European Financial Stability and Integration

Report 2012

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EXECUTIVE SUMMARY

This chapter presents how the crisis in financial markets in Europe has unfolded in its fifth year. Financial developments in 2012 have had a significant impact in holding back an economic rebound. In particular, they have born heavily on economic growth and employment performance, as visible in negative annual GDP growth and rising unemployment figures across the European Union (EU) and the Euro area. At the same time, lower growth has continued pressurizing agents' balance sheets, general financing conditions and the capacity of agents to take new risks.

In this regard, **Chapter 1 presents how the importance of deepening economic and financial integration across the EU unveiled in 2012.** In particular, taken together, the cumulative impact of the policy initiatives proposed by the European Commission to build a Banking Union and the open commitment made by the European Central Bank (ECB) to do whatever necessary, within its mandate, to redress the risk of a euro breakup, seemed to have been a powerful deterrent to reduce stress across the board in EU financial markets.

Establishing a banking union is, however, one of a series of initiatives being developed by the EU institutions to reinforce financial stability and integration across the EU27. In this regard, **chapter 2 presents the main policy initiatives that have been or are being implemented, adopted, presented, or developed in 2012.** It covers both macro and micro-financial policies, including financial assistance and other support measures; economic governance reforms, in the context of reinforced surveillance of Member States economic policies; and the on-going Commission reform programme in the financial services sphere. The sheer magnitude of proposals and the advanced stage of their implementation evidence how far policymakers and, in particular, regulators have come since the Lehman Brothers bankruptcy.

The detailed summary of initiatives presented in chapter 2 does not preclude zooming in on a few fronts currently being analysed by the Commission, an aspect that is covered in chapters 3 to 5. Hence, **chapter 3 takes stock of the important debate initiated by governments, international organizations, and, ultimately, the general public to analyse precisely the business models of the financial institutions**. In particular, the chapter analyses the desirability of adopting structural reforms in the banking sector. Several EU Member States (UK, FR, DE, NL, etc.) and other G20 countries (US) have already embarked on structural reform agendas to address lingering problems in this sector. Having a pan-European approach in mind, the High-level expert group (HLEG) on structural reforms of the EU banking sector, chaired by Erkki Liikanen, recommended a package of reform measures in October 2012.

Structural reform initiatives may yield both ex-post benefits (improved resolution) and ex-ante benefits (improved risk management, monitoring, regulation and supervision). However, given the important and desirable diversity of financial systems and business models in the EU, and the relatively intrusive nature of structural reforms (coming on top of several other regulatory initiatives), any legislative proposals need to be grounded on broad public consultations and thorough evaluation, on the basis of a careful assessment of its effectiveness, efficiency, and coherence in the overall regulatory agenda. A pan-EU structural reform initiative could ensure that national structural reform efforts are not diverging, the underlying objectives are reached, and the functioning of the internal market is safeguarded. In any case, the ultimate overarching objective is to establish a stable banking system that serves the needs of citizens and the economy

of the entire European Union, which helps to foster economic growth by realigning incentives, reducing instability and improving resource allocation.

Banks are one of the main players in the financial system, but it is important not to lose sight if the financial instruments and activities performed by banks can be provided differently, including other trading venues or multilateral market platforms. In this regard **chapter 4 describes progress to regulate the over-the-counter (OTC) derivatives markets.** Derivatives play an indispensable role in modern finance, but the recent financial crisis has shown that they have the potential to exacerbate financial instability. In general, both the lessons of the financial crisis and recent academic research suggest that OTC derivatives markets have the potential to impose large social costs. Consequently, financial regulation has an important role to play in mitigate them, particularly given the light regulatory approach that characterized this field of finance prior to the crisis. To tackle these inherent vulnerabilities, the EU focused its attention on the lack of transparency, as well as on the excessive counterparty and operational risks in OTC derivatives markets.

The European Markets Infrastructure Regulation (EMIR) embodies the principal EU regulatory response in this field, entering into force in 2012 along with its associated principal technical standards. Stronger EU legal framework is expected to promote further integration of cross-border financial market infrastructures. At the same time, EMIR still has to be tested in practice and its effective implementation must, therefore, be carefully monitored. The EU regulatory agenda in the field of OTC derivatives includes also other legislative initiatives that are still negotiated. In particular, the observed move towards more secured funding along with the collateralisation requirements for OTC derivatives mandated by EMIR are expected to increase demand for high quality collateral at a time when its supply is constrained. This trend drives the development of new business models to improve market liquidity, which may introduce new risks into the financial system. Thus, further efforts are required to address the structural vulnerabilities linked to OTC derivatives in a holistic way.

Finally, it is imperative that the Commission, national regulators and, in general, policymakers do not to lose sight of the pivotal role the financial sector has in supporting the real economy and in providing jobs and growth for society. **The analysis in chapter 5 underscores this point by examining the difficulties small and medium-sized enterprises (SMEs) experience in their access to funding.** As is well known, SMEs present the bulk of EU businesses, providing jobs and contributing to wealth and economic growth. Nevertheless, historically they have always faced significant difficulties to access funding; one of the main reasons being the lack of credible public information about them. This has generated elevated costs and uncertainty for potential providers of funds to evaluate their credit worthiness. And it is one reason why they have traditionally strongly relied on bank financing: bank loans and other advances accounted for 85% of total non-financial corporate debt outstanding in the Euro area and in the UK in 2011, while non-financial corporate bonds accounted for only 15%. This is not the case across OECD economies: in the United States the proportion is 53% to 47%. As European banks are facing significant challenges, alternative finance sources, such as trade credit or market-based funding, are gaining importance.

The business information and credit scoring (BI & Scoring) industry can improve SMEs' access to finance by providing information on their credit worthiness (scores). They can also establish risk awareness within the firm through progressive credit risk management systems and facilitate business decision-making. However, roughly 25% of European SMEs are not scored, because of insufficient or inappropriate data. Given the significant role SMEs have on growth and job creation, the Commission examined the landscape of the BI & Scoring industry in Europe. Results show that the business models of the firms are quite diverse, even if there is a high degree of firm concentration, ensuring stability and less pro-cyclicality in the EU-market. The BI & Scoring is not a regulated industry, which is one of the reasons for the variety in the quality of scores. It is therefore worth considering whether establishing "minimum requirements" or "technical standards" for this industry could help ensure a common ground for SMEs' information in Europe. In particular, developing harmonised minimum quality standards on external credit scoring for SMEs might facilitate (cross-border) financing of their investments and deepen market integration. Such initiatives could help bridge the gap with the more diverse financing opportunities available for SMEs in the US relative to Europe.

CHAPTER 1: MARKET DEVELOPMENTS

1.1 INTRODUCTION

This chapter presents how the crisis in financial markets in Europe has unfolded in its fifth year. Financial developments in 2012 have had a significant impact in holding back an economic rebound. In particular, they have born heavily on economic growth and employment performance, as visible in negative annual GDP growth and rising unemployment figures across the European Union (EU) and the Euro area. At the same time, lower growth has continued pressurizing agents' balance sheets, general financing conditions and the capacity of agents to take new risks.

In this regard, market developments have unveiled the importance of deepening economic and financial integration across the EU. Taken together, the cumulative impact of the policy initiatives proposed by the European Commission to build a Banking Union and the open commitment made by the European Central Bank (ECB) to do whatever necessary, within its mandate, to redress the risk of a euro breakup, seemed to have been a powerful deterrent to reduce stress across the board in EU financial markets.

Section 1.2 presents the macroeconomic and financial context faced at the beginning of 2012. Section 1.3 then examines how the situation evolved in sovereign debt markets. Sovereigns and their banking sectors have become interlaced in a feedback loop that negatively impacted and exacerbated risks to both the sovereign and its respective banking sector. In this regard, section 1.4 starts by presenting the Commission's proposal for a banking union in Europe. It also highlights different elements that have affected banks' funding conditions, an important driver of their lending activity throughout 2012, particularly given the increased financial fragmentation present in the EA. Section 1.5 focuses on the situation in wholesale financial markets faced by non-financial corporations. The insurance sector is the object of attention of section 1.6.

1.2 MACROECONOMIC AND MACRO-FINANCIAL CONTEXT

The year 2011 ended with positive momentum, supported by strong policy decisions to address the adverse feed-back loops between sovereigns, the banking sector and economic growth, as was already analysed in depth in last year's EFSIR. Reinforced economic governance across the EU27 and initiatives aimed at further deepening the economic and monetary union, together with the measures adopted by the European System of Central Banks, including the Long Term Refinancing Operations (LTRO) announced by the ECB, brought some respite to financial markets at the end of the year.

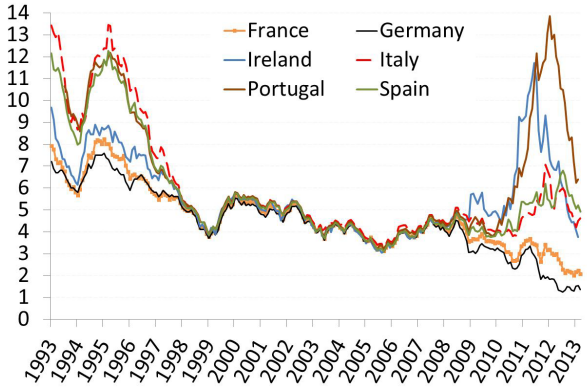
Nevertheless, the unwinding of previously accumulated macroeconomic imbalances (subsection 1.2.1) continued to shape both macroeconomic developments and events on financial markets in 2012. This was not only visible in the programme countries (EL, IE, PT), where budgetary consolidation efforts and structural reforms were closely watched by investors. It became also evident in several other Member States, where external imbalances created considerable tensions in the funding of both public debt and banks, particularly with regards to foreign investors. Vulnerabilities became particularly manifest taking into account how external funding takes place across the Euro area (subsection 1.2.2), and financial markets become increasingly fragmented,

making several banks in vulnerable Member States largely reliant on ECB funding (subsection 1.2.3).

1.2.1 Imbalances in the Euro area

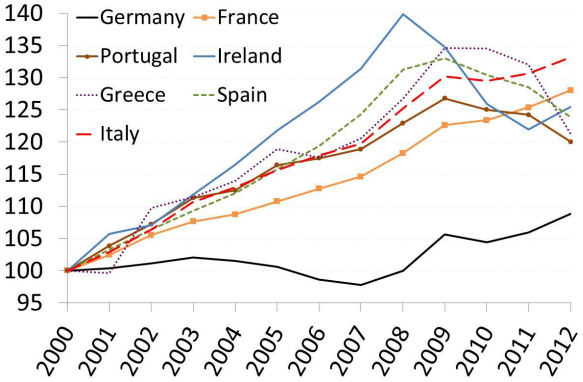
The detrimental role of macroeconomic imbalances for economic activity has been widely recognised. At the Union level, it led to the establishment of the EU's Macroeconomic Imbalance Procedure (MIP). Since the reports prepared in the MIP framework[1] provide a detailed analysis of on-going trends and underlying factors, this section only sketches how divergences in fundamentals materialise in a monetary union. In particular, as they cannot find their way into changes of the nominal exchange rate, factor prices (interest rates and labour costs) have become an important mechanism through which persistent cross-country differences in economic performance surface.

Chart 1.2.1: **Long term interest rates**.



