of T2S, a single platform for securities settlement in Europe. But without far-reaching harmonisation, market participants might not be able to reap the full benefits of the single platform.

For several years, the Eurosystem has been playing a catalyst role through the work of the T2S Advisory Group<sup>27</sup>, and has been making good progress in developing and monitoring the implementation of relevant market standards and processing rules. Nevertheless, because of the crucial importance of harmonisation and of removing the Giovannini barriers to efficient clearing and settlement, the Eurosystem, via the T2S Advisory Group, has decided to further strengthen its catalyst role in the years ahead. A high-level Harmonisation Steering Group has been set up to define what should be the top priorities and functional targets for harmonisation activities going forward, and how best to deliver concrete results before the launch of T2S. Further information on the work of the Harmonisation Steering Group can be found in Section 4 of this chapter.

### 3 KNOWLEDGE OF THE STATE OF FINANCIAL INTEGRATION

The ECB is in a unique position to provide in-depth economic analysis and comprehensive statistics regarding the state of financial integration in the euro area and its development. In particular, the ECB is able to sponsor coordinated analytical research – together with other members of the Eurosystem and academics – and can make use of its experience and knowledge as an active market participant. Enhancing knowledge and raising awareness regarding the need for European financial integration, and measuring the progress achieved in this regard, therefore form a major part of the ECB's contribution to fostering financial integration.

During 2011 the activities of the Eurosystem with respect to enhancing knowledge, raising awareness and monitoring the state of financial integration were mainly focused on the following initiatives.

#### INDICATORS OF FINANCIAL INTEGRATION IN THE EURO AREA

Quantitative measures of financial integration provide essential tools for monitoring the status of financial integration in Europe and the progress achieved. Since September 2005, the ECB has published quantitative indicators of integration in the euro area financial markets.<sup>28</sup> These price and quantity-based indicators cover the money market, the government and corporate bond markets, the equity market and the banking sector. Indicators on market infrastructures have been allocated to the main financial markets that they serve.

<sup>27</sup> The T2S Advisory Group is composed of senior representatives from the banking industry, CSDs, the central banking community and public authorities. An important part of its mandate is to promote harmonisation.

<sup>28</sup> See Chapter I, as well as the ECB reports entitled "Indicators of financial integration in the euro area", September 2005 and 2006, available on the ECB's website.

The report also encompasses indicators of financial development. In fact, while financial integration is an important factor in increasing the efficiency of a financial system, the latter also depends on each financial system's own degree of development.

All indicators are updated and published semi-annually on the ECB's website. The last update was carried out in November 2011.

#### **ECB AND EUROPEAN COMMISSION JOINT CONFERENCE ON FINANCIAL INTEGRATION AND STABILITY**

In May 2011 the European Commission organised a joint high-level conference with the ECB on financial integration and stability with the participation of the ECB Vice-President and other top-level financial market participants, policy makers and academics. In addition to discussing the implications of the financial crisis for the integration and stability of European and international financial markets, the ECB presented its 2011 Report on Financial Integration and the Commission presented its European Financial Stability and Integration Report 2010.

This conference was the second conference held jointly by the ECB and the European Commission on financial integration and financial stability issues. The conference is a yearly event, with the venue alternating between the ECB and the European Commission. The third conference will take place on 26 April 2012 at the premises of the ECB.

#### **ECB-CFS RESEARCH NETWORK ON CAPITAL MARKETS AND FINANCIAL INTEGRATION IN EUROPE**

The ECB-Center for Financial Studies (CFS) Research Network is aimed at coordinating and stimulating top-level and policy-relevant research that significantly contributes to the understanding of the European financial system and its international linkages.<sup>29</sup> European

financial integration is one of the three main focal areas in this regard.<sup>30</sup>

In 2011 the Network focused on two priorities: (i) financial systems as risk managers, risk distributors and risk creators and (ii) financial modernisation, governance and the integration of the European financial system in global capital markets, with a special focus on macro-prudential regulation and the new European regulatory and supervisory framework and on bank funding. On 17-18 May 2011 the ECB hosted a workshop on "The structure of the euro area market for banks' debt financing and implications for monetary transmission and financial integration". The goal of the workshop was to discuss various aspects of the market for banks' debt financing in the euro area, in particular bank bonds, covered bonds, and ABSs. The first day of the workshop was dominated by academic sessions on the opportunities and hazards of banks' market-based debt financing and their implications for banks' lending activity and for the macroeconomy. More specifically, participants analysed the role of securitisation in bank risk-taking, the benefits of and limits to the use of covered bonds, the impact of discretionary accounting choices on the cost of banks' debt financing, and the macroeconomic impact of securitisations. The second day focused on the outlook for the markets for banks' debt financing from the perspective of problems still faced by certain sectors and in view of the regulatory reforms initiated in Europe and in the United States.

Finally, as each year, in 2011 the ECB-CFS Research Network awarded five "Lamfalussy Fellowships" to promising young researchers. The call for projects highlighted the following five topics: (1) models and analytical tools for the early identification and assessment of systemic risks; (2) systemic risks related

29 See the ECB-CFS Research Network website ([www.eu-financial-system.org](http://www.eu-financial-system.org)).

30 In addition, the ECB-CFS Research Network studies financial system structures in Europe and financial linkages between the euro area/EU, the United States and Japan.

to the activities of non-bank financial intermediaries; (3) incorporating financial instability in models of the aggregate economy; (4) designing and assessing the effectiveness of macro-prudential regulatory policy instruments; and (5) interactions between macro-prudential supervision/regulation and other policies. Research papers delivered in 2011 by the Lamfalussy fellows awarded a fellowship in 2010 also addressed different aspects of bank risk-taking, financial fragility, and macro-prudential regulation. For example, using German bank retail data, Sascha Steffen<sup>31</sup> showed that loans to retail customers, who have a relationship with their savings bank prior to applying for a loan, default significantly less frequently than customers with no prior relationships. The results imply that bank relationships are valuable in screening, in monitoring, and in reducing customers' incentives to default. And Francois Gourio's<sup>32</sup> project incorporates disaster risk in a standard dynamic stochastic general equilibrium (DSGE) model with financial frictions and collateral constraints. The setup allows the analysis of the amplification effect of financial frictions in a model that is consistent with large and variable bond spreads, as well as the effect of an increase in risk premia (disaster risk) on macro aggregates when financial frictions are present.

It was decided that the ECB-CFS Research Network fulfilled its objectives and therefore be discontinued starting in 2012.

### PROVISION OF FINANCIAL MARKETS STATISTICS

Increasing transparency fosters integration, as it facilitates the comparison of products across the economic area. Since July 2007 the ECB publishes nominal yield curves of AAA-rated euro-denominated euro area central government bonds with a residual maturity from three months to 30 years. The ECB publishes zero-coupon (spot, forward and par) yield curves for the euro area. Data based on the same sources and methodology used for the daily estimations stretch back to 6 September 2004.<sup>33</sup> In addition, the ECB releases daily yield curves covering

all euro area central government bonds and publishes the spreads between both curves.

From an ECB monetary policy perspective, the main benefit of the euro area yield curve is that it provides a proper empirical representation of the term structure of euro area interest rates, which can be interpreted in terms of market expectations of monetary policy, economic activity and inflation. Publishing a consistent and comparable set of yield curves based on euro-denominated central government bonds also provides reference information for the wider public and financial market participants, who previously had to rely on references to bonds of individual issuers.

Since the introduction of the euro, and in particular in recent times, there has been increasing demand both from the public and from institutions for timely and accurate statistical data on euro money market activity. To satisfy this demand, since 1999 an annual euro money market survey has been conducted by the ECB and the NCBs that are members of the ESCB. In July 2011, 170 banks in the EU and in Switzerland participated on a voluntary basis. This survey collects data on euro money market activity in the EU during the second quarter of each year. The data include average daily turnover for a variety of market segments (the unsecured market, repo market, derivatives market and short-term securities market) and their respective maturity ranges (from overnight to more than ten years). The data are released to the general public as the "Euro Money Market Survey". In addition, the "Euro Money Market Study"<sup>34</sup> presents every even-numbered year an in-depth analysis of money market activity.<sup>34</sup>

31 Puri, M., Rocholl, J. and Steffen, S. (2011), "On the importance of prior relationships in bank loans to retail customers", *Working Paper Series*, No 1395, ECB.

32 Gourio, F., "Macroeconomic implications of time-varying risk premia", *Working Paper Series*, ECB, forthcoming.

33 The yield curves and a description of the methodology used to estimate them can be found on the ECB's website.

34 The Euro Money Market Study and the Euro Money Market Survey are available on the ECB's website.



## STATISTICS ON INSTITUTIONAL INVESTORS

In 2011 the ECB, together with the NCBs, of the participating member states, and, in most cases, NCBs of the non-euro area countries achieved the implementation of (i) an enhanced set of statistics addressed to MFIs concerning balance sheet items and interest rate statistics and (ii) new statistics on MFI securitisation and balance sheets of financial vehicle corporations engaged in securitisation transactions.<sup>35</sup> For these harmonised sets of statistics, regular publication of monthly and quarterly results started in June 2011.<sup>36</sup>

Since 2009 the ECB has published harmonised statistics on assets and liabilities of investment funds. These consist of two separate datasets, one covering investment funds as part of the “other financial intermediaries” sector,<sup>37</sup> and the other covering money market funds as part of the MFI sector. In addition to this, the ECB also regularly publishes euro area balance sheet statistics for credit institutions (which together with money market funds constitute almost the whole of the MFI sector excluding the Eurosystem).

In addition, in 2011 the ECB launched the regular publication of quarterly statistics for ICPFs in the euro area. The statistics, derived mainly from supervisory sources, contain information on assets and liabilities of Insurance corporations and pension funds (ICPFs) resident in the euro area, and, for main aggregates, are also available separately for insurance corporations and pension funds. In addition, the ECB is closely cooperating with the EIOPA on the integration of statistical requirements in the new Solvency II standard reporting scheduled to be launched in 2014. Subject to a positive outcome of this work, information derived from Solvency II reporting could form the basis of enhanced and harmonised insurance statistics. The use of supervisory data sources for ECB statistical purposes is one way to minimise the reporting burden on insurance undertakings.

All these new statistics contribute to a better, more harmonised measurement of activity in the

financial sector as a whole, including that of non-bank financial corporations across the euro area countries, as well as in some other EU Member States. This ensures greater transparency and comparability in the assessment of developments in this sector and each sub-sector. Work is now ongoing to develop a security-by-security dataset on securities holdings of euro area/EU investors which will represent a further important improvement in data availability as from 2014.