Source: Organization for Economic Cooperation and Development

Chart 1.2.2: **Unit labour costs in EMU** (index 2000=100)



Source: Eurostat

Chart 1.2.1 illustrates the impact generated by the establishment of the EA on funding conditions across Member States: in the 1990's, interest rates converged to the point where differences became non-existent, once euro-area membership seemed close to certain. The across-the-board fall in the cost of funding increased the spread between the return on investments and funding costs in some EA Member States. This had a very significant impact in their economies, *inter alia*, with respect to their:

1. **Competitiveness.** The decrease in the cost of capital stimulated an expansion of investment activity and boosted aggregate demand. However, weaker competitive pressure in non-tradable sectors in interaction with market frictions, price and wage rigidities and labour´s bargaining power eventually found its way into higher labour costs in several Member States. Ultimately, the resulting labour cost divergences that arose between Member States were not fully justified by improvements in productivity. Consequently, unit labour costs (ULCs)[2] diverged, as chart 1.2.2 shows, leading to a pronounced loss of competitiveness in some Member States.

[1] For an overview of key documents related to the Macroeconomic Imbalance Procedure, see http://ec.europa.eu/economy_finance/economic_governance/macroeconomic_imbalance_procedure/index_en.htm.

[2] Unit labour costs are defined as total labour costs divided by real production (or total labour compensation per unit of labour divided by real production per unit of labour. The latter is equal to labour productivity.

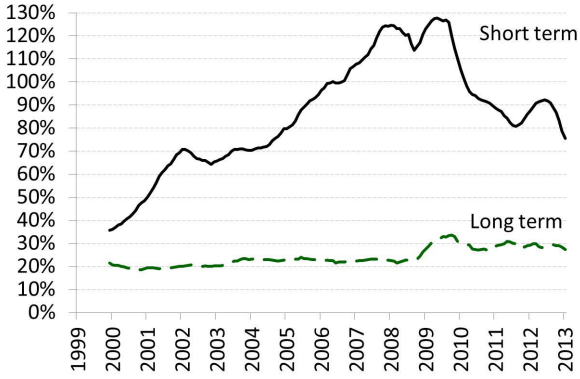
2. **Debt levels.** The fall in the cost of funding mentioned above, in conjunction with rising aggregate demand incentivised firms and households to take on increasing levels of debt intermediated through financial institutions. Among other aspects, this resulted in rising real estate prices, particularly house prices, in a number of Euro area Member States, thereby creating a positive wealth effect, which, in turn, stimulated aggregate demand, but also diluted the notion of vulnerabilities induced by increased private indebtedness. The public sector also benefitted, as the low interest rate environment made the cost of servicing debt more bearable. Balance sheets of financial institutions expanded and capital inflows increased the overall pool of funds available to tap.

In the absence of qualitative improvements in goods and services, the price competitiveness loss witnessed in some Member States vis-à-vis the rest of the EA could, in principle, suggest bringing labour costs close to the levels observed prior to the EA. Retrenching wages to regain competitiveness is a demanding issue on its own. It represents an altogether greater policy challenge if indebtedness has already reached high levels, particularly if the non-tradable sector (usually, real estate) has accumulated financial debt in the production ramp-up prior to the crisis[3].

In some Member States, real estate bubbles and oversized construction sectors have become a landmark of the financial crisis. Their correction implies a sizeable loss in financial wealth of households and firms spilling-over into the quality of bank assets. Indeed, as the share of non-performing loans rose, loan loss provisions increased and the value of real estate as collateral eroded. Consequently, a number of banks exposed to real estate booms have found their solvency questioned. The deleveraging pressure in the private sector - both financial and non-financial - reduced economic activity and therewith tax revenues. Funding costs for the public sector increased because, in addition to higher interest rates, the deficit to be financed also swelled. The fiscal burden of supporting banks added to the tensions experienced by the public sector (see below).

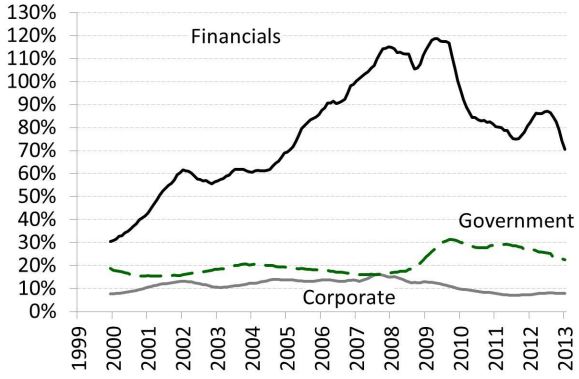
1.2.2 External capital flows

Chart 1.2.3: **Gross issues by original maturity, euro-denominated debt securities**. Euro area (% of GDP)



Source: European Central Bank

Chart 1.2.4: **Gross issues by issuer sector, euro-denominated debt securities**. Euro area (% of GDP)



Source: European Central Bank

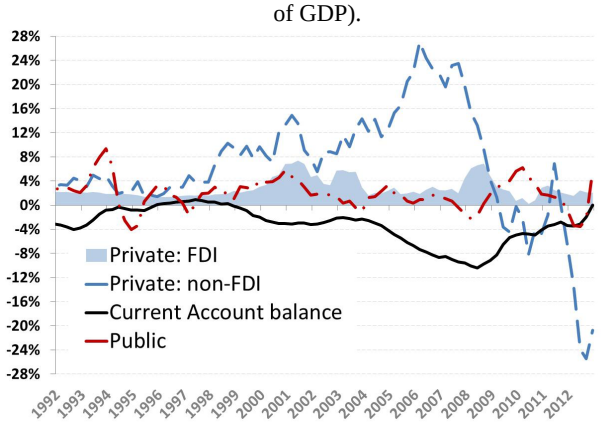
In many episodes of financial crisis, vulnerability to large downward adjustment in relative prices of an oversized and over-indebted economic sector is a common characteristic. An important

[3] If the sector's income falls, its debt servicing capacity becomes compromised.

additional element is the term structure of the liabilities incurred, as different types of capital flows have different associated benefits and costs.

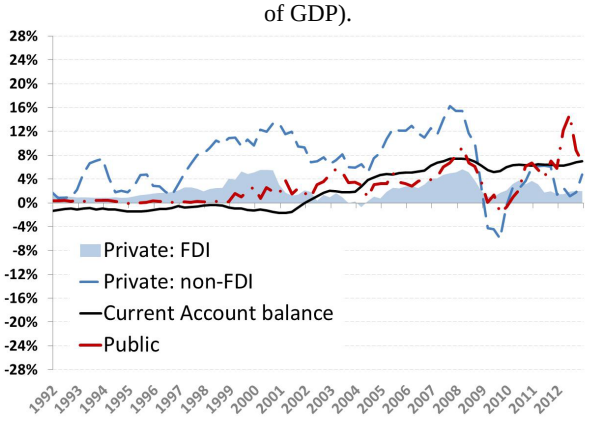
Financial integration in the EA has been driven largely by portfolio flows, extending bank loans and negotiating securities across borders, compounded by another pattern: short term debt issuance4. In this regard, charts 1.2.3 and 1.2.4 present the pattern of debt security issuance that has taken place since the establishment of the EA, in terms of the maturity of the issued instruments and institutional sectors undertaking such issuance. First of all, both charts document declining (gross) debt issuance since 2009. Most issuance was in short term debt securities (chart 1.2.3) and financial institutions accounted for a dominant market share (chart 1.2.4).

Chart 1.2.5: **Foreign investment in Spain. Gross flows** (% of GDP).



Source: Bank of Spain. Balance of Payments.
Note: a positive (+) sign is a liability for Spanish residents.

Chart 1.2.6: **German investment abroad. Gross flows** (% of GDP).



Source: Bundesbank. Balance of Payments
Note: a positive (+) sign is an asset for German residents.

Charts 1.2.5 and 1.2.6 zoom in on the composition of capital flows in two Euro area Member States, Spain and Germany. Since the relationship of capital flows between Member States with a current account surplus and those with a deficit are analysed extensively in European Commission (2012), this section is limited to an illustration of the importance of private non-FDI flows, which are largely cross-border credit flows among banks. Chart 1.2.5 presents gross foreign investment entering Spain, a country that has run systematic current account deficits with respect to the rest of the world, receiving net capital inflows that reached, at times, over 10% of its annual GDP during the period prior to the crisis (approximately EUR 100 billion per annum). Chart 1.2.6 presents gross investment abroad by Germany, a country that has run consistent current account surpluses, i.e. it has provided the rest of the world funds which reached, at times, over 7% of its annual GDP (approximately EUR 250 billion).

First of all, both charts illustrate the decline that has taken place in foreign investment since the outbreak of the crisis, both entering into Spain, to the point where investors have been liquidating previous investments (represented by negative flows), and exiting from Germany. Other qualitative features stand out:

(i) Gross capital flows are a multiple of net capital flows both for Spain and Germany (the ratio represents approximately 3 to 1 in both cases). That is, gross annual capital flows

[4] In this regard, it is important to bear in mind that the economic literature suggests capital flows associated to the transfer of technology and to establishing a long term commitment with the receiving Member State seem to be more supportive of long term growth and financial stability. See Kose, Prasad, Rogoff and Wei (2009).

entering Spain have reached approximately EUR 270 billion euros and gross annual capital flows exiting Germany have reached approximately EUR 740 billion.

(ii) Private non-direct investment (non-FDI) flows entering Spain and exiting Germany increased substantively since the establishment of the EA, until the beginning of the crisis.

(iii) Direct investment (FDI) flows entering Spain and exiting Germany barely increased since the establishment of the EA.

(iv) Public flows were barely affected by establishing the EA, until the onset of the crisis.

1.2.3 External funding constraints

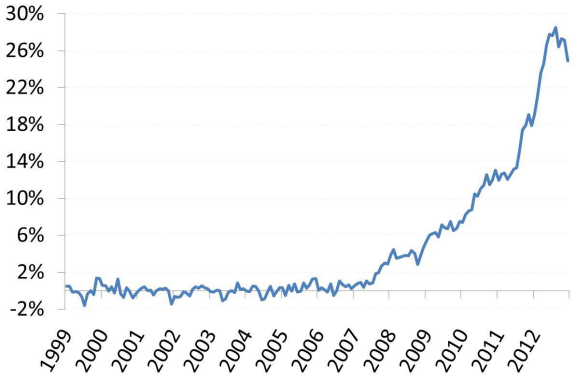
Financial crises can impair an economy's access to international capital markets, as international investors tend to withdraw their engagement relatively quickly. In some instances, this behaviour can further determine a significant (and recurrent) fall in capital inflows[5].

Since the sovereign debt crisis erupted, several such instances have been identified in the EA. They have had an impact on prices, contributing to rising interest rates on sovereign debt markets, and probably as importantly on quantities, restricting the ability of Sovereigns to obtain funding on markets at sustainable interest rates. This has led to the establishment of financial assistance and support mechanisms, further described in Chapter 2 of this report.

The withdrawal of foreign investors, both from abroad and other Euro area Member States, also contributed to several banks in vulnerable Member States encountering difficulties to obtain funding on markets. These banks became largely reliant on central bank funding. This change from private to central bank funding finds its reflection in the TARGET 2 system, which is the inter-bank payment system in the Euro area. Accordingly, changes in the credit or debit of national central banks' TARGET 2 claims have become a prominent indicator of fragmentation and tensions on wholesale funding markets[6].

In this regard, Chart 1.2.7 presents the external position of the Bundesbank vis-à-vis the Eurosystem[7]. The chart illustrates, first of all, rising tensions in the Euro area during the first half of 2012: the peak of the position was reached in August 2012, amounting to EUR 751 billion. Moreover, the fall from the August peak highlights that once investors became more confident again that adverse scenarios will not materialise they were prepared to move capital across EA borders once again.

Chart 1.2.7: **External Position of the Bundesbank. Claims with the Eurosystem** (as % of German GDP).



Source: Bundesbank

[5] There is an extensive economic literature on the phenomenon of sudden stops. See, for example, Calvo, Izquierdo and Mejia (2004), Merler and PisaniFerry (2012) and Couré (2013).
[6] For a discussion of TARGET 2 balances, see Cecchetti et al. (2012).
[7] That is, the claims of the Bundesbank on the Eurosystem through TARGET 2.

1.3 MARKET DEVELOPMENTS IN SOVEREIGN BOND MARKETS

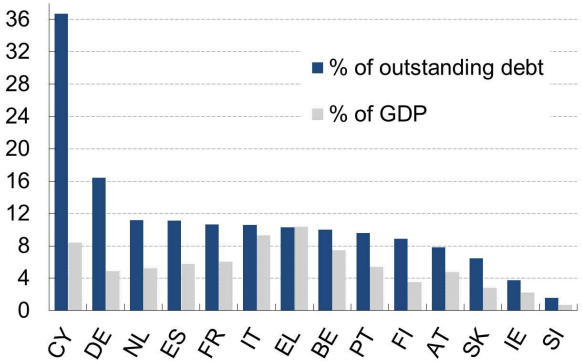
After a short chronological overview of market developments in 2012 (section 1.3.1), this sub-chapter explores factors that had an important impact on sovereign debt markets during the year. Among them are the long-term commitments from and towards those requiring financial assistance (section 1.3.2), the relative position of official and market funding (section 1.3.3), and the capacity of official lending (1.3.4).

The latter has become an important issue as another Member State was provided financial assistance in 2012 on novel terms to specifically address its financial sector weaknesses (Spain). The need to address the revealed sources of fragility, together with several others arising during the crisis -including cross-sector contagion-, determined the Commission to propose establishing a banking union (section 1.4).

1.3.1 Main market events

From the start of the year, it was expected that 2012 would be a year heavy in bond redemptions (chart 1.3.1), with several peak months of relatively high amounts of maturing Euro area government debt. Nevertheless, after the Autumn 2011 culmination in the sovereign debt crisis, tensions in government bond markets abated in the first months of 2012, and the sovereign spreads of most Euro area Member States, including vulnerable ones, declined significantly.

Chart 1.3.1: **Member States' refinancing needs for 2012**



Source: Member States' National Treasuries.

Overall, EU sovereigns managed to generate sufficient funding and some Member States even started the year pre-funding their Treasury needs. For example, Italy overcame the big concentration of its redemptions between February and April. At the same time, Spain took advantage of the relatively benign financing conditions in early 2012 and frontloaded its issuance programme, funding more than 50% of its gross borrowing requirements for 2012 by April. New bond issuances from both countries met strong investors' demand.

The market improvement was largely driven by common factors, as reflected by the high correlation of sovereign spreads of, for instance, FR, AT, IT and ES. The liquidity injection by the ECB in the form of two longer-term refinancing operations (LTROs) in late 2011 and early 2012, benefitting banks, and via the strong banking-sovereign nexus the sovereigns, was the principal trigger for driving the spreads in more vulnerable Member States lower, in particular at the shorter end of the yield-curve. Besides, progress of Member States in implementing structural reforms and consolidating public finance, additional EU initiatives taken to enhance budgetary discipline (see Chapter 2.1 on economic governance), as well as survey-based signs that the economic slowdown in the EU was bottoming out contributed to a return of market confidence in the sovereign sector.

In the second quarter of 2012, negative market sentiment remounted and evolved into a fully-fledged sovereign bond crisis. Market participants' pessimism on the macroeconomic outlook and the perception of a loss of legitimacy among electorates of the reform strategies in the more vulnerable Member States fuelled worries on their ability to reach their fiscal targets for 2012 and, in the longer term, to preserve the sustainability of their public debt. The announced or envisaged downward revisions of targets by some Member States tended to anchor these expectations.

In this regard, at times of particular distress in sovereign primary bond markets, secondary markets activity decreased, with signs of dysfunction and lack of liquidity of vulnerable Member States' sovereign bonds. Liquidity turned to debt securities that were perceived as safe and in consequence yields in a number of sovereign debt markets fell to historical lows. The coincidence of declining sovereign bond yields and slightly widening sovereign CDS spreads in some countries gives a strong indication of portfolio reallocation flows towards safe havens. "Flight-to-quality" episodes spilled to beyond the EA's borders, affecting other sovereigns such as Norway, Sweden and Switzerland (Box 1.3.3).

In spite of the policy progress reached at the euro area Summit on 29 June, particularly the prospect of establishing a banking union and the possibility of direct ESM recapitalisation to break the negative feedback loop between sovereign and banking risk, market conditions remained turbulent over the summer. In this context, the ECB President on 26 July announced determined ECB support to bond markets and in September the ECB announced measures to conduct outright transactions in secondary markets to address unfounded fears on the part of investors about the break-up risk of the euro. The ECB made clear that strict and effective conditionality on a country attached to an appropriate EFSF/ESM programme is imperative to implement Outright Monetary Transactions (OMT). To ensure appropriate incentives for Member States if activated (even if under an EFSF/ESM programme), transactions in the OMT would be focused on the shorter part of the yield curve: in particular on sovereign bonds with a maturity between 1-3 years. No ex ante quantitative limits are set on its size and the ECB has stated publicly that the program can be used to buy *or sell* bonds.

Throughout 2012 Greece remained under intense market scrutiny regarding the development of its adjustment programme. Still, it succeeded in satisfying its financing needs over the summer and until end of the year via T-bill issuances. In December 2012, it was able to reduce its outstanding debt by repurchasing own bonds with a value of almost EUR 32 billion, whilst paying broadly a third of their face value to the bond holders. The debt buy-back operation was followed by the second disbursement under its second economic adjustment programme.

Ireland showed progress in its programme and was able to successfully issue long term government bonds (5 and 8 years maturity) in summer, as well as long-term amortising bonds, providing hope for a full return to the market at the end of the programme. Portugal's short and long-term government bond yields remained high in 2012, but decreased substantially over the year. T-bill auctions were generally successful over the year and presented decreasing yields.

Finally, within the more benign investment climate in the second half of 2012, auctions of sovereign bonds and T-bills in Italy and of T-bills in Spain registered strong demand and decreasing yields. In general, the funding available to sovereigns in markets has been affected by several special factors along the year, which are detailed in the following sections.

Box 1.3.3: **Flight-home and flight-to-quality effects**

Flight home. When banks perceive a significant deterioration of their balance sheet will take place, they tend to rebalance their loan portfolios away from foreign markets in favour of domestic borrowers.

Flight-to-quality. Discrete (upwards) jumps in the demand for low risk assets due to uncertainty about asset payoffs and/or about the macroeconomic outlook.

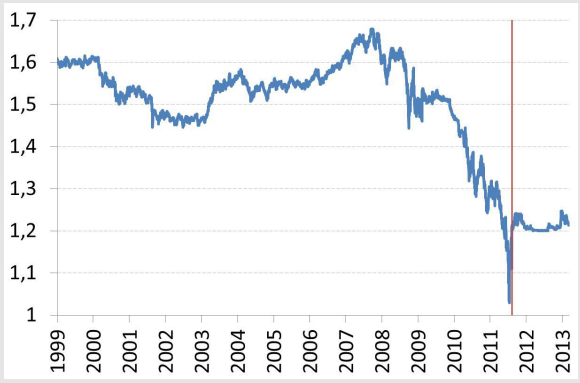
Within the EA. Because of the crisis, differences between Member States' sovereign interest rates have increased sharply. The extent to which these spreads reflect increased individual riskiness of some Member States or are due to disappearing markets or flight-home or flight-to-quality phenomena is a source of debate. In this regard, chart 1.3.2 shows that the German Treasury is indeed funding itself at exceptionally low rates when issuing 10 year benchmark bonds. For shorter maturities of German government securities, investors were even accepting zero or negative yields. Also Belgium, France, the Netherlands, Austria, Finland and the EFSF were able to issue short-term debt securities at interest rates close to or even below zero.

Outside the EA: At times of very high stress in financial markets, investors have exited many asset classes denominated in euros. As substitutes to German treasuries, they have fled to currencies of countries with fiscal and monetary policies perceived as sound, such as Norway, Sweden and Switzerland (given the size of the latter's banking sector, the impact can also be due to flight home effects). Chart 1.3.3 shows the 30% appreciation that took place by the Swiss franc between the beginning of the crisis and Summer 2011. At this point, the demand for Swiss francs was such that the Swiss National Bank (SNB) felt compelled to act to counter the negative aspects related to the appreciation of the Swiss franc versus the euro. Thus, on 6 September 2011, it announced that it would (i) no longer tolerate a EUR/CHF exchange rate below the minimum rate of 1.20; and (ii) enforce this minimum rate with the utmost determination, preparing to buy foreign currency in unlimited quantities.

Chart 1.3.2: **German 10yr bond rate.**

Source: Spanish Ministry of Economics and Competitiveness.

Chart 1.3.3: **CHF/EUR Spot rates.**



Source: Bloomberg

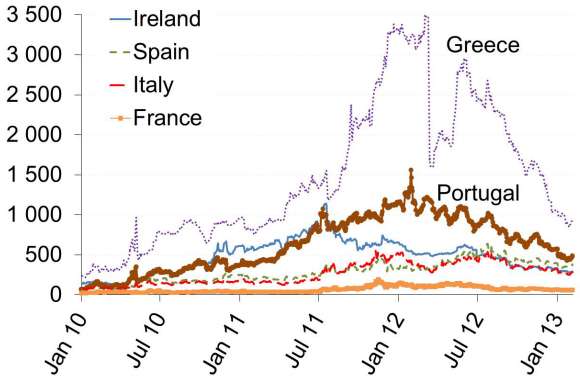
1.3.2 Long term commitments between Member States

Throughout 2012 financial markets sought reassurance of the long-term commitments between EA Member States with respect to one another. In particular, signs of tensions on sovereign bond emerged around the times of programme reviews. Investors became concerned whether commitments would be renewed, particularly if funding was to be provided for very long periods.

A key instance was the (new) funding needs by the Greek sovereign, in a context where the initial estimates of financial assistance from May 2010 had to be reassessed. That is, doubts whether Greece's funding needs –not financeable in markets- would be provided by the rest of the EA have been a key driver of market sentiment in 2012. The larger implication for market sentiment being none other than if Greece was not provided funds would other Member States (with larger funding needs) be, in case they needed assistance? In this regard, maintaining the long-term commitment required to continue to provide financial support to Greece in 2012 represented a significant challenge since the second quarter of the year.

The elections taking place on 6 May did little to appease sceptical market beliefs regarding Greece's capacity to honour its commitments. Moreover, the likelihood that political forces opposing Euro area membership could win the 17 June elections had an impact on other sovereigns, compromising their ability to continue funding themselves in markets without external assistance (chart 1.3.4). Fears that a large sovereign could lose market access brought stress in financial markets over the summer 2012 to levels not reached since 2008, with the fall of Lehman Brothers.