In response to important gaps in statistics on credit risk transfer (CRT) instruments revealed by the current financial crisis, an important initiative is being taken to develop harmonised statistics on securities holdings and improvements have also been made to statistics on credit derivatives (principally CDSs), the latter compiled by the BIS, including the granularity of counterparty breakdowns by sector and region. The credit derivative statistics are based on the work of a Committee on the Global Financial System (CGFS)/BIS Working Group in which the ECB participated.<sup>38</sup>

## 4 CENTRAL BANK SERVICES THAT FOSTER INTEGRATION

The provision of central bank services is another way in which the Eurosystem seeks to promote financial integration. Although the main purpose of such services is the pursuit of the Eurosystem’s basic central banking tasks, the Eurosystem pays close attention to ensuring that such services, where possible, are specified in such a way that they are also conducive to supporting the financial integration process.

<sup>35</sup> Financial vehicle corporations are securitisation vehicles as defined in Regulation (EC) No 24/2009 of the European Central Bank of 19 December 2008 concerning statistics on the assets and liabilities of financial vehicle corporations engaged in securitisation transactions (ECB/2008/30).

<sup>36</sup> The publications can be found on the ECB’s website.

<sup>37</sup> Collected under Regulation (EC) No 958/3007 of the European Central Bank concerning statistics on the assets and liabilities of investment funds (ECB/2007/8).

<sup>38</sup> See “Credit risk transfer statistics”, *CGFS Papers*, No 35, CGFS, September 2009.

During 2011 the ECB and the Eurosystem focused their activities in the area of central bank services on the following initiatives.

### TARGET2

TARGET2 plays an important role in the integration of euro large-value payments, including money market operations. TARGET2 is based on a single technical platform, also referred to as the single shared platform (SSP). The SSP is used for the processing of euro payments and the management of accounts opened for financial institutions with their central banks. The SSP also supports other systems operating in euro (i.e. ancillary systems), settling the cash positions of their participants in central bank money. With TARGET2 the entire European user community benefits from the same comprehensive, advanced real-time gross settlement services. TARGET2 offers broad access to credit institutions and ancillary systems.

At present, 24 central banks of the EU and their respective national user communities use the single shared platform of TARGET2: the 17 euro area NCBs, the ECB, and 6 NCBs from non-euro area EU Member States. The last NCB that joined TARGET2 was the Banca Națională a României which together with its national user community became a member of TARGET2 in July 2011.

With the creation of TARGET2 the Eurosystem made a crucial contribution to European financial integration. Being the first market infrastructure completely integrated and harmonised at the European level, TARGET2 has eliminated the fragmented situation that previously existed in the management of central bank liquidity and the real-time settlement of euro payments. The move to a single platform represented a significant step towards a more efficient, competitive, safe and fully integrated European payments landscape, offering all market participants equal conditions and services regardless of their location. The harmonised service level of TARGET2, offered

with a single price structure, ensures a level playing-field for all participants across Europe.

TARGET2 also provides a harmonised set of cash settlement services in central bank money for all kinds of ancillary systems, such as retail payment systems, money market systems, clearing houses and securities settlement systems. The main advantage for ancillary systems is that they are able to settle their cash positions in TARGET2 via a standardised technical interface and standardised settlement procedures, thus allowing a substantial harmonisation of business practices.

To facilitate the technical migration of banking communities to TARGET2, it was agreed that some NCBs could maintain local systems – referred to as proprietary home account (PHA) applications – in which payments settlement could still take place for a transitional period of up to a maximum of four years. This period will in principle soon come to an end. In order to support the transition process, which is already well on its way, the Eurosystem introduced internet-based access to TARGET2 in November 2010. This consists of an alternative direct access to the main TARGET2 services without requiring a connection to the SWIFT network. The Eurosystem developed this internet-based access to meet the needs of small and medium-sized banks currently hosted on PHAs that wish to hold an account with their NCB (e.g. for refinancing operations, fulfilment of reserve requirements or for limited payment traffic). By offering technical access to TARGET2 to a wider range of market participants, the internet-based access may contribute to the integration of the central bank liquidity management of European banks.

The TARGET2 system functioned smoothly in 2011. The system's market share remained stable, with 91% of the total value and 59% of the total number of euro denominated large-value payments being executed via TARGET2. The average number of payments processed by the system each day in 2011 was 348,505, while the average daily value was €2,385 billion.

These figures position TARGET2 as one of the most important systems for large-value and time-critical payments in the world, alongside Fedwire in the United States and Continuous Linked Settlement (CLS), the international system for settling foreign exchange transactions. In 2011 the overall level of TARGET2 availability reached 99.89%.

Observations made with regard to the use of the harmonised and advanced TARGET2 services (payment prioritisation, liquidity reservation, sender limits, liquidity pooling, etc.) confirm that they are actively used by a wide range of participants and that they contribute to the smoother settlement of transactions. TARGET2 and its new features have both enabled and driven organisational changes in credit institutions that operate in several European countries, by allowing them to rationalise their back office functions and consolidate their euro liquidity management.

In 2011 the Eurosystem finalised its strategy for ISO 20022 in TARGET2. The strategy is aimed at making in the long run the system compliant with the international ISO 20022 standard. Such compliance will further foster financial integration as it is aimed at improving interoperability with other market infrastructures based on ISO 20022, such as T2S. Further information on the ISO 20022 strategy for TARGET2 can be found in the TARGET Annual Report published in May 2011.<sup>39</sup>

### TARGET2-SECURITIES

T2S is a major infrastructure project initiated by the Eurosystem which aims to overcome the current fragmentation in the securities settlement layer of the European post-trading landscape. The project is currently in the development phase, and the platform is due to go live in June 2015.

The existence of fragmentation and procedures that have not been harmonised across national settlement systems contributes to high costs

and inefficiencies, especially for cross-border securities transactions, and constitutes a considerable competitive disadvantage for European capital markets.

The T2S platform will deliver harmonised and commoditised delivery-versus-payment (DvP) settlement in central bank money, both in euro and in other participating currencies. Almost all European (including some non-EU) CSDs are currently involved in the project, and it is expected that over time virtually all traded securities in Europe will eventually be settled in T2S, leading to significant economies of scale and lower settlement costs. Although T2S is a Eurosystem initiative, it will also settle securities transactions in currencies other than the euro if the relevant central bank, with the support of its market, gives its consent.

For more details on the project's progress, please refer to the latest version of the ECB's Annual Report. The following section focuses on the work of the ECB, acting in close cooperation with the market, in fostering further harmonisation of the post-trade industry.

The T2S project was designed from the beginning to make cross-border settlement as efficient as domestic settlement, while avoiding the cementation of national specificities into the system's operational blueprint. However, at present there are still significant differences between settlement practices at the various CSDs and other market participants that will make use of T2S. Without a high degree of harmonisation of procedures and market practices, market participants will not be able to reap the full benefits of a single IT platform. They would be forced to resort to costly manual procedures and/or use local intermediaries in a particular market to carry out some tasks.

In order to strengthen the work on harmonisation, it was agreed in 2011 to establish a Harmonisation Steering Group,

<sup>39</sup> TARGET Annual Reports are available on the ECB's website.

composed of senior level representatives from the industry and from the public sector. The Harmonisation Steering Group will support the T2S Advisory Group in formulating and monitoring the T2S harmonisation agenda. The objective of the Harmonisation Steering Group is to make sure that what T2S needs in terms of harmonisation is achieved on time for the launch of the single platform.

The high priority issues currently being monitored and guided by the Harmonisation Steering Group include the establishment of harmonised rules for settlement finality in T2S, the implementation of the T2S corporate actions standards, establishing the possibility for foreign intermediaries to hold securities in omnibus accounts, agreeing on technical procedures for smooth cross-CSD settlement, introducing a harmonised settlement discipline regime, the harmonisation of the settlement cycle, and the technical implementation of registration rules and procedures.

It is deemed of critical importance to resolve all these issues prior to the launch of T2S. In July 2011, at the initiative of the Harmonisation Steering Group, the T2S Advisory Group escalated some of these key post-trade issues to the European Commission to alert it to interdependencies between the foreseen CSD Regulation on one hand and post-trade harmonisation, financial integration and the success of T2S on the other. The T2S Advisory Group also published its first semi-annual progress report on harmonisation in July 2011. The report provides a detailed analysis of the status of each harmonisation activity; it also highlights who is responsible for the definition, monitoring and implementation of standards in the EU, including the envisaged deadlines. A second progress report was published in December 2011.

The Harmonisation Steering Group and the T2S Advisory Group are also working on the establishment of a post-trade harmonisation monitoring tool for each national market.

The aim is that the T2S Advisory Group should identify gaps in implementation between T2S/EU standards and national market practices, and to escalate corrective actions to all relevant stakeholders. This will be made possible with the active involvement of the T2S National User Groups and the NCBs which organise and coordinate them. This harmonisation work will obviously focus on the markets participating in T2S, i.e. the markets that decided not to participate in T2S will not actively participate in the discussions on harmonisation and their progress towards harmonised European standards will not be monitored.

In 2011 a special task force comprising experts from CSDs, banks and central banks has also been established to specifically work on developing commonly agreed solutions for adaptation to cross-CSD settlement in T2S, with the aim of increasing the efficiency of cross-CSD settlement for CSDs and their participants on a non-discriminatory basis. Two issues were considered priorities for the task force in 2011: registration of securities and tax procedures. The aim of the task force is not to harmonise the way that registration and taxation are carried out across Europe, which would be an extremely difficult task. Rather it is to ensure that, when registration or tax practices in certain markets require information to be included in settlement messages, this is done in a harmonised way and in line with current T2S functionality. This would significantly reduce the risk that securities instructions cannot be matched automatically, thereby enabling market participants to maximise the use of straight-through processing and to streamline their back offices.

The task force will also explore technical solutions related to other issues, such as CSD ancillary services, issuance practices, and non-standardised securities. Such solutions should make use of existing standardised T2S functionality in order to ensure that settlement efficiency is not adversely affected. The task force reports to the T2S Advisory Group and Harmonisation Steering Group.

## EUROSYSTEM COLLATERAL MANAGEMENT

Since its implementation in 1999, the correspondent central banking model (CCBM) has fostered financial market integration by enabling all euro area counterparties to use a common set of eligible marketable assets as collateral in Eurosystem credit operations, regardless of the country in which the security was issued. In line with the introduction of non-marketable assets in the common set of eligible assets in 2007, specific procedures for the cross-border use of such assets under the CCBM were developed.