Chart 1.3.4: **Sovereign bond spreads**



Source: Bloomberg

1.3.3 Debt seniority

A second important topic of the year 2012 was the interaction between private and official sources of funding. The debt restructuring of Greek public debt by means of voluntary private sector involvement (PSI) in spring 2012 provided substantial relief to the Greek debt burden. Approximately EUR 197 billion or 95.7% of the bonds eligible for the exchange offer have been exchanged. Following this PSI, however, markets became concerned that the provision of funding from official lenders means that they benefit from a de-facto preferred creditor status.

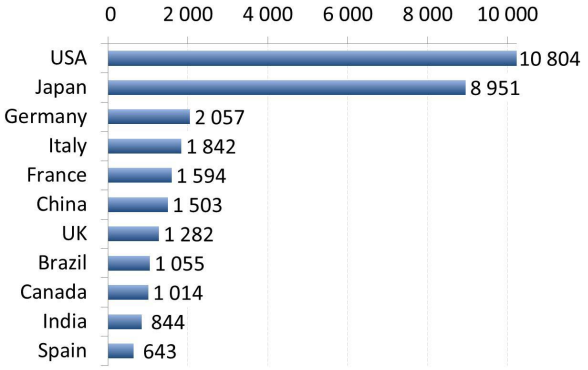
In this regard, Spain's demand for financial assistance for a specific programme of banking sector reform on 9 June (see chapter 2, section 2.2.2) raised questions among private investors. In particular, it raised concerns regarding whether the provision of official funds was positive for current private debt holders, as Spain would obtain funds at low interest rates, or whether it was negative, as their claims would become *junior* to new funds. Thus, uncertainty about the seniority of official lending over private lending was brought forward as an explanation for why financial markets did not react positively to the announcement of a banking programme for Spain.

The 29 June Euro area Summit statement affirmed that financial assistance to Spain would first be provided by the EFSF on *pari passu* conditions with existing unsecured debt, until the ESM became available, and that it would later be transferred to the ESM, without gaining seniority status. The statement had a positive impact on the sentiment of financial market participants, also because these extrapolated its impact to other sovereigns with possible funding needs.

1.3.4 Large sovereigns

As long as countries experiencing difficulties in financial markets are small, the main difficulty raised for other Member States to fund them is to commit one another to "fund in exchange for reform". In this regard, the Union has now established specific instruments to provide financial assistance to Member States in difficulty (see chapter 2 in this and last year's EFSIR). However, the opportunities available to use official lending as support for small Member States are not open to the same extent to large ones.

Chart 1.3.5: **General government gross debt in 2012** (€bn).



Source: International Monetary Fund, Bloomberg.

To remove a large Euro Area Member State (see chart 1.3.5) for a significant period of time from market funding would mean a very substantial quantitative commitment from other Member States and could quickly deplete the funds made available to the EFSF and ESM to provide official funding. Colloquially, the solution to this problem has been known as the need to establish a "firewall" to isolate large vulnerable Member States. For instance, to address the specific situation of a large country, probably requires that it continue to have market access. Thus, external assistance to a large Member State has, so far and as mentioned before, been limited to provide funds for a bank-specific programme of financial sector reform[8].

Within this environment of further rising bond spreads in vulnerable Member States, which were considered as reflecting a premium for the risk of convertibility, EU Member States, institutions and policymakers established several measures to address the economic and financial situation in markets (see section 1.4).

1.3.5 Contagion from banks to sovereigns

The spill-over of banking weakness to the public sector across a large number of the vulnerable Member States evidenced that problems in the banking sector can quickly overburden the sovereign sector to cope with them. The need to avert banking system failure and economic disruption after the failure of Lehman Brothers in September 2008 has burdened taxpayers and significantly deteriorated public finances. In particular, the total amount of public funds approved to support the financial sector has risen to unprecedented levels: for example, between October 2008 and October 2012, they reached EUR 5.1 trillion (equivalent to 40% of EU GDP). In 2012 it also became evident, and will be detailed below in the banking section of this chapter, that the

[8] For more information on the financial stability support package for Spain, see http://ec.europa.eu/economy_finance/assistance_eu_ms/spain/index_en.htm.

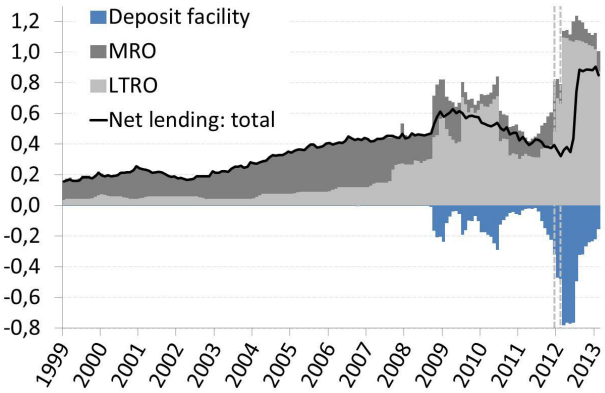
feed-back loop between sovereign and banks became reinforced through the withdrawal of foreign investors and rising home bias of banks[9].

Thus, the crisis has shown the necessity to reinforce the tools available to public authorities to deal with financial sector problems, but also the need to break the sovereign-bank nexus raised by the size of the banking sector in the EU (see section 1.4). To meet this challenge, in September 2012 the European Commission reasserted the importance of establishing a banking union[10].

1.4 TOWARDS A BANKING UNION

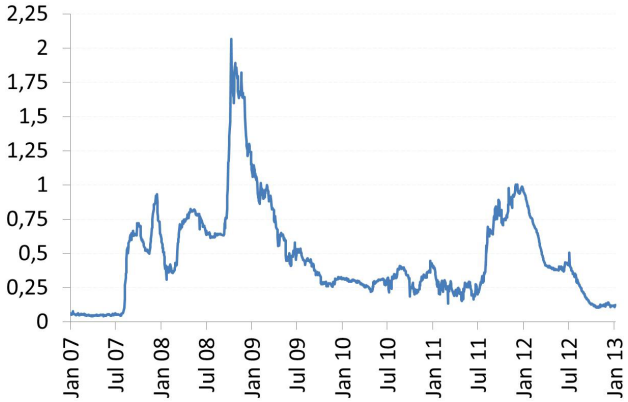
Boosted by the single currency and the Single Market, the EU banking sector grew and become much more integrated in the years preceding the crisis: banks' cross-border activities blossomed, to the point of outgrowing their national markets (box 1.4.1). Moreover, the quality of the financial supervision achieved in the Euro area prior to the crisis was in need of being strengthened, among others, to reinforce the ability of sovereigns to isolate and contain risks emanating from the banking sector.

Chart 1.4.1: **Net lending by the Eurosystem.**



Source: European Central Bank

Chart 1.4.2: **Three month difference between LIBOR & OIS.**



Source: Bloomberg

In this regard, the funding challenge faced by EU banks in 2012 has been instructive. At the end of 2011, it was widely known that banks had to roll-over a large amount of expiring debt securities in the coming year and elevated indicators of funding costs suggested that many banks would need to close their funding gap under tight conditions. Accordingly, the ECB's two 3-year longer-term repurchase operations (LTROs) met a very high demand with banks asking for a total of EUR 1.1 trillion (gross). The net liquidity added to the euro-area banking system was some EUR 500 billion, as banks rolled over some of their previous shorter-term Eurosystem loans into the new 3-year LTROs. The 3-year LTROs had an impressive impact on short-term government bond yields and also fed through to longer maturities and other asset classes. Some covered and unsecured bank bond markets, which had been more or less closed in the third and fourth quarters of 2011, reopened.

The recovery experienced in interbank markets at the beginning of 2012 remained short lived. Neither the provision of ample liquidity through the ECB's operations (chart 1.4.1) nor the EBA

[9] It was also agreed that the ESM will be empowered to finance direct recapitalisations of financial institutions through the ESM, once an effective single supervisory mechanism for euro area banks is established.
[10] Available at http://europa.eu/rapid/press-release_MEMO-12-656_en.htm?locale=en.

efforts to improve transparency of banks' capital position or to foster the build-up of additional capital buffers yielded a durable return to normality on funding markets. It was also expected that the Greek PSI operation would remove an important piece of uncertainty about banks' exposure to sovereign debt from the market. However, money market spreads remained at an elevated level (chart 1.4.2) and issuance of debt securities by banks weakened again. Banks from vulnerable Member States remained heavily reliant on ECB funding and signs were emerging of declining deposit bases in some of them.

In this context, in the June 2012 European Council, the EA Heads of State or Government announced they would proceed to establish a single supervisory mechanism (SSM) for banks[11]. In this regard, the European Commission reasserted the importance of establishing a Banking Union to support economic and monetary integration, restore credibility to the financial sector, break the link between Member States and their banks, and preserve tax payers' money (next subsection).

Together, such initiatives set in motion forces to counter the marked deterioration in financial market conditions experienced in the first half of the year. In particular, they set the basis for the ECB to build a "bridge" while the rest of the institutions continued working to establish the foundations for a more stable European economy[12].

OMT and progress with banking union left a clear trace in bank funding markets in the second half of 2012 and early 2013. Most indicators of risk sentiment on EU financial markets improved, as the spiral of reinforcing upward trends in risk premia on sovereigns, banks and business cycle uncertainty encountered during the sovereign debt crisis was reversed. Mirroring developments on sovereign bond markets, funding costs of banks on debt security markets fell. Also banks' CDS prices declined. Numerous EU banks returned to tapping debt market financing and, in autumn 2012, also banks from vulnerable Member States were able to issue substantial amounts of debt securities. At the same time, the retail deposit outflow from banks in several vulnerable Member States stabilised amid balance-of-payment data indicating a reversal towards private capital net inflows. Italian and Spanish Target 2 balances accordingly improved somewhat, which indicates a turnaround in their financing patterns towards wholesale funding, particularly via repo markets, and away from ECB funding.

This subchapter starts by explaining the concept of banking union and its motivation as it has been a key determinant of banking developments in 2012 and expected to shape the banking sector in the future. In addition to the focus on banking union (section 1.4.1), banks remained watchful to some special issues that evolved during 2012. These are discussed in the following sections, namely: market fragmentation, particularly on the funding side (1.4.2); the need to deleverage (1.4.3), eventually leading to reduced balance sheets and the tapping secured funds (1.4.4), in a context where asset encumbrance is rising. As a consequence, the capacity for banks to provide lending to the real economy has been muted (1.4.5).

[11] EA Summit Statement, available at http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/131359.pdf.

[12] *Building a bridge to a stable European economy*, Speech by the President of the ECB at the annual event "Day of the German Industries" organised by the Federation of German Industries, Berlin, 25 September 2012. Available at http://www.ecb.int/press/key/date/2012/html/sp120925.en.html.

Box 1.4.1: **Size of the EU banking sector**

There are approximately 8000 EU credit institutions. But a more important factor to determine the close relationship between developments in the financial sector and the fiscal condition of sovereigns in Europe is the significant size European banks have achieved in terms of their home country GDP.

According to the final report by the High-Level Expert Group chaired by E. Liikanen, the total assets of Deutsche Bank represented some 85% of national GDP at the end of 2011, Santander accounted for 118% of GDP, ING for 161% of GDP, whereas Nordea for 197% of GDP. The size of these banks is naturally much smaller, if measured against the EU GDP. Deutsche Bank would thus appear the biggest with 17.4% of EU GDP in total assets.

At the same time, the total assets of the entire EU banking system represented roughly 42tn euros, approximately 350% of EU GDP. This is a risk factor that cannot be ignored, although it also reflects the greater dependence of the European economy on bank financing than elsewhere. For example, the US banking sector accounted for only 78% of US GDP, whereas that of Japan for 174% of GDP in 2011[13].

Another specific feature of the European banking landscape is the relative size of its top ten banks. At the end of 2011, they held assets worth EUR 15 trillion. Once again, there are differences in accounting standards (e.g. with respect to the netting of derivatives) that make EU banks appear relatively larger compared to their US counterparts than they actually are, but the magnitude is nevertheless telling. The top ten EU banks held assets worth 122% of EU GDP, as opposed to 44% in the case of the US.

Thus, absent corrective measures, EU governments potentially have to backstop very large financial institutions and markets take account of this fact. Banking sector restructuring since the beginning of the crisis has been slow, with few bank liquidations. The lack of any pan-EU resolution framework has also been a deterring factor. The Commission's 2012 State Aid Scoreboard revealed that the volume of national support to the financial sector used by banks between October 2008 and 31 December 2011 amounted to over EUR 1.6 trillion, which is equivalent to 13 % of EU GDP. Liquidity support accounted for EUR 1,274 billion (9.3 % of EU GDP) in the form of state guarantees on wholesale bank funding and other (short-term) liquidity support measures. Support to bank solvency amounted to EUR 442 billion (3.5 % of EU GDP) in recapitalisation measures and sorting out the impaired assets.

Three EU Member States accounted for nearly 60% of the total aid used: the United Kingdom (19%), Ireland (16%) and Germany (16%). Moreover, aid was concentrated on a few financial institutions: top three beneficiaries in the former two countries received more than 80% of all aid, whereas those in Germany received more than half.

[13] One should also note, however, the special role played by the so-called Government-Sponsored Entities in the US (e.g. Freddie Mac), which are generally not included as part of its banking sector assets.

1.4.1 What banking union?

The events unfolding in 2012 witnessed the need to restore confidence in the financial sector through common and single supervision.

In the context of the challenges represented by financial fragmentation and its translation into uneven and asymmetric funding pressures, deleveraging needs, and signs of continued sovereign bank inter-linkages across the Euro area, further detailed below, the European Commission made a proposal to establish a fully-fledged Banking Union in a communication published in September 2012 accompanying the proposal for a Single Supervisory Mechanism (SSM). Such a Banking Union relies on four pillars: a single rule book (CRD4/CRR), single supervision, a harmonised system of deposit guarantee schemes and, ultimately, a Single Resolution Mechanism (SRM) –see chapter 2. In this regard, the Economic and Financial Affairs Council of the EU in December 2012 agreed, building on the Commission's proposal, on the establishment of an SSM composed of the ECB and national competent authorities, with the ECB being responsible for its overall functioning.

Under the proposal, the ECB will have oversight of EA banks, although in a differentiated way and in close cooperation with national supervisory authorities. Non-EA Member States wishing to participate in the SSM will be able to do so by entering into close cooperation arrangements. National supervisors will remain in charge of tasks not conferred on the ECB, for instance in relation to consumer protection, money laundering, payment services, and branches of third country banks. The EBA will retain its competence for further developing the single rulebook and ensuring convergence and consistency in supervisory practice.

In principle, the ECB would assume its SSM supervisory tasks on 1 March 2014 or 12 months after the entry into force of the legislation, whichever is later, subject to operational arrangements. Importantly, the ECB has a very clear goal of price stability, expressed in a transparent and measurable way and its attachment to the primary objective of price stability is unquestionable. Thus, to achieve the SSM, its monetary tasks will need to be strictly separated from its supervisory role, to eliminate potential conflicts of interest between the objectives of monetary policy and prudential supervision. To this end, a supervisory board responsible for the preparation of supervisory tasks would be set up within the ECB.

Building a common pillar to integrate banking supervision in the Euro area is important to make sure it abides by the highest standards; establish trust between Member States in case financial backstops need to be used; and advance towards a more integrated approach with regard to deposit guarantee schemes and bank recovery and resolution.

In general, moving towards a banking union should help to:

- Undo financial fragmentation. Being more conscious of cross-country spill-overs than national supervisors, the SSM will correct the trend of financial institutions to increasingly focus on their national home markets in times of crisis. Such response could support an even provision of services by financial institutions across Member States. This would ensure, in particular, an efficient deployment and allocation of capital across the Euro area and the EU as a whole. Relatedly, since the increased home bias also impaired the

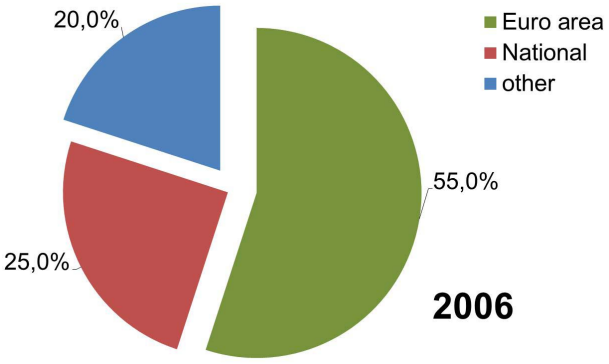
transmission of monetary policy impulses by the ECB into actual lending to the real economy, the SSM would contribute to make monetary policy more effective.

- Break the link between Member States and their banks. With integrated supervision, investors and Member States can have confidence in the quality and impartiality of banking supervision, addressing the notion of implicit mutual support between banks and sovereigns.
- Restore credibility of the financial sector. A Single Supervisory Mechanism for banks will enable a supervision of the highest quality unfettered by other non-prudential considerations, benchmarking and fostering good practices among European banks.
- Preserve tax payers' money. Although the amount of approved funds for financial institutions between October 2008 and October 2011 has been significantly less than the amount of funds at their disposal mentioned previously (EUR 5.1 trillion), reaching EUR 1.6 trillion, the magnitude of public funding has nonetheless been unprecedented. EU rules for recovery and resolution (see chapter 2, section 2.4) envisage that problematic institutions will be isolated and resolved minimizing taxpayers' money[14].

The following sections present the drivers that coalesced in 2012 that determined the Commission's proposal. Three issues have characterized the challenges faced by banks in 2012 to address their funding weaknesses, which remain present to this day (i) fragmentation, (ii) deleveraging and (iii) the shift towards secured forms of funding.

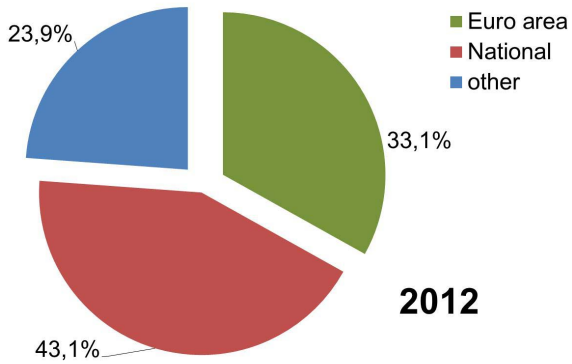
1.4.2 Funding fragmentation

Chart 1.4.3: **Unsecured average daily turnover. Geographical counterparty breakdown** (% of total)



Source: ECB.

Chart 1.4.4: **Unsecured average daily turnover. Geographical counterparty breakdown** (% of total)



Source: ECB

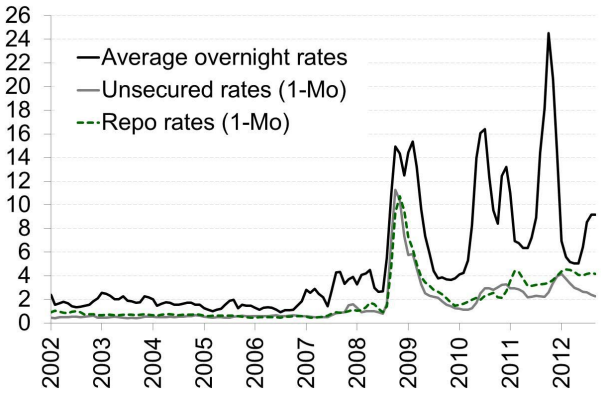
The difficulties faced by investors to identify precisely which financial institutions were most vulnerable to toxic assets, whether by sector (real estate bubbles) or geographic presence (EU sovereign debt crisis), have become a cause and a consequence of the crisis. Given that banks mainly lend to each other in unsecured markets, it is not surprising that they became much more hesitant to do so[15].

[14] See http://ec.europa.eu/internal_market/bank/crisis_management/index_en.htm.

[15] In particular, those excessively reliant in unsecured markets were the first to run out of cash as the loss in market confidence forfeited market access.

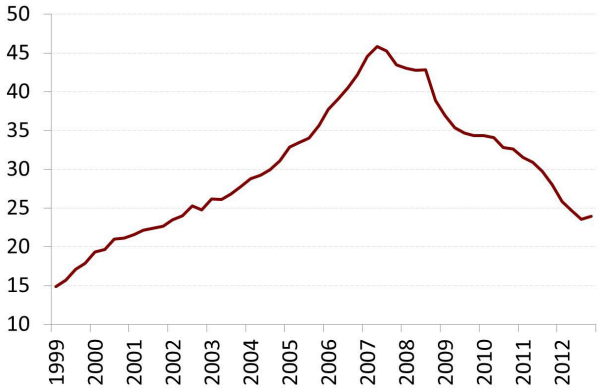
In this regard, in the first half of 2012, financial conditions within the Euro area became more fragmented, as retrenching cross-border interbank capital flows, rising home bias in sovereign-bond holdings, as well as growing divergence of funding costs for sovereigns and banks make evident.

Chart 1.4.5:**Cross-country standard deviation of Euro area interbank rates** (basis points)



Source: ECB.

Chart 1.4.6: **Cross-border debt securities holdings of Euro area MFIs issued by other MFIs** (in percentage)



Source: ECB

In particular, and as a second-round effect, the liquidity position of financial institutions has not only been affected by the increased fragmentation in bank funding markets across the EA; it has reinforced it. Healthy banks located in stigmatised areas have become squeezed out of funding, particularly in the unsecured segment (charts 1.4.3 and 1.4.4). Market fragmentation across Member States determined that healthy banks in some countries were only able to tap a much smaller pool of funds than in others, putting pressure on prices (chart 1.4.5). Fragmentation has led to divergent interest rates and restricted lending supply across Euro area Member States[16]. Evidence pointing to declining (or reversed) financial market integration was presented by the President of the ECB in August, upon discussing the OMT program[17]:

- Since 2006, cross-border use of collateral had fallen from 50% to 20%.
- Since 2008, non-domestic interbank deposits were at minima.
- Since mid-2011, the share of cross-border money market loans had fallen from 60% to 40%.
- Starting late 2011, a big divergence was observed in general collateral repo rates between Euro area periphery and core sovereigns.