The CCBM is the main channel for the cross-border use of collateral in Eurosystem credit operations. At the end of 2011 it accounted for 17.8% of the total collateral provided to the Eurosystem. This model was initially set up as an interim solution and, since it is based on the principle of minimum harmonisation, market participants have called for some improvements.

In particular, market participants have requested that the requirement to repatriate (marketable) assets from investor CSDs to issuer CSDs before mobilisation as collateral through the CCBM be removed and that tri-party collateral management services which are today only used domestically could be used also on a cross-border basis. The Eurosystem supports the inclusion of these enhancements in the CCBM and is currently working on their incorporation within the framework.

# STATISTICAL ANNEX

## MONEY MARKET INDICATORS

Chart 1: Size of capital markets **S3**

### Price-based indicators

Chart 2: Cross-country standard deviation of average unsecured interbank lending rates across euro area countries **S3**

Chart 3: Cross-country standard deviation of average interbank repo rates across euro area countries **S4**

### Quantity-based indicator

Chart 4: Outstanding amounts of Short-Term European Paper (STEP) debt securities **S5**

### Infrastructure indicators for large-value payment systems

Chart 5: TARGET: the share of payments between Member States in total payments by number of transactions **S5**

Chart 6: TARGET: the share of payments between Member States in total payments by value of transactions **S5**

## BOND MARKET INDICATORS

### GOVERNMENT BOND MARKET

#### Price-based indicators

Chart 7: Evolution of beta coefficients for ten-year government bond yields **S6**

Chart 8: Average distance of intercept/beta from the values implied by complete integration for ten-year government bond yields **S7**

Chart 9: Evolution of intercept and beta coefficients for ten-year government bond yields, adjusted for sovereign risk **S7**

### CORPORATE BOND MARKET

Chart 10: Debt securities issued by non-financial corporations **S8**

#### Price-based indicator

Chart 11: Dispersion in five-year CDS premia across euro area countries **S8**

#### Quantity-based indicators for government and corporate bond markets

Chart 12: Share of MFI cross-border holdings of debt securities issued by euro area and EU corporates and sovereigns **S9**

Chart 13: Investment funds' holdings of debt securities issued in other euro area countries and the rest of the world **S9**

#### Infrastructure indicator

Chart 14: Share of domestic and cross-border collateral used for Eurosystem credit operations **S10**

## EQUITY MARKET INDICATORS

Chart 15: Early-stage venture capital finance, as a share of GDP, by country of management S 10

Chart 16: Private equity investment by independent funds as a share of total private equity investment, by country of management S 11

### Price-based indicators

Chart 17: Pricing of global and regional information in the stock market S 11

Chart 18: Filtered country and sector dispersions in euro area equity returns S 11

Chart 19: Proportion of variance in local equity returns explained by euro area and US shocks S 12

Chart 20: Euro area and US shock spillover intensity S 12

### Quantity-based indicators

Chart 21: The degree of cross-border holdings of equity issued by euro area residents S 13

Chart 22: Investment funds' holdings of equity issued in other euro area countries and the rest of the world S 14

## BANKING MARKET INDICATORS

### Cross-border presence indicators

Chart 23: Dispersion of the total assets of euro area bank branches across euro area countries S 14

Chart 24: Dispersion of the total assets of euro area bank subsidiaries across euro area countries S 15

Chart 25: Euro area cross-border bank M&A activity S 15

### Price-based indicators

Chart 26: Cross-country standard deviation of MFI interest rates on new loans to non-financial corporations S 15

Chart 27: Cross-country standard deviation of MFI interest rates on loans to households S 16

Chart 28: Intercept convergence for selected banking retail interest rates S 16

Chart 29: Beta convergence for selected banking retail interest rates S 16

### Quantity-based indicators

Chart 30: MFI loans to non-MFIs: outstanding amounts by residency of counterparty S 17

Chart 31: MFI loans to MFIs: outstanding amounts by residency of the counterparty S 18

Chart 32: MFI holdings of securities issued by MFIs: outstanding amounts by residency of the counterparty S 18

### Infrastructure indicators for retail payment systems

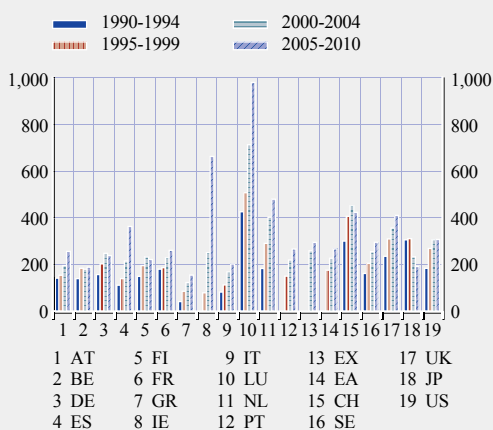
Chart 33: Concentration ratio of retail payment infrastructures in the euro area (2010) S 18

Chart 34: Credit transfer transactions processed in SEPA format in the euro area S 19

MONEY MARKET INDICATORS

Chart 1 Size of capital markets

(aggregate volume of shares; bonds and loans to the private sector as a percentage of GDP)



Sources: WFE, BIS, IMF, ECB, Thomson Reuters, Eurostat, and ECB calculations.

Description

This indicator is calculated as the sum of (i) stock market capitalisation, (ii) bank credit to the private sector and (iii) debt securities issued by the private sector, divided by GDP for each year. Then the five-year averages (for the last period, the six year average) of the annual ratios are calculated.

Figures for the euro area (EA)<sup>1</sup> and Euronext countries (EX)<sup>2</sup> are averages of country data weighted by GDP.

Stock market capitalisation: figures for Japan refer to the Tokyo Stock Exchange. Figures for the United States include the AMEX, the NYSE and the NASDAQ. Euro area stock market capitalisation is the sum of the values for Euronext and for euro area countries not included in Euronext. Stock market capitalisation includes only shares issued by domestic companies; it does not include shares issued by foreign companies.

Debt securities issued by the private sector: for euro area countries, data are from the Securities and Exchange Commission (SEC) database. Data for Greece, Ireland and Luxembourg start

in 1993. For Ireland, BIS data are used for the years 1993 to 2002 for MFIs and for the years 1993 to 2007 for other issuers. For Luxembourg, BIS data for the years 1993 to 2007 are used for non-MFI issuers. For non-euro area countries, BIS data are used (sum of international and domestic amounts outstanding of bonds issued by corporate issuers and financial institutions).

Bank credit to the private sector: euro area figures are the sum of euro area country figures and include cross-border loans between euro area countries.

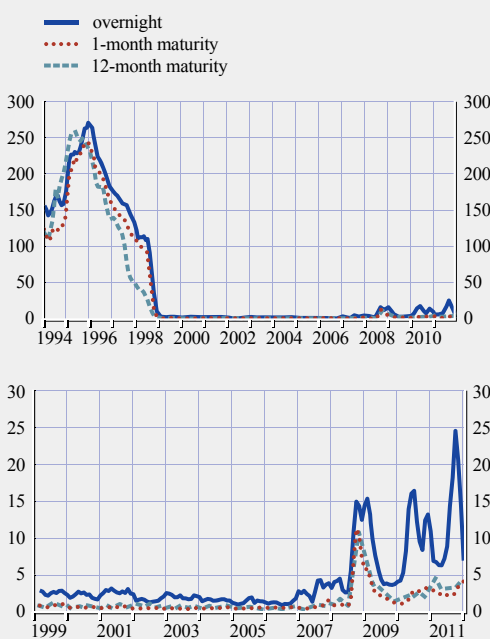
PRICE-BASED INDICATORS

Description

The EBF makes available (daily) business frequency data for a panel of individual institutions for both unsecured and secured

Chart 2 Cross-country standard deviation of average unsecured interbank lending rates across euro area countries

(61-day moving average; basis points)

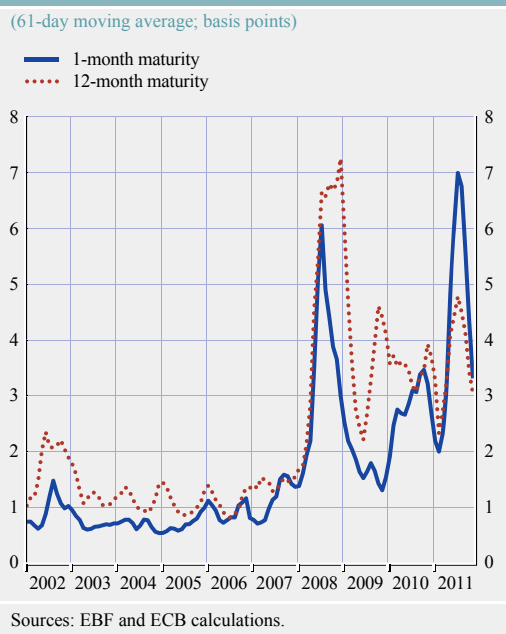


Sources: EBF and ECB calculations.

1 In the fixed composition of the 12 euro area countries: AT, BE, DE, ES, FI, FR, GR, IE, IT, LU, NL, PT.  
2 The Euronext countries are BE, FR, NL and PT.



**Chart 3 Cross-country standard deviation of average interbank repo rates across euro area countries**



short-term interbank debt and deposits. These data cover the EONIA and the EURIBOR (unsecured lending) as well as the EUREPO for various maturities.<sup>3</sup> Data on the EONIA SWAP INDEX are also available.

For each dataset, the indicator is the unweighted standard deviation ( $D_t$ ) of average daily interest rates prevailing in each euro area country. Reported rates are considered to be the national rates of country  $c$  if the reporting bank is located there. However, the counterparty of the transaction is not known, and the reported interest rate could thus potentially refer (in part) to transactions with a bank outside country  $c$ .

The number of euro area countries ( $n_t$ ) is the number of countries that had adopted the euro in the reference period:

$$D_t = \sqrt{\frac{1}{n_t} \sum_c (r_{c,t} - r_t)^2} \quad (1)$$

where  $r_{c,t}$  is the unweighted average of the interest rate  $r_{i,t}^c$  reported by each of the panel banks  $m_c$  at time  $t$  in country  $c$ :

$$r_{c,t} = \frac{1}{m_c} \sum r_{i,t}^c \quad (2)$$

The euro area average  $r_t$  is calculated as the unweighted average of the national average interest rates  $r_{c,t}$ .

The data are smoothed by calculating a 61 (business) day centred moving average of the standard deviation, transformed into monthly figures and taking the end-of-month observation of the smoothed series.

For indicative series prices (EURIBOR, EUREPO), the data are corrected for obvious outliers.

The computed indicator has a monthly frequency.