Consequently, fragmentation and, eventually, redenomination risk in the Euro area has increased the pressure on banks to increase capital ratios, but also to retrench activity to national markets and to fund their activities within national boundaries. Moreover, some national regulators have made matters worse by ring-fencing capital and supporting liquidity at their national level, as well as by encouraging banks to invest in domestic debt (chart 1.4.6), in some cases exacerbating the

[16] Decomposing the total increase in divergence is not an easy task, as differences in risks have also widened. Battistini, Pagano and Simonelli (2013) decompose this divergence in interest rates into different components.
[17] http://www.ecb.int/press/pressconf/2012/html/is120802.en.html.

vicious circle between sovereigns and their banking sectors[18]. Naturally, these instances run against the very idea of a single market for financial services in Europe.

Box 1.4.2: **The Vienna Initiative**

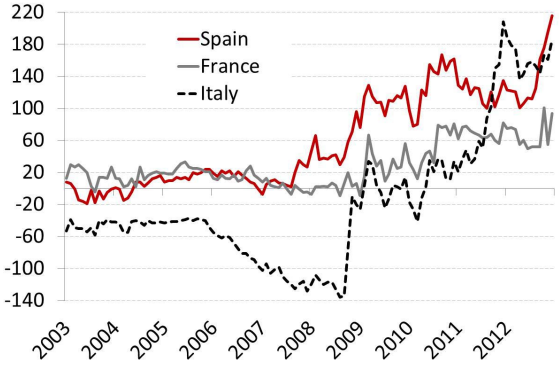
Although the Vienna Initiative was established in 2009, market fragmentation has been an issue of lesser concern outside the EA. The Initiative brought together the major International Financial Institutions, as well as home and host country regulatory and fiscal authorities of the largest banking groups operating in Central and Eastern Europe (CEE), and the groups themselves. The aim was to avoid, precisely, episodes such as those that have taken place in the EA, and which are described in previous sections, to take place in CEE.

The reason why authorities believed they could be avoided was due to the concentration of cross border capital flows in CEE among a few foreign banks. If banks had retrenched behind national borders and replete their EA parent holding company at the expense of their CEE domestic banks, it could present a significant risk for financial stability. Moreover, addressing this risk one bank at a time was not possible: if an individual bank left, it made the temptation and incentive to flee greater for the remaining ones. Thus, coordination was of the essence (as in the EA), but coordination was possible.

Since 2009, the Initiative has evolved. In January 2012 Vienna 2.0 was launched to avoid disorderly deleveraging by banks. Deleveraging is a natural process to address imbalances, but it should be managed properly: decisions driven by geographic, not economic considerations are prejudicial to all.

Thus, geographic location has become an important variable to determine a bank's health, whether from the asset side, given local asset price bubbles linked to real estate; or from the liability side (chart 1.4.7), given funding market fragmentation according to national boundaries, whether it results from rational decisions made by banks, market pressures that eventually stigmatize all institutions from one location irrespective of their underlying health (see box 1.4.2), or regulatory initiatives.

Chart 1.4.7: **Deposit interest rates on new business from households, agreed maturity of up to 1 year (spread with respect to German rates, basis points)**



Source: ECB.

1.4.3 Deleveraging

Though "disorderly" deleveraging could represent a serious threat to macroeconomic and financial stability, deleveraging is necessary, however, for banks to correct the imbalances built prior to the crisis and bring the economy back to a strong and sustainable growth path. During 2012, banks have continued to reinforce and strengthen their balance sheets and business models

[18] The EBA Risk Assessment Questionnaire documents that many of the surveyed banks attribute a role to supervisors to cross-order retrenchment of activity and lending, see EBA (2013).

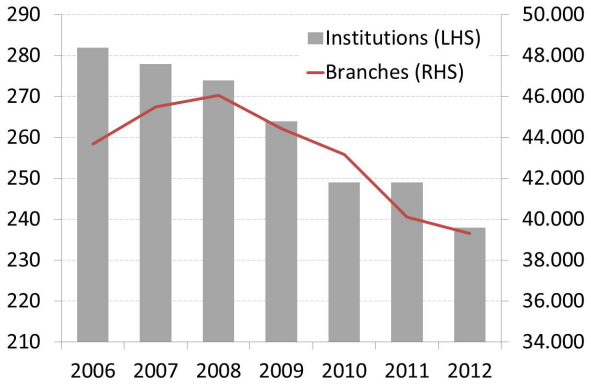
because of the damage inflicted by the crisis. Market pressures to reinforce balance sheets, regulatory measures to ensure banks' resilience and restructuring obligations in compensation for state aid received during the crisis are behind such behaviour.

The means by which financial institutions deleverage can have quite different implications for the system, and the economy as a whole, as banks can deleverage by:

- Increasing their capital base (issuing shares or reducing dividends, executive compensation and share buybacks in favour of retained earnings).
- Reducing assets through organic (loan portfolio, including doubtful assets) or non-organic means (selling non-core lines of business or assets).

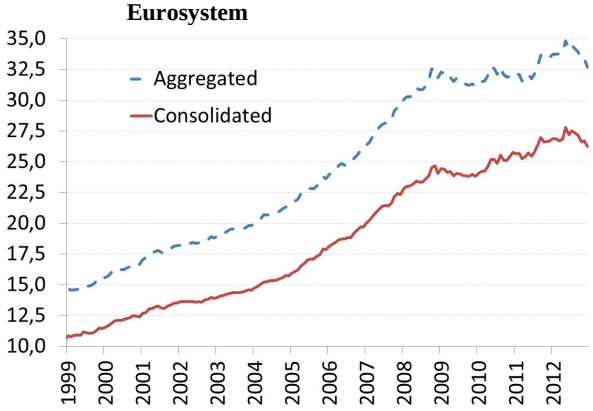
Faced by the funding pressures presented above, EU banks could have opted to shrink their balance sheet to minimize their funding costs in absolute terms. However, aside from some particular Member States, exemplified by the reduction of excess capacity in their banking sectors (see chart 1.4.8); so far banks have reduced their leverage ratios by mostly increasing their capital base, not deleveraging (chart 1.4.9). The deleveraging choice has determined that banks currently have very different capital ratios (chart 1.4.10).

Chart 1.4.8: **Number of domestic credit institutions and branches of credit institutions. Spain**



Source: Banco de España

Chart 1.4.9: **Balance sheet of monetary and financial institutions in the Euro area, excluding the Eurosystem**



Source: ECB.

When looking at the period 2008 to 2012, banks' equity has risen close to €400bn., while the total banking system's balance sheet remained practically stable. This allowed that loans to non-financial firms did not decline but in fact slightly increased, albeit at a reduced rate, (see chart 1.4.13)[19].

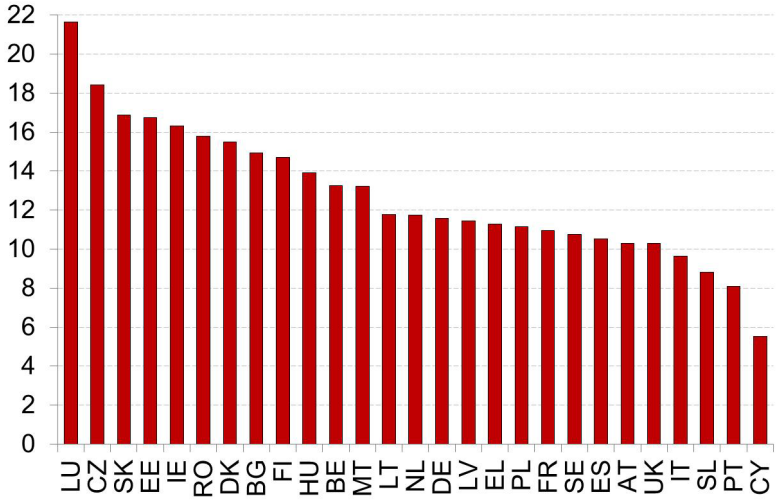
This first step was long overdue and one of the cornerstones of the regulatory reforms endorsed by the G20 Leaders. At a later stage, banks will eventually have to reduce their balance sheets, especially by addressing non-performing assets and de-risking in areas such as capital market activities and real estate lending, which grew too much in the run-up to the crisis. Finally, the last step will entail refocusing business models, especially towards more stable funding structures[20].

[19] Including the 2011EBA recapitalization exercise, whereby banks were required to reach a Core Tier 1 ratio of 9 per cent, after a prudent valuation of their sovereign exposure. This was a temporary and exceptional buffer established to address the systemic risk arising from the EU sovereign debt crisis (see section 1.4.1).

[20] In this regard, see Van Rixtel and Gasperini (2013).

Current regulatory reforms are meant to address these fragilities that prevent banks from performing their fundamental functions (see chapter 3). The objective is none other than to significantly strengthen capital and selectively downsize asset levels, to continue to provide an orderly deleveraging process.

Chart 1.4.10: **Tier 1 capital ratio in different EU countries, average in 2011.**



Source: ECB.
Note: data for Greece refer to 2010.

1.4.4 Asset encumbrance

Turnover on unsecured money markets, which was the traditional main vehicle of short-term wholesale interbank lending, has fallen by 60% between 2007 and 2012. Upon very little liquidity in this and some other segments of funding markets, and given the difficulties faced by banks to shrink their balance sheets, secured lending has been on the rise. That is, debt has been tapped as was done previously, but providing greater guarantees to creditors by setting aside assets as payment in case of default. These assets set aside are said to be “encumbered”. Asset encumbrance is a practice mainly affecting funding obtained by issuing covered bonds or collateralised lending or when selling derivatives (for hedging or regulatory purposes).

The magnitude of assets currently encumbered in banks’ balance sheets is significant. Chart 1.4.11 represents a banks' stylized balance sheet[21]. The chart distinguishes a bank’s assets and liabilities, and exemplifies the level of asset encumbrance that secured funding determines on four major Swedish banks. In particular, as of December 2011, the average degree of asset encumbrance for this group of banks was about 33%. The majority of encumbrances in the balance sheet, 23.3%, were due to assets being pledged as collateral for covered bonds. Encumbrances for repo collateral represented 3.5% of the total, and derivatives and other funding 6%.

Pressure for further asset encumbrance will remain, as demand for secured funding is growing:

(i) Borrowing from central banks has increased (chart 1.4.2).

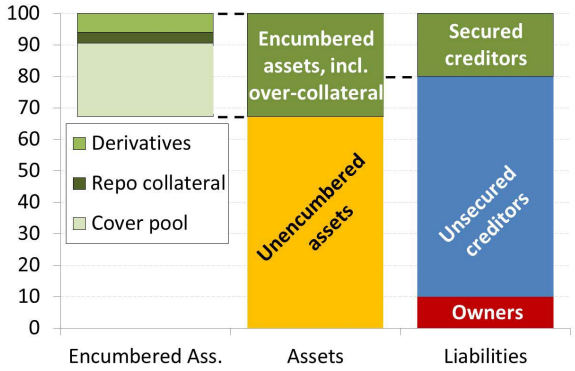
(ii) Unsecured issuance is being substituted by covered bond issuance (see chart 1.4.12).

[21] Taken from the Riksbank’s 2012 Financial Stability Report.

(iii) Repo markets (i.e. repo transactions where payment means are exchanged for collateral) have become an important funding sources that filled the gap of declining volumes on unsecured money markets.

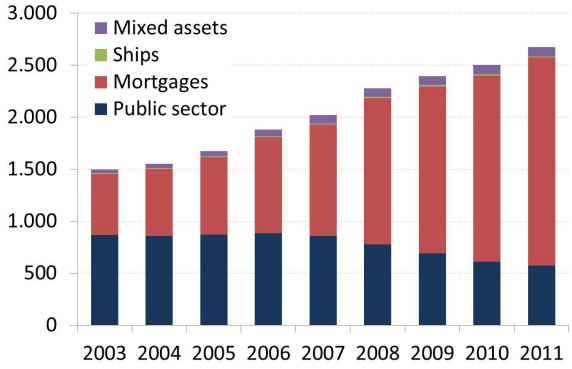
(iv) OTC derivative markets' needs for collateral also keep on growing: the International Swaps and Derivatives Association (ISDA) estimated in 2012 that about 70% of the credit exposure to global OTC derivatives is collateralised, up from 67% in 2007. And this drive to further collateralise derivatives activities is bound to increase, among others reasons, because of regulatory demands (chapter 4).

Chart 1.4.11: **Asset encumbrance in a panel of banks**



Source: Riksbank. Financial Stability Report 2012:2

Chart 1.4.12: **Total amounts of CB outstanding (€bn)**



Source: European Covered Bond Council. 2012 Fact Book

Increased strains to provide secured funding and demand collateral for derivatives' activities is rational, understandable and required (among others, due to regulatory demands), particularly given the counterparty risks present in unsecured markets. However, it points to the need of a sufficiently large pool of high-quality assets to support it. And whilst the pool of assets that can be used for collateralized lending is endogenous, as eligibility criteria are determined by creditors, it is nevertheless true that the criteria are not open to absolute discretion. In this regard, the supply of safe assets as known prior to the crisis cannot be taken for granted. In particular, the International Monetary Fund has voiced concerns that the supply of safe assets could contract significantly since debt sustainability problems would question the ratings of several countries' sovereign bonds, which form a crucial building block in the universe of "safe assets"[22].

Covered bond frameworks such as those present in Europe can help to contribute and cover part of the shortfall of safe assets (see box 1.4.3). Whilst higher recourse to secured funding during episodes of liquidity stress is understandable and may help avoid their transformation into credit squeezes, it can also make the return to unsecured funding more difficult, leaving banks reliant on liquidity support and central bank funds for longer than warranted.

[22] See IMF (2012b).

Box 1.4.3: **On covered bonds**

Definition. Covered bonds (CBs) are debt obligations that give their holders recourse to the issuing entity (or an affiliated entity of the issuer). Upon default, covered bondholders also have recourse to a pool of collateral (known as the 'cover pool') separate from the issuer's other assets. This pool consists of high quality assets, usually made up of mortgages and public debt, although other assets can be part of it. The issuer is required to maintain (and replace non-performing) assets in the cover pool, at a value exceeding the par value of the bonds (what is known as 'over-collateralisation'). The pool generates a distinction between 'encumbered' from 'unencumbered' assets.

Advantages. The recourse to the issuer, the existence of the dynamic cover pool and over-collateralisation determine that CBs are generally considered relatively low-risk yield-bearing financial assets. However, it is not necessarily the case that their low risk is established at the expense of the issuing entity, i.e. by increasing its risk of failure. They may even reduce funding pressures, if financial institutions are unable to raise unsecured debt, thereby lowering their probability of failure.

From a policy perspective, CBs have advantages justifying a favourable regulatory treatment, as they provide incentives for prudent loan origination given that they remain fully accounted for in issuers' balance sheets, unlike 'originate-to-distribute' securitisations[23].

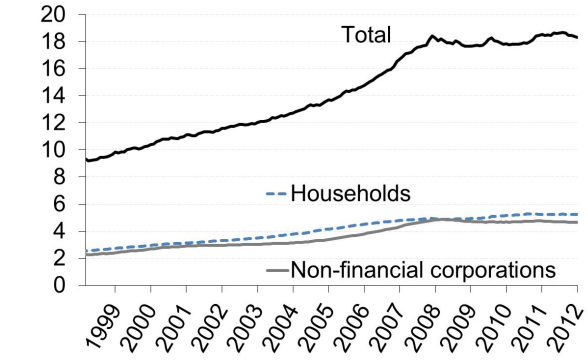
European financial market participants are fond of CBs, as chart 1.4.12 shows. If anything, the crisis has made them even more popular assets to obtain funding, given their general consideration as a relatively low-risk yield-bearing financial asset.

Disadvantages. The growing use of asset-backed securities and the related encumbrance of assets for the benefit of selected creditors may entail risks. Encumbered assets are prejudicial to the interests of other creditors both directly (because they stop being available -structural subordination- and the remaining assets are of poorer quality –have lower recovery rates- when implementing an ordinary wind-up of a financial institution) or indirectly (via pressure on the institution's credit ratings and funding costs). Moreover, due to their 'dual recourse' nature (and in contrast to securitisations), other investors have to bear in mind that CB investors have also recourse to the issuer's insolvency estate when their claims are not fully met by the proceeds of the cover pool (ranking equally with other creditors in this case). Finally, CBs are not always as homogeneous and universally a low risk asset class as they seem. Among other reasons, because national rules differ regarding CB issuance, and their quality tends to change over time (e.g. collateral type and quality –evolution of real estate markets in particular, varying credit enhancement levels, degrees of asset-liability mismatch, etc.).

[23] See IMF (2009).

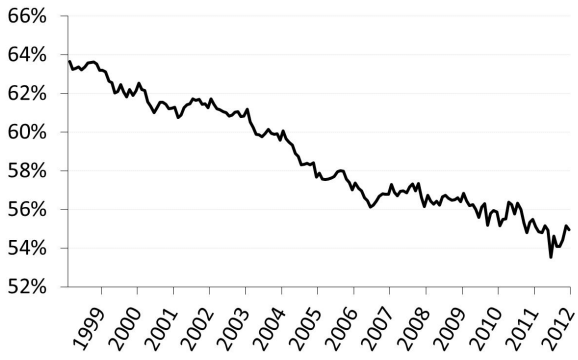
1.4.5 Bank lending

Chart 1.4.13: **MFI loans in the Euro area** (€tn)



Source: ECB

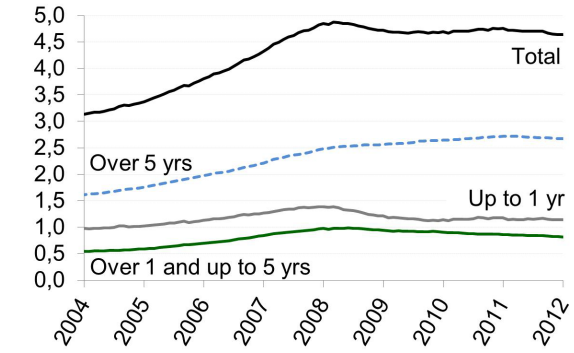
Chart 1.4.14: **MFI loans in the Euro area** (% of total assets)



Source: ECB

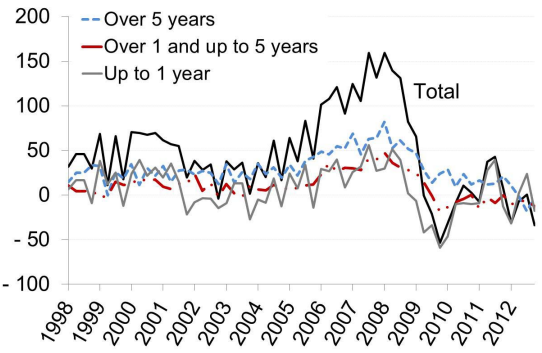
As long as vicious circles exist between banks and sovereigns, the support the financial system can provide to the rest of the real economy will remain under question, among other reasons because of crowding-out considerations. This section reviews developments in bank lending.

Chart 1.4.15: **MFI loans to NFCs in the Euro area** (€bn)



Source: ECB

Chart 1.4.16: **MFI loans. Euro area. Quarterly flow** (€bn)



Source: ECB

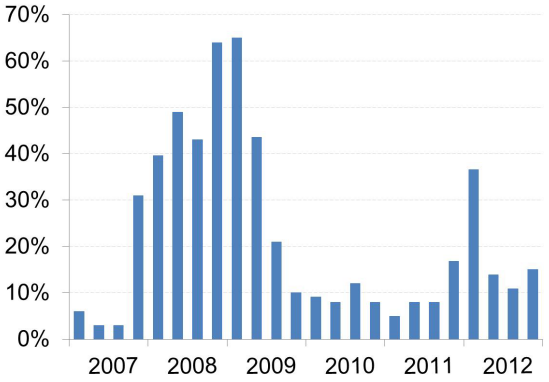
The total stock of loans granted by Euro area MFIs has stagnated since the beginning of the crisis at a level of around €18tn (chart 1.4.13). Loans to non-financial corporations were particularly affected since the beginning of the crisis. Lending volumes for enterprises continued to display wide heterogeneity across Euro area with France and Germany maintaining their lending growth rates slightly above zero while Italy and particularly Spain recording significant declines in lending. Slight variations observed during the year 2012 reflect the loan instability in the context of economic crisis.

Supply and demand for bank credit

On the demand side, the slowdown in economic activity lowered profitability expectations and led to the deterioration of the quality of loan applications. According to the ECB Bank Lending Survey, the demand for loans from non-financial companies fell significantly during the year 2012. This decline seems to be mainly due to a sharp drop in financing needs for fixed investment. As for households, the declining demand for loans is also one of the causes behind the credit decrease. However, the survey reveals a deceleration of the decline of the household demand for loans at the end of the year 2012.

On the supply side, banks have had to deal with their need to deleverage and to adjust to new regulation concerning capital requirements. Nevertheless, the ECB survey shows a slight improvement in the conditions under which loans were given to enterprises and households in 2012. Indeed, as chart 1.4.17 shows, after a rise in 2011, the share of banks that tightened their credit standards for loans to non-financial companies fell significantly at the beginning of the year (from 35% to 9% in the first quarter). It then stabilized at a 13% level.

Chart 1.4.17: **Credit standards in loans to non-financial corporates (% of banks tightening credit standards)**



Source: ECB

This improvement may be explained by the fact that companies have benefited from the easing of banks' costs of funds constraints. Currently, the factors behind the tightening of credit are mainly related to the general economic outlook and industry specific risks. To a lesser extent, they are also due to costs related to bank's capital position and access to market financing also contributed to the current situation. Yet, the Euro area averages tend to mask considerable heterogeneity across Member States.

The tightening of standard credit for households, whether for house purchase or consumer credit, has followed a similar trend to the one of corporations.

Small and medium sized enterprises

For small and medium sized enterprises (SMEs), bank financing remains the most important source of external financing. Indeed, bank loans accounted for 35% of total SMEs financing between April and September 2012. As SMEs comprise the overwhelming majority of European enterprises and generate more labour per unit of output than big companies, a restriction of credit for SMEs could threaten a potential economic recovery.

The ECB lending survey points out to a cautious lending policy by banks leading to lower willingness to provide loans to SMEs. Indeed, the tightening of credit standards increased for SMEs in the second half of 2012, while it remained stable for big enterprises. Moreover, according to the ECB survey on the access to finance for SMEs in the Euro area, their loan applications were more likely to be rejected when the company was small: from April to December 2012, the overall rejection rate of SMEs loans was of 15%, and reached 24% for micro firms (1 to 9 employees). In contrast, 5% of big companies' loan applications were rejected over the same period. To conclude, there is high concern that these developments will negatively affect the real economy in the near future.