#### Additional information

The EONIA is the effective overnight reference rate for the euro. The banks contributing to the EONIA are the same as the EURIBOR panel banks (composed of banks resident in the euro area and in other EU Member States, as well as some international banks).

The EURIBOR is the rate at which euro interbank term deposits are offered by one prime bank to another within the euro area.

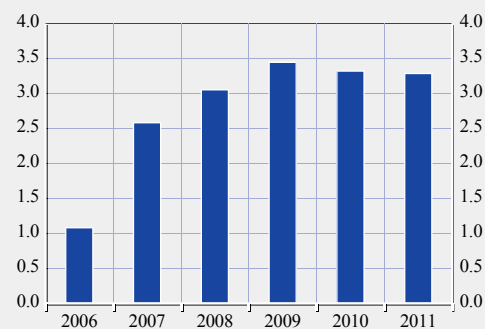
<sup>3</sup> For further information, see the EURIBOR and EUREPO websites ([www.euribor.org](http://www.euribor.org) and [www.eurepo.org](http://www.eurepo.org)). See also “The contribution of the ECB and the Eurosystem to European financial integration” in the May 2006 issue of the ECB’s Monthly Bulletin.

The EUREPO is the rate at which one bank offers, in the euro area and worldwide, funds in euro to another bank if in exchange the former receives from the latter the best collateral within the most actively traded European repo market.

**QUANTITY-BASED INDICATOR**

**Chart 4 Outstanding amounts of Short-Term European Paper (STEP) debt securities**

(percentage of EU GDP)



Sources: ECB and Eurostat.

**Description**

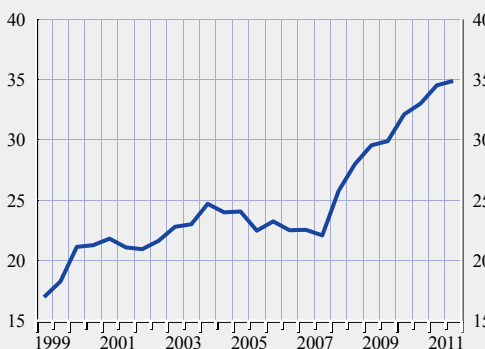
This indicator shows the outstanding amount of STEP debt securities as a percentage of the EU's GDP.

Since 2001 the STEP initiative, pursued by market participants under the auspices of the EBF and the ACI, and steered by the STEP Market Committee, has promoted the integration of the short-term debt securities market through a core set of market standards and practices, which issuers may choose to apply to issuance programmes on existing markets such as the ECP market or the French commercial paper (Titres de Créances Négociables, TCN) market.

**INFRASTRUCTURE INDICATORS FOR LARGE-VALUE PAYMENT SYSTEMS**

**Chart 5 TARGET: the share of payments between Member States in total payments by number of transactions**

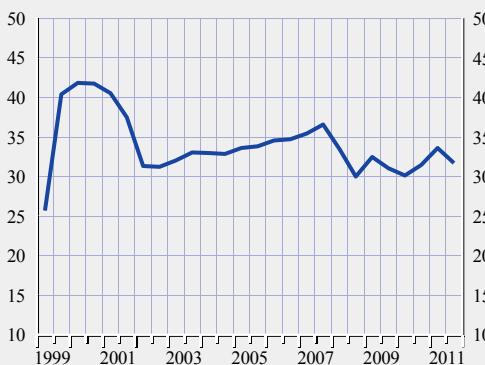
(percentages)



Source: ECB.

**Chart 6 TARGET: the share of payments between Member States in total payments by value of transactions**

(percentages)



Source: ECB.

**Description**

The first indicator shows the share of the volume of payments between EU Member States (inter-Member State payments) in the total number of payments processed in TARGET.

The second indicator shows the share of the value of payments between EU Member States (inter-Member State payments) in the total value of payments processed in TARGET.

Both indicators have a half-yearly frequency.

#### Additional information

TARGET is the RTGS system for the euro. A second-generation system (TARGET2) operating on a single shared platform was launched in November 2007 and fully replaced the former decentralised system in May 2008.

A TARGET inter-Member State payment is defined as a payment between counterparties who maintain accounts with different central banks participating in TARGET. An intra-Member State payment is defined as a payment between counterparties who maintain accounts with the same central bank.

### BOND MARKET INDICATORS

#### GOVERNMENT BOND MARKET

##### PRICE-BASED INDICATORS

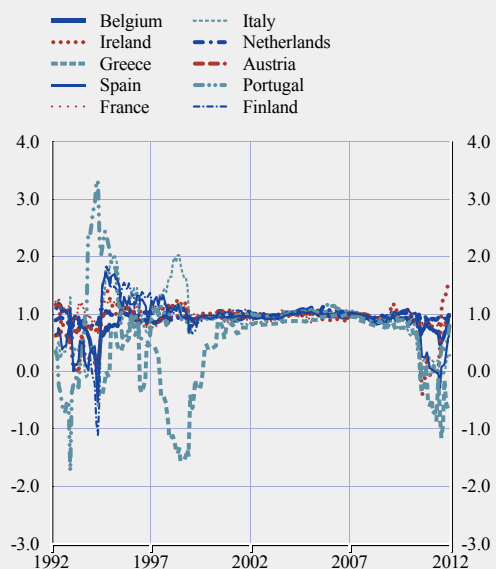
###### Description

If bond markets are fully integrated and no country-specific changes in perceived credit risk occur, bond yields should only react to news common to all markets. That is, bond yields of individual countries should react exclusively to common news, which is reflected in a change in the benchmark government bond yield. To separate common from local influences, the following regression is run:

$$\Delta R_{c,t} = \alpha_{c,t} + \beta_{c,t} \Delta R_{ger,t} + \varepsilon_{c,t} \quad (3)$$

where  $\alpha$  denotes a country-varying and time-varying intercept,  $\beta$  is a country-dependent and time-dependent beta with respect to the benchmark (German) bond yield,  $\Delta R$  is the change in the

Chart 7 Evolution of beta coefficients for ten-year government bond yields



Sources: Thomson Reuters and ECB calculations.

bond yield and  $\varepsilon$  is a country-specific shock. In this framework, and in the context of complete market integration,  $\alpha$  and  $\beta$  would have the values of zero and one respectively.

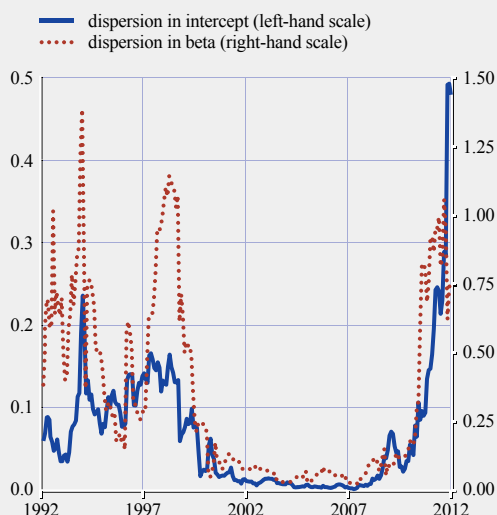
The conditional betas are derived by estimating the above regression using the first 18 months of monthly averages. The data window is then moved ahead one month at a time and the equation is re-estimated until the last observation is reached. A time series for  $\beta_{c,t}$  is thus obtained.

This model-based indicator has a monthly frequency.

#### Additional information

The outcome of the econometric specification depends on the selection of the most appropriate benchmark bond, in this case the ten-year German government bond. In addition, common factors cannot be expected to be able to fully explain changes in local bond yields, as “local news” concerning credit and liquidity risks will continue to have an impact on local yields.

**Chart 8 Average distance of intercept/beta from the values implied by complete integration for ten-year government bond yields**



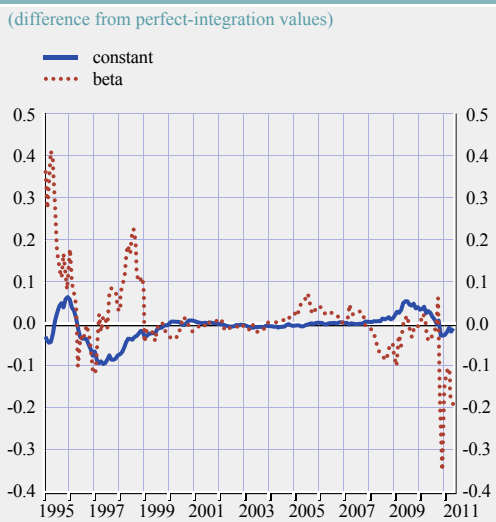
Sources: Thomson Reuters and ECB calculations.

**Description**

This indicator is derived using regression (3), as for the previous indicator. From the individual country regressions, the unweighted average values of  $\alpha_{c,t}$  and  $\beta_{c,t}$  are calculated, then the differences between them and the values implied by complete market integration (0 and 1 respectively) are measured. The analysis is based on monthly averages of government bond yields.

This model-based indicator has a monthly frequency.

**Chart 9 Evolution of intercept and beta coefficients for ten-year government bond yields, adjusted for sovereign risk**



Sources: Thomson Reuters and ECB calculations.

**Description**

Sovereign risk is controlled for by proxying it with rating dummies and by modifying regression (3) as follows:

$$\Delta R_{c,t} = (\alpha_{c,t} + \sum_{r \in \{AA+, \dots, A\}} \alpha_{r,t} D_{c,t}^r) + (\beta_{c,t} + \sum_{r \in \{AA+, \dots, A\}} \beta_{r,t} D_{c,t}^r) \Delta R_{ger,t} + \varepsilon_{c,t} \tag{4}$$

where  $D_{c,t}^r$  is a dummy for rating  $r$  and country  $c$  at time  $t$ .

A potential problem with this regression is that coefficients are not identified when there is insufficient cross-sectional variation in the ratings. To avoid this problem, the above regression is estimated without fixed effects, i.e.:

$$r_{c,t} = \frac{1}{m_c} \sum r_{i,t}^c \tag{5}$$

Coefficients are made time-varying by using a rolling regression (18-month rolling window).

The coefficients  $\alpha_t$  and  $\beta_t$  now capture the average country reactions to changes in German

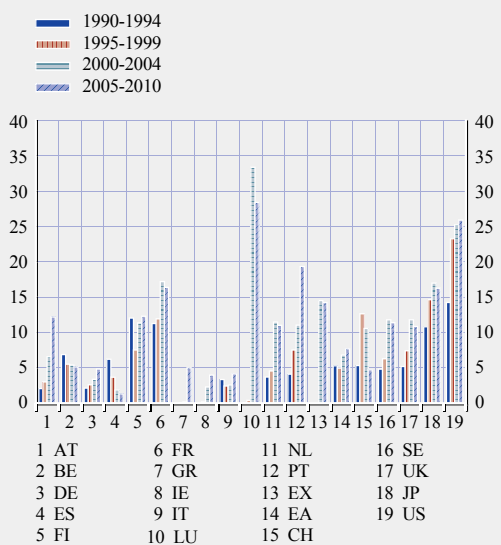
government bond yields, after controlling for credit risk factors. Values are calculated, then the differences between them and the values implied by complete market integration (0 and 1 respectively) are measured, assuming that no variable other than sovereign risk is affecting the change in yield (in the chart the beta coefficient is normalised to zero by subtracting 1).

The chart reports the estimation results for a sample starting in the second half of 1995.

### CORPORATE BOND MARKET

**Chart 10 Debt securities issued by non-financial corporations**

(percentage of GDP)



Sources: BIS, ECB, Eurostat and IMF.

This indicator shows the outstanding amounts of debt securities issued by non-financial corporations, as a percentage of GDP for each year. Then the five-year averages (for the last period, the six year average) of the annual ratios are calculated.

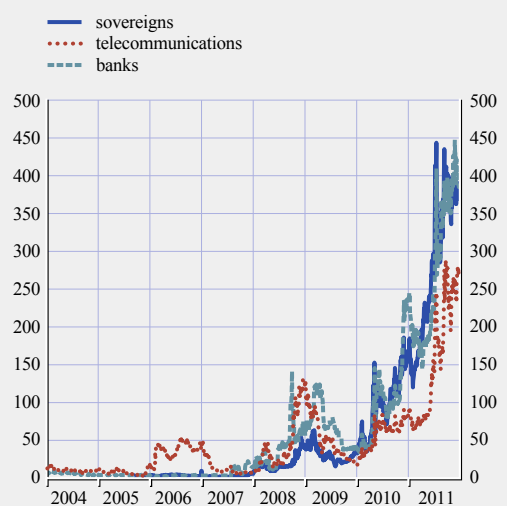
Data for the euro area countries (in the same composition as in Chart 1) comes from the SEC database. For Ireland and Luxembourg, BIS data are used. Data for Greece, Ireland

and Luxembourg start in 1993. For non-euro area countries, BIS data are used (the sum of international and domestic amounts outstanding of bonds issued by corporate issuers).

### PRICE-BASED INDICATOR

**Chart 11 Dispersion in five-year CDS premia across euro area countries**

(daily data; basis points)



Sources: Thomson Reuters and ECB calculations.

### Description

This indicator is based on the evolution of credit default swap (CDS) premia. Specifically, the dispersion in CDS premia of a set of homogenous firms across euro area countries, such as leading telecommunications firms and the largest commercial banks is used, based on the assumption that country and sectoral shocks dominates the news that is firm-specific.

### Additional information

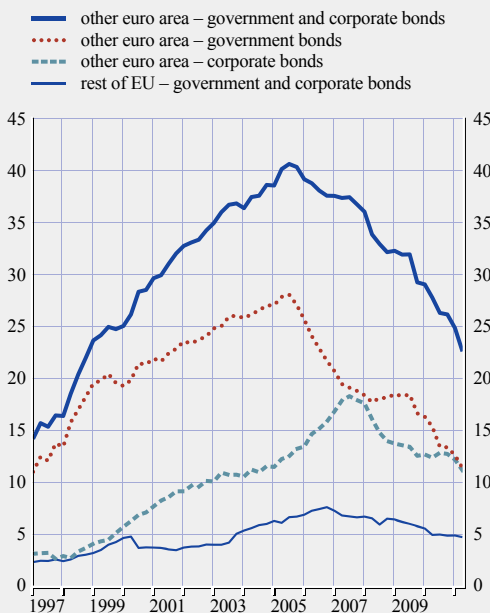
*Sovereign* includes Austria, France, Germany, Greece, Italy, the Netherlands, Portugal and Spain. *Commercial banks* include ABN AMRO (NL), Alpha Bank (GR), Allied Irish Banks (IE), Banca Monte dei Paschi di Siena (IT), Banca Popolare di Milano (IT), Banco Comercial Português (PT), Banco Sabadell (ES), Banco Espírito Santo (PT), Banco Santander Central Hispano (ES), Erste Bank der österreichischen

Sparkassen (AT), Bank of Ireland (IE), Bayerische Hypo- und Vereinbank (DE), BNP Paribas (FR), Commerzbank (DE), Crédit Agricole (FR), Deutsche Bank (DE), Dexia Group (BE), EFG Eurobank Ergasias (GR), Fortis NL (NL), Intesa Sanpaolo SPA (IT), Mediobanca (IT), Natixis (FR), National Bank of Greece (GR), Nordea Bank (FI), Piraeus Group Finance PLC (GR), Société Générale (FR) and UniCredito Italiano (IT). *Telecommunications* includes Deutsche Telekom (DE), France Telecom (FR), Hellenic Telecommunication Organization (GR), KPN (NL), Portugal Telecom (PT), Telecom Italia (IT), Telefónica (ES) and Telekom Austria Group (AT).

**QUANTITY-BASED INDICATORS FOR GOVERNMENT AND CORPORATE BOND MARKETS**

**Chart 12 Share of MFI cross-border holdings of debt securities issued by euro area and EU corporates and sovereigns**

(share of total holdings, excluding the Eurosystem; percentages)



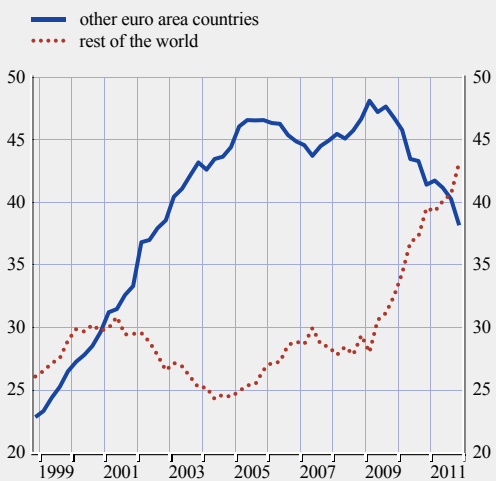
Source: ECB.

**Description**

For a description of this indicator, see below indicators 30 to 32.

**Chart 13 Investment funds' holdings of debt securities issued in other euro area countries and the rest of the world**

(as a share of total holdings of debt securities; percentages)



Source: ECB.

**Description**

This indicator shows the share of investment funds' total holdings of all securities other than shares (including money market paper) issued by residents of the euro area countries other than the country in which the investment fund is located and by residents of the rest of the world (RoW). The composition of the two areas is the one prevailing during the reference period.

The computed indicator has a quarterly frequency.

**Additional information**

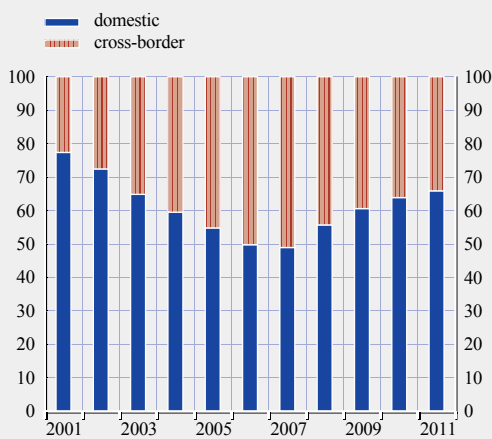
This indicator is constructed on the basis of the balance sheets of euro area investment funds (other than money market funds, which are included in the MFI balance sheet statistics). A complete list of euro area investment funds is published on the ECB's website.

Further information on these investment fund statistics can be found in the *Manual on investment fund statistics*. Since December 2008 harmonised statistical information has been collected and compiled on the basis of Regulation ECB/2007/8 concerning statistics on the assets and liabilities of investment funds.

## INFRASTRUCTURE INDICATOR

**Chart 14 Share of domestic and cross-border collateral used for Eurosystem credit operations**

(as a proportion of the total collateral provided to the Eurosystem; percentages)



Source: ECB.

### Description

This indicator measures the proportions of eligible assets used domestically, i.e. within the same country, and across borders, i.e. in other euro area countries, to collateralise Eurosystem credit operations. The indicator aggregates the data reported monthly by Eurosystem NCBs to the ECB on the domestic and cross-border use of collateral (composed of both CCBM and “links” data). An increase in the cross-border use of collateral points towards higher integration in the collateral market. The ability to use any eligible assets as collateral with any Eurosystem component promotes portfolio diversification among counterparties.

The computed indicator has an annual frequency.

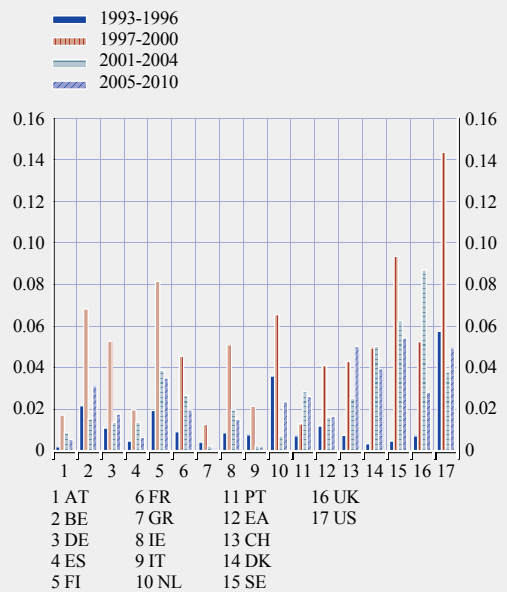
### Additional information

In the current framework, counterparties may transfer cross-border collateral to the Eurosystem via two main channels: the CCBM, which is provided by the Eurosystem, and “links”, which are a market-led solution. The CCBM remains the principal channel, although the proportion of collateral transferred via links has increased.

## EQUITY MARKET INDICATORS

**Chart 15 Early-stage venture capital finance, as a share of GDP, by country of management**

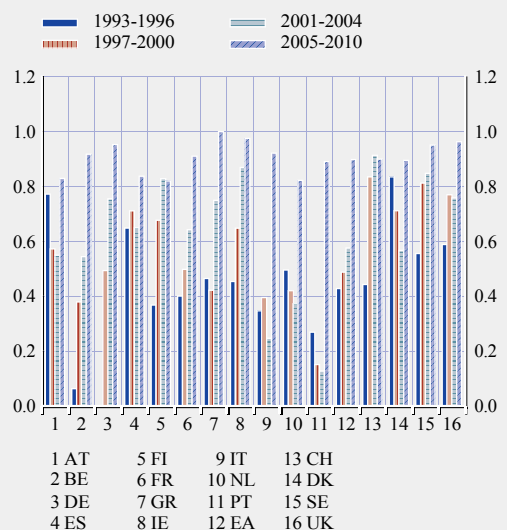
(percentages)



Sources: European Private Equity and Venture Capital Association, PricewaterhouseCoopers, Eurostat and ECB calculations.

**Chart 16 Private equity investment by independent funds as a share of total private equity investment, by country of management**

(percentages)



Sources: European Private Equity and Venture Capital Association and ECB calculations

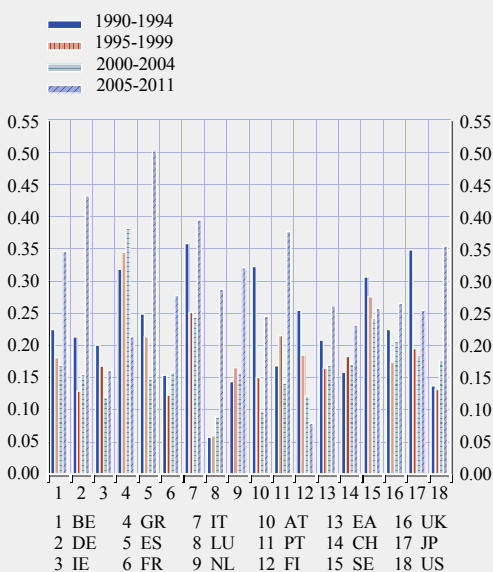
**Description**

Independent private equity investment is provided by private equity firms that are not themselves owned by another financial institution. The data cover investments made by companies in each country. No data are available for Luxembourg, Malta, Slovenia or Japan. Data for Greece are not available for 1993 and 1994. Euro area figures are averages of country data weighted by GDP.

**PRICE-BASED INDICATORS**

**Chart 17 Pricing of global and regional information in the stock market**

(R<sup>2</sup> statistics)



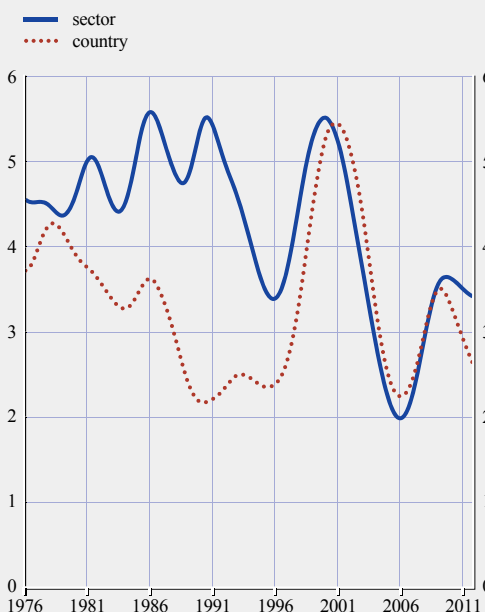
Sources: Thomson Reuters and ECB calculations.

**Description**

Average R<sup>2</sup> statistics for each country are obtained by regressing firms' stock returns on market factors, i.e. the returns on domestic, euro area, US and emerging countries' stock market indices. Typically, low indicator values suggest that the stock returns contain more firm-specific information. Euro area figures are averages of country R<sup>2</sup> statistics weighted by stock market capitalisation.

**Chart 18 Filtered country and sector dispersions in euro area equity returns**

(percentages)



Sources: Thomson Reuters and ECB calculations.

**Description**

This indicator is derived by calculating the cross-sectional dispersion in both sector and country index returns for the euro area countries.<sup>4</sup> Data are calculated on a weekly basis from January 1973 onwards. They include (reinvested) dividends and are denominated in euro. The indicator has a monthly frequency.

The cross-sectional dispersions are filtered using the Hodrick-Prescott smoothing technique, which provides a smooth estimate of the long-term trend component of the series. The smoothing parameter  $\lambda$  is equal to 14,400.

<sup>4</sup> This indicator is based on an approach first presented by Adjaouté and Danthine, see Adjaouté, K. and Danthine, J.P. (2003), "European Financial Integration and Equity Returns: A Theory-based Assessment", in Gaspar, V. et al. (eds.), *Second ECB Central Banking Conference: The transformation of the European financial system*, ECB, May 2003.

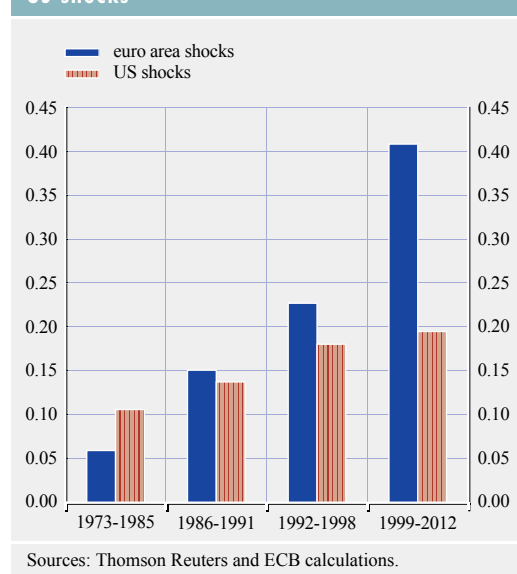




### Additional information

The indicator reflects structural changes in the aggregate euro area equity market.

**Chart 19 Proportion of variance in local equity returns explained by euro area and US shocks**



### Description

To compare the relevance of euro area and US shocks for average changes in country returns, the indicators report the variance ratios, i.e. the proportion of total domestic equity volatility explained by euro area and US shocks respectively. The model-based indicator is derived by assuming that the total variance of individual country-specific returns is given by:

$$\sigma_{c,t}^2 = h_{c,t} + (\beta_t^{eu})^2 \sigma_{eu,t}^2 + (\beta_t^{us})^2 \sigma_{us,t}^2 \quad (6)$$

where  $h_{c,t}$  is the variance of the local shock component.<sup>5</sup> The euro area variance ratio is then given by:

$$VR_{c,t}^{eu} = \frac{(\beta_t^{eu})^2 \sigma_{eu,t}^2}{\sigma_{c,t}^2} \quad (7)$$

and the US variance ratio by a corresponding equation. The conditional variances are obtained using a standard asymmetric GARCH (1,1) model.

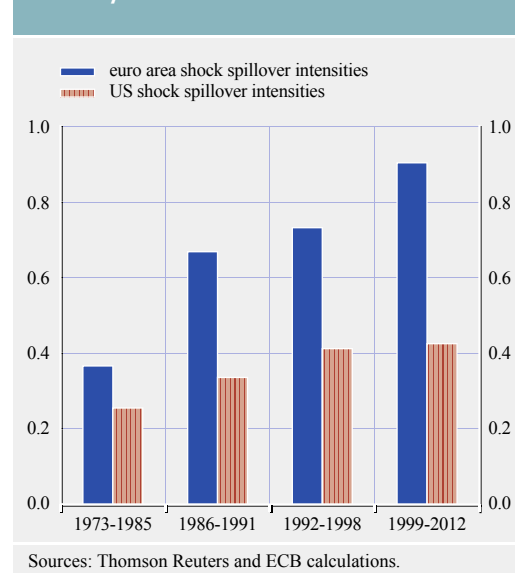
For each period, the indicators report the unweighted average of the relative importance of euro area-wide factors, other than US equity market fluctuations, for the variance of individual euro area countries' equity market indices (the "variance ratio"), and the unweighted average of the relative importance of US equity market fluctuations for the variance of euro area equity markets.

Data refer to Datastream market indices, and have been calculated on a weekly basis since January 1973.

### Additional information

The variance ratio is derived by assuming that local shocks are uncorrelated across countries and that they similarly do not correlate with euro area and US benchmark indices.

**Chart 20 Euro area and US shock spillover intensity**



### Description

This measure is equivalent to the news-based indicators for the bond market. However, empirical evidence suggests that equity returns

<sup>5</sup> See Baele, L. et al., "Measuring financial integration in the euro area", *Occasional Paper Series*, No 14, ECB, 2004, pp. 19-21.

are driven to a significant extent by global factors. For this reason, both euro area-wide shocks and US shocks (as a proxy for global factors) are included in the assessment of common news.

To calculate the relative importance of euro area-wide and US stock market fluctuations for local stock market returns, the stock market returns of individual countries are modelled as having both an expected component and an unexpected one,  $\varepsilon_{c,t}$ .<sup>6</sup> The unexpected component is then decomposed into a purely local shock ( $e_{c,t}$ ) and a reaction to euro area news ( $\varepsilon_{eu,t}$ ) and world (US) news ( $\varepsilon_{us,t}$ ):

$$\varepsilon_{c,t} = e_{c,t} + \beta_{c,t}^{eu} \varepsilon_{eu,t} + \beta_{c,t}^{us} \varepsilon_{us,t} \quad (8)$$

where  $\beta$  represents the country-dependent sensitivity to euro area or US market changes (of the unexpected component).

In order to investigate the development of the betas over time, four dummy variables are introduced representing the periods 1973-1985, 1986-1991, 1992-1998 and 1999-2011.

For each period, the indicators report the unweighted average intensity by which euro area-wide equity market shocks, other than those emanating from the United States, are transmitted to local euro area equity markets and the unweighted average intensity by which US equity market shocks are transmitted to local euro area equity markets.

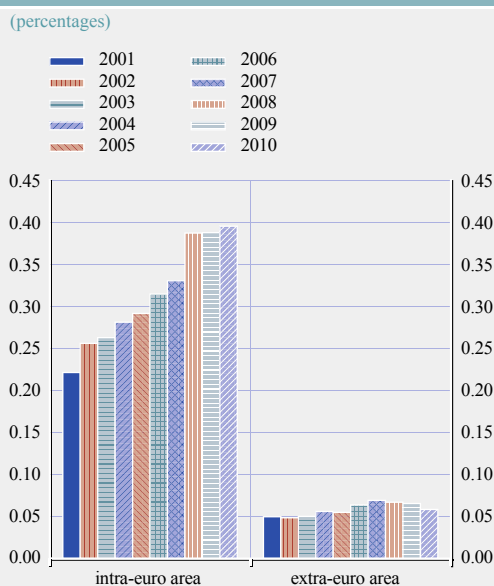
Data refer to the Datastream marked indices, and have been calculated on a weekly basis since January 1973.

#### Additional information

To distinguish global shocks from purely euro area shocks, it is assumed that euro area equity market developments are partly driven by events in the US market. It is furthermore assumed that the proportion of local returns that is not explained by common factors is entirely attributable to local news.

## QUANTITY-BASED INDICATORS

Chart 21 The degree of cross-border holdings of equity issued by euro area residents



Sources: IMF, Thomson Reuters and ECB calculations.

### Description

This indicator measures the degree of cross-border holdings of equity securities among euro area countries.

*Intra-euro area* is defined as the share of equity issued by euro area residents and held by other euro area residents (excluding central banks):

$$\frac{\sum_i \sum_{j \neq i} Outstock_{ij,t}}{\sum_i MKT_{i,t} + \sum_i TOutstock_{i,t} - \sum_i TInstock_{i,t}} \quad (9)$$

$i, j \in \{euroareacountries\}$

where  $Outstock_{ij}$  denotes the value of equity issued by residents of euro area country  $i$  and held by residents of euro area country  $j$  ( $i \neq j$ );  $MKT_i$  stands for stock market capitalisation in

<sup>6</sup> The expected return is obtained by relating euro area and US returns to a constant term and to the returns in the previous period. The conditional variance of the error terms is governed by a bivariate asymmetric GARCH (1,1) model.

country  $i$ ,  $TOutstock_i$  is the total foreign equity held by country  $i$  and  $TInstock_i$  is the total foreign liabilities of country  $i$ .

*Extra-euro area* is defined as the share of euro area equity held by non-residents of the euro area (excluding central banks). The measure takes the following form:

$$\frac{\sum_i \sum_r Outstock_{i,r,t}}{\sum_r MKT_{r,t} + \sum_r TOutstock_{r,t} - \sum_r TInstock_{r,t}} \quad (10)$$

$i \in \{\text{euro area countries}\}$   
 $r \in \{\text{rest of the world}\}$

where  $Outstock_{i,r}$  denotes the value of equity issued by residents of euro area country  $i$  and held by non-residents of the euro area  $r$  (*rest of the world*);  $MKT_r$  stands for market capitalisation in country  $r$ ;  $TOutstock_r$  is the total foreign equity held by country  $r$  and  $TInstock_r$  is the total foreign liabilities of country  $r$ .

The computed indicator has an annual frequency.

### Description

The indicator shows the share of investment funds' combined holdings of all shares and other equity (excluding investment fund shares/units) issued by residents of the euro area outside the country in which the investment fund is located and by residents of the rest of the world. The compositions of the two areas are those prevailing during the particular reference period. The indicator has a quarterly frequency.

### Additional information

This indicator is constructed on the basis of the balance sheets of euro area investment funds (other than money market funds, which are included in the MFI balance sheet statistics). A complete list of euro area investment funds is published on the ECB's website.

Further information on these investment fund statistics can be found in the *Manual on investment fund statistics*. Since December 2008 harmonised statistical information has been collected and compiled on the basis of Regulation ECB/2007/8 concerning statistics on the assets and liabilities of investment funds.

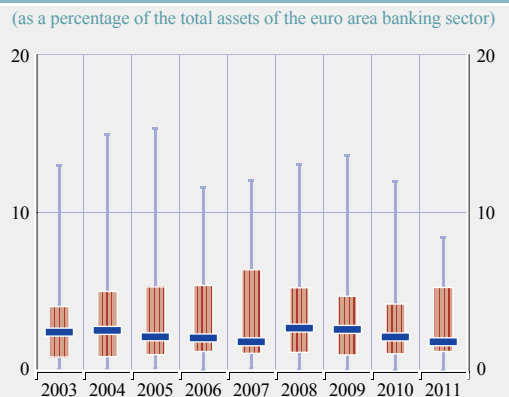
**Chart 22 Investment funds' holdings of equity issued in other euro area countries and the rest of the world**



## BANKING MARKET INDICATORS

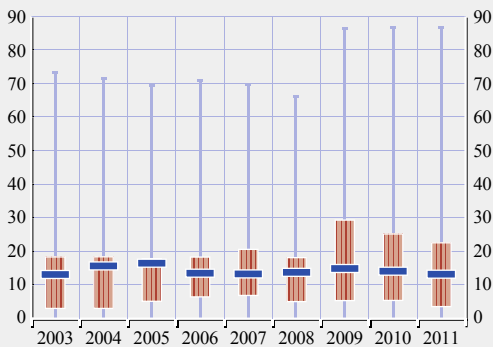
### CROSS-BORDER PRESENCE INDICATORS

**Chart 23 Dispersion of the total assets of euro area bank branches across euro area countries**



**Chart 24 Dispersion of the total assets of euro area bank subsidiaries across euro area countries**

(as a percentage of the total assets of the euro area banking sector)



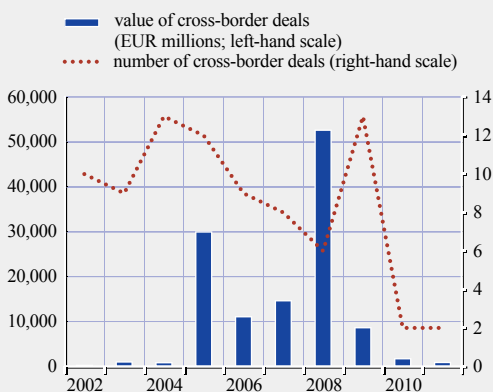
Source: ECB.

**Description**

These two indicators describe the development over time of the assets of foreign branches and subsidiaries of euro area banks within euro area countries (with changing euro area composition) other than the home country as a share of the total assets of the euro area banking sector. The level and dispersion of the country data are described by the following dispersion measures: the minimum, the first quartile (25<sup>th</sup> percentile), the median (50<sup>th</sup> percentile), the third quartile (75<sup>th</sup> percentile), and the maximum. These computed indicators have an annual frequency.

**Chart 25 Euro area cross-border bank M&A activity**

(value of intra-euro area cross-border M&As and absolute number)



Sources: Bureau van Dijk (Zephyr database) and ECB calculations.

**Description**

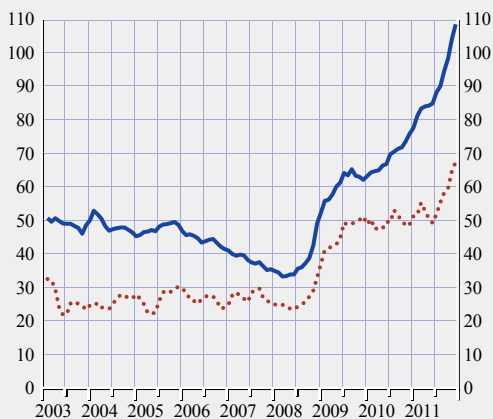
This indicator shows the value of euro area bank M&A activity as a further measure of the degree of cross-border integration of euro area banking markets. The number of deals is also displayed.

**PRICE-BASED INDICATORS**

**Chart 26 Cross-country standard deviation of MFI interest rates on new loans to non-financial corporations**

(unweighted, basis points)

- floating rate and up to 1 year, up to and including €1 million
- ..... floating rate and up to 1 year, over €1 million



Source: ECB.

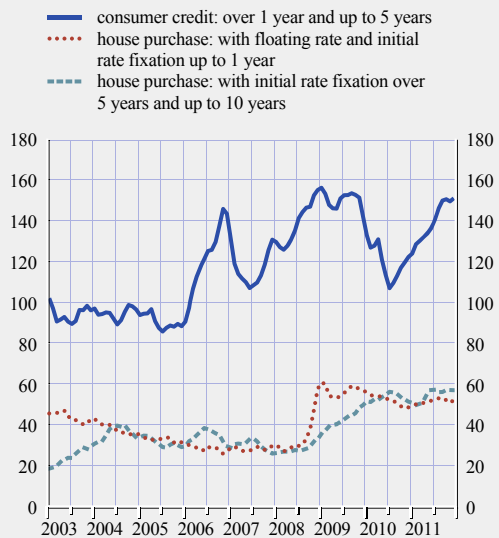
**Description**

The price measures for credit market integration are based on MFI interest rates (MIRs) on new business reported to the ECB at monthly frequency since January 2003.

For the purpose of measuring financial integration, it might be preferable to compute the dispersion as the standard deviation of unweighted interest rates at the level of individual MFIs. However, these data are not available at the ECB, and therefore standard deviations of weighted rates are calculated instead.

**Chart 27 Cross-country standard deviation of MFI interest rates on new loans to households**

(unweighted; basis points)



Source: ECB.

The following general notation is used for each of the above categories of loan or deposit:

$r_{c,t}$  = the interest rate prevailing in country  $c$  in month  $t$

$b_{c,t}$  = the business volume in country  $c$  in month  $t$

$w_{c,t} = \frac{b_{c,t}}{B_t}$  is the weight of country  $c$  in the total euro area business volume  $B$  in month  $t$  where

$$B_t = \sum_c b_{c,t}$$

The MFI interest rates in the euro area are computed as the weighted average of country interest rates  $r_{c,t}$ , taking the country weights  $w_{c,t}$

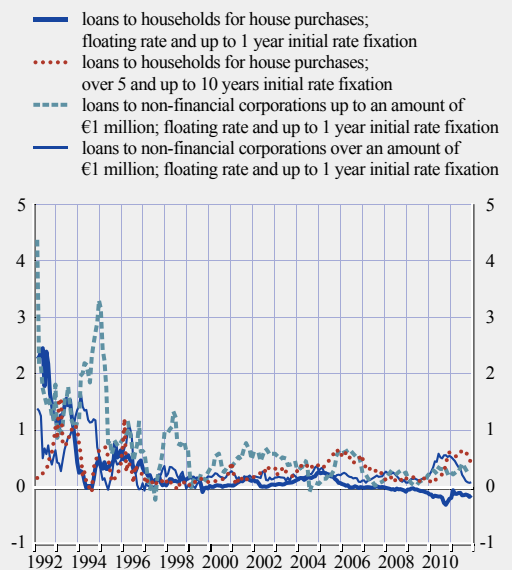
$$r_t = \sum_c w_{c,t} r_{c,t} \quad (11)$$

The euro area weighted standard deviation takes the following form:

$$M_t = \sqrt{\sum_c (r_{c,t} - r_t)^2 w_{c,t}} \quad (12)$$

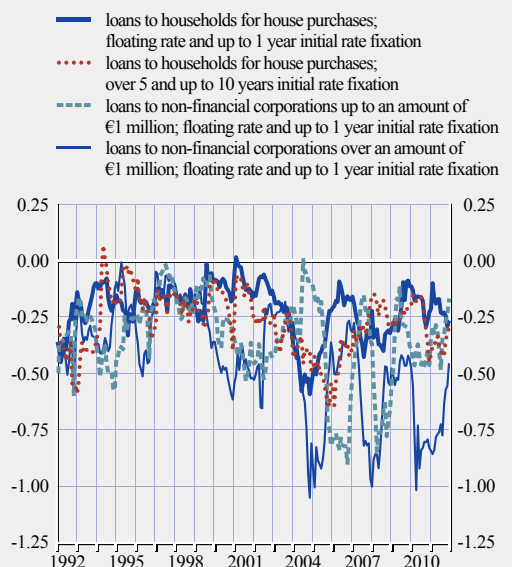
The monthly data are smoothed by calculating a three-month centred moving average of the standard deviation.

**Chart 28 Intercept convergence for selected banking retail interest rates**



Source: ECB.

**Chart 29 Beta convergence for selected banking retail interest rates**



Source: ECB.

### Description

The two indicators are based on MIRs on new business reported to the ECB at monthly frequency since January 2003. Before that date, estimated historical series have been used.

The beta convergence measure indicates the speed at which different rates converge to a specific benchmark. This measure is obtained by running a panel regression of the change in the spread of the relevant retail interest rate in each country relative to the corresponding benchmark rate, i.e. the lowest country interest rate level for each loan instrument. The following panel regression is estimated:

$$\Delta Spr_{i,t} = \alpha_i + \beta Spr_{i,t-1} + \sum_{l=1}^L \gamma_l \Delta Spr_{i,t-l} + \varepsilon_{it} \quad (13)$$

using the change in the spread of the relevant retail interest rate in one country relative to the corresponding rate of the benchmark country as a dependent variable ( $Spr$ ).  $L$  denotes the number of lags and is set equal to 1. The coefficients are estimated using a panel regression with fixed effects ( $\alpha_i$ ). A negative beta coefficient signals that convergence is taking place. Furthermore, the negative beta indicates that high spreads have a tendency to decrease more rapidly than low spreads. The size of beta measures the average speed of the convergence in the overall market. If the beta approaches -1, the convergence is complete. At the same time, large values of the country specific effects ( $\alpha_i$ ) are indicative of persistent market segmentation related to differences in institutional and other factors at the country level.

The conditional betas are derived by estimating the above regression using the first 18 months of monthly averages. The data window is then moved ahead one month at a time and the equation is re-estimated until the last observation is reached. A time series for  $\beta_t$  is thus obtained.

The model-based indicator has a monthly frequency.

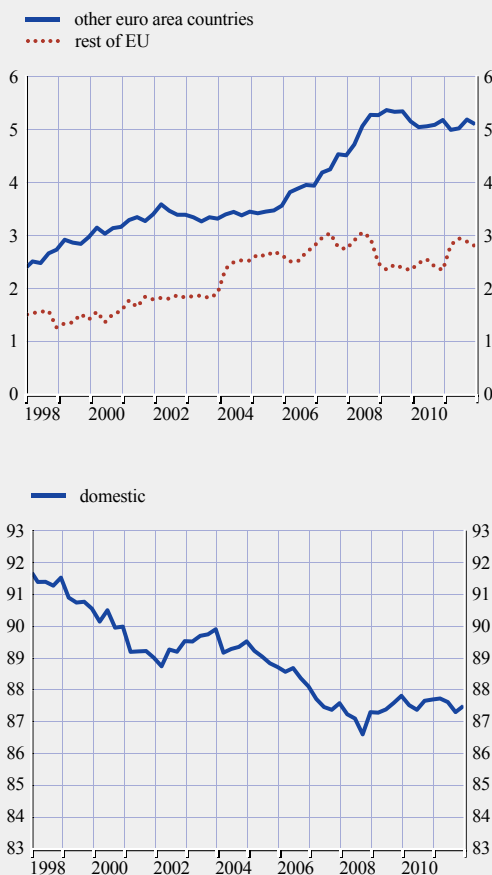
### Additional information

The outcome of the econometric specification depends on the selection of the most appropriate benchmark interest rate, in this case the lowest country interest rate. For the selected interest rates, the chosen benchmark was the French lending rate, except in the case of housing loans with variable rate and initial fixation of up to one year, for which the chosen benchmark was the Dutch rate.

### QUANTITY-BASED INDICATORS

Chart 30 MFI loans to non-MFIs: outstanding amounts by residency of the counterparty

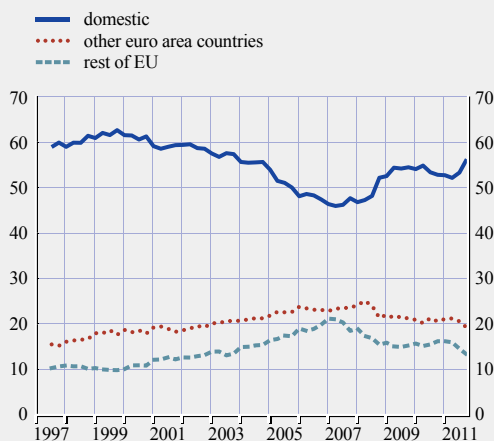
(share of total lending excluding the Eurosystem; percentages)



Source: ECB.

**Chart 31 MFI loans to MFIs outstanding amounts by residency of the counterparty**

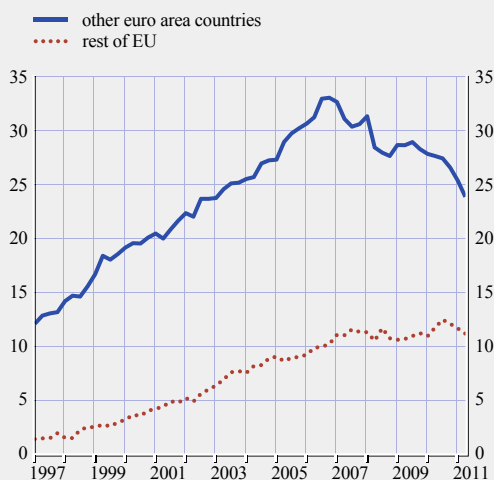
(share of total lending excluding the Eurosystem; percentages)



Source: ECB.

**Chart 32 MFI holdings of securities issued by MFIs: outstanding amounts by residency of the counterparty**

(as a share of total holdings; percentages)



Source: ECB.

### Description

The indicators in Charts 30 and 31 show loans granted by euro area MFIs (excluding the Eurosystem) to non-MFIs and other MFIs broken down by residency of counterparty.<sup>7</sup> In Chart 32 a similar indicator is shown for securities issued by euro area and other EU MFIs and held by euro area MFIs.

These indicators have a quarterly frequency.

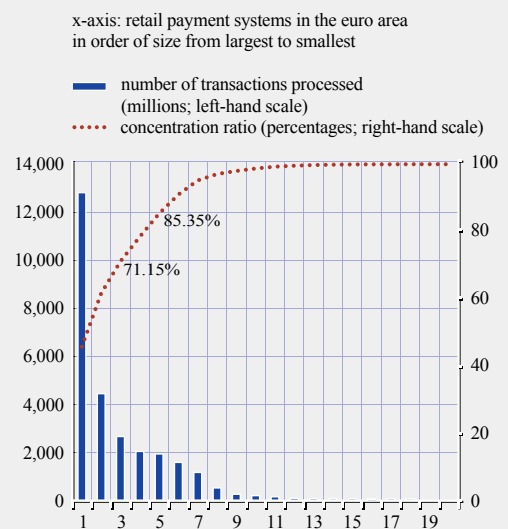
### Additional information

These indicators are constructed on the basis of the national aggregated MFI balance sheet statistics reported to the European Commission at a monthly and quarterly frequency.<sup>8</sup>

These balance sheet items are transmitted on a non-consolidated basis. This means that the positions with foreign counterparties include those with foreign branches and subsidiaries.

## INFRASTRUCTURE INDICATORS FOR RETAIL PAYMENT SYSTEMS

**Chart 33 Concentration ratio of retail payment infrastructures in the euro area (2010)**



Source: ECB.

### Description

This indicator is a concentration ratio of retail payment infrastructures in the euro area in

<sup>7</sup> The compositions of the euro area and the rest of the EU are those applicable during the respective reference periods.

<sup>8</sup> These data cover the MFI sector excluding the Eurosystem and also include data on money market funds (MMFs). It is not yet possible to derive indicators that strictly refer to banking markets. Consequently, as MMFs typically invest in inter-MFI deposits and short-term securities, the indicators displaying data for these assets are somewhat affected by the MMFs' balance sheet items.

2010 and shows the number of transactions processed by retail payment infrastructures and the cumulative share of the processed volumes. In 2010 there were 20 retail payment infrastructures located in the euro area. The three largest together processed 71% of the total market volume. The ratio increases to 85% for the five largest infrastructures. The five smallest infrastructures together processed less than 0.1% of the total market volume.

#### Additional information

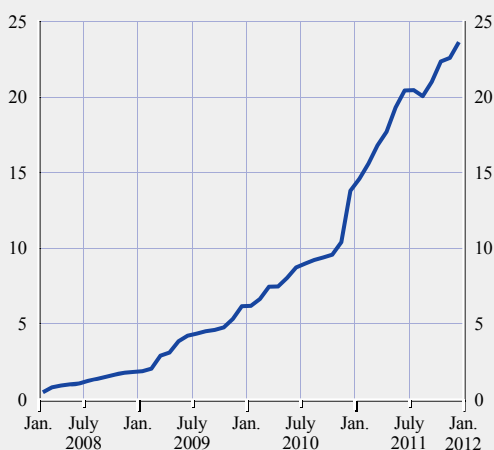
This indicator is based on the information reported in ECB Payments Statistics, which are available on the Statistical Data Warehouse pages of the ECB's website.

or via correspondent banking. Nevertheless, focusing on the transactions processed by CSMs provides a good approximation of SCT usage within SEPA.

The higher the value of the indicator, the higher is the usage of the SEPA product. A value of 100% would indicate that only SEPA products are used and have fully replaced the non-SEPA instruments (i.e. SEPA has been fully implemented with regard to this particular instrument) in the “bank-to-bank” domain, as measured by the CSM data.

**Chart 34 Credit transfer transactions processed in SEPA format in the euro area**

(percentage of total transactions)



Source: ECB.

#### Description

This indicator presents, on a monthly basis, the share of euro area SEPA credit transfer (SCT) transactions as a percentage of the total volume of all credit transfer transactions (i.e. credit transfers in “old” formats as well as SCT) processed by the infrastructures, namely clearing and settlement mechanisms (CSMs) located in the euro area. The indicator does not include “on-us” transactions (i.e. credit transfers between accounts at the same bank) or transactions cleared between banks bilaterally