1.5 EQUITY AND CORPORATE BOND MARKETS

The on-going sovereign debt crisis, the investors' re-assessment of sovereign and corporate risk, and the desire of non-financial corporates (NFCs) to diversify their funding sources, have been important to understand the dynamics in corporate debt and equity markets in 2012. Equity markets have been lifted by strong policy actions amid the sovereign debt crisis, despite lacklustre

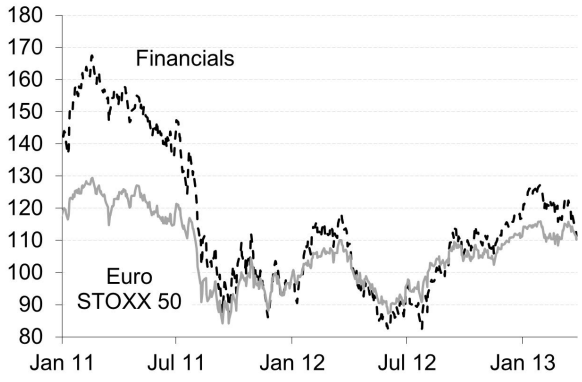
macro-economic prospects. Corporate bond markets have benefited from a relative shift from bank lending to direct issuance of debt securities, and an increasingly favourable financing climate over the year. This section provides a short overview of developments in corporate capital markets.

1.5.1 Equity markets

Against the background of sluggish economic activity, European equity markets developed favourably over the course of 2012 (chart 1.5.1), with the Eurostoxx 50 registering a full year gain of 11%. In the first months of the year, equity markets rallied amid signs of stabilisation in the global economic environment. Another supportive factor for markets stemmed from the ECB's liquidity injection in the form of long-term refinancing operations (LTRO), in December 2011 and February 2012, aimed at securing bank funding. In Spring, however, indices dropped significantly from their previous peak, on re-intensification of the sovereign debt worries, and growing concerns about the economic growth (Eurostoxx 50: -21%). In early summer, the corporate market segment, including the equity market, seemed to decouple somewhat from tensions in the sovereign bond markets, and started a mild recovery process, supported by a weakening euro and a rebound of the US stock markets on account of some better-than-expected corporate earnings. The ECB's strong policy commitment over summer confirmed, very effectively, the mood reversal on equity markets. This resulted in an impressive rally in equity markets, holding on until the year-end (+27%).

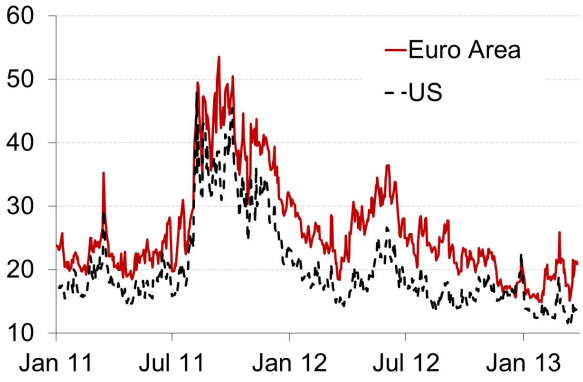
The rally took place despite a weakening macro-economic outlook and narrowing corporate profit margins, suggesting the market recovery has been more closely tied to policy developments than to economic fundamentals, and been built partly on the expectation of continued strong policy support. At the end of the year, the implied volatility of stock prices, derived from option prices and regularly used as a measure of general market uncertainty, had declined to levels comparable to other troughs reached during the current 5-year crisis (chart 1.5.2).

Chart 1.5.1: **EU stock market performance** (index, Jan2010=100)



Source: Ecowin

Chart 1.5.2: **Share prices. Forward-looking** (implied) **volatility indices**



Source: Ecowin

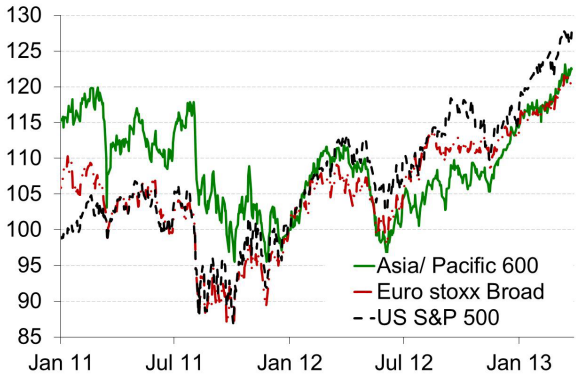
Among large Euro area Member States' stock markets the German DAX performed best with a full year progress of 29%, whereas the French CAC 40 displayed a positive evolution of about 15%. Member States heavily affected by the sovereign debt crisis underperformed significantly over the year (e.g. the Spanish IBEX 35 closed almost stable, while the Italian MIB realised a full

year return of 7%), and registered the strongest declines before the summer (IBEX 35: -33%; MIB: -25%).

In the US, the broad S&P 500 Index advanced 12% for the full year. In the last 3 months of the year it had to give back some earlier gains, amid worries about budgetary developments and signs of a slow-down in economic growth (chart 1.5.3). The STOXX Asia Pacific 600 posted a slightly lower return of 9%, as the economic activity lost steam.

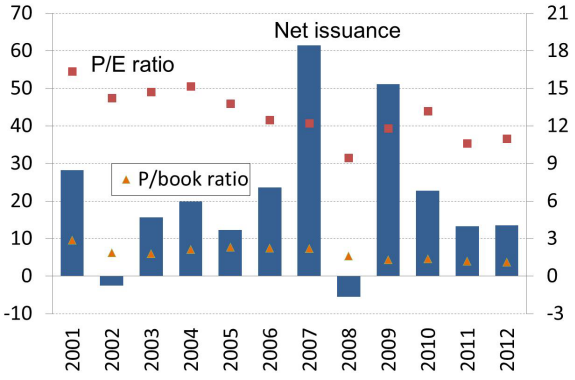
The net issuance of quoted shares by Euro area non-financial corporations (NFCs) remained subdued (i.e. EUR 14 billion), marginally higher than in 2011 (chart 1.5.4). The net issuance reflects both a sharp reduction in redemptions (from EUR 16 billion in 2011 to EUR 11 billion) and a decline in gross issuance by close to the same amount (EUR 25 billion in 2012). Net equity issuance by NFCs remained in 2012 well below the boom years, while gross issuance was even at its lowest level in the last 12 years, despite much reduced price-earnings ratios (chart 1.5.4). The total amount of outstanding quoted shares is EUR 3.673 billion (end November), an increase of 0.4% year-on-year.

Chart 1.5.3: **Global stock market performance (index, Jan2010=100)**



Source: Ecowin

Chart 1.5.4: **Net equity issuance (LHS, in €bn) and price ratios (RHS). Euro area NFCs**



Source: EFC

1.5.2 Corporate bond markets

The historically low interest rates on higher-grade sovereign bonds have pushed bond investors in corporate debt markets to accept increasingly narrowing spreads over the past year. This holds not only for the best-graded corporate bonds, but also for the lower graded, e.g. BBB-rated bonds (Chart 1.5.5). While, in the second quarter of the year, the spreads on these bonds were negatively affected by the deteriorating economic outlook, in the latter half of the year the spreads narrowed in parallel with the waning worries about the sovereign debt crisis, despite the absence of improving macro-economic fundamentals. The decline in spreads was mirrored by a fall of the indices of credit-default swaps which protect investors owning bonds against default and traders use to speculate on changes in credit quality. The fall in corporate spreads has occurred in all Member States, with the sharpest declines in distressed countries thereby reducing the heterogeneity in financing costs for NFCs across the EU.

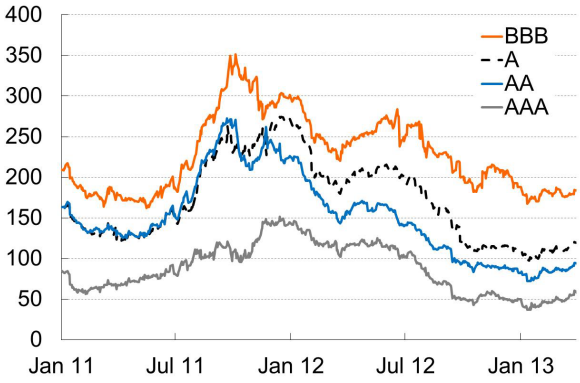
Declining spreads and yields have prompted both investment-grade and "junk"-rated corporates to sell record high volumes of bonds. After a slow start in the first quarter of the year, primary

issuance gained traction and reached a 12.5% annualized growth rate at the end of the year. The increasing (incentive-based) momentum in issuance is highlighted in charts 1.5.5 and 1.5.6.

Over 2012, the gross issuance of debt securities amounted to EUR 178 billion, only surpassed by the record year of 2009. The total amount outstanding of debt securities issued by the NFCs reached thereby historical highs of EUR 978 billion at the end of the year. Issuing companies seem to have been keen to lock in low interest rates in particular for longer maturities, notably at fixed rates, as reflected by the high proportion of long-term debt securities issuance and the annual growth rate of 13.5%. Meanwhile, the issuance of short-term debt securities (growth of 1.4%) and of longer-term debt securities at floating rates (+1.3%) was subdued.

The increase in the issuance of debt securities is part of a gradual move that has been taking place in the EU financial markets towards more capital market based funding, and less bank-based funding by corporates. This trend has been reinforced by the crisis as bank lending has been more difficult to obtain.

Chart 1.5.5: **Corporate bond spreads (basis points)**



Source: Bloomberg

Chart 1.5.6: **Itraxx default risk of NFCs, Euro area (basis points)**

Source: Markit-Itraxx

Note: Investment grade corresponds to the Itraxx Europe and High yield to the Itraxx Crossover indexes.

1.6 THE INSURANCE SECTOR

This section looks at market developments in the insurance sector and the challenges that insurance undertakings will face in the near future.

1.6.1 Market developments

The weak macroeconomic environment led to a diminishing performance of the overall insurance sector in the year 2011: total gross written premiums decreased by 3.5% (chart 1.6.1). The new single premium business dropped remarkably, reflecting cautious consumer behaviour due to the crisis[24], especially in life insurance (-7.6%). The countries most affected by this decline were Portugal, Luxemburg and, to a lesser extent, Italy and Belgium (Chart 1.6.2). In contrast, in the non-life sector, the situation was better: gross written premiums increased 2.7%.

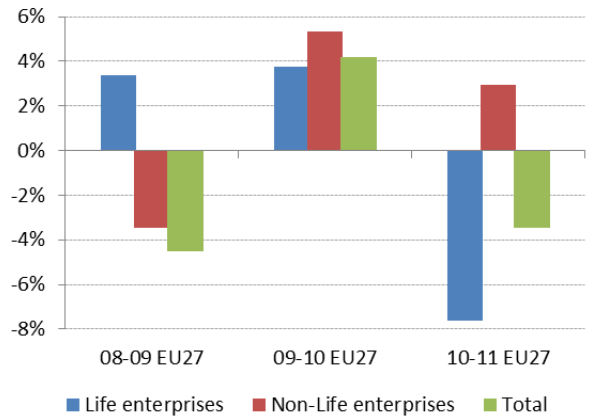
Reinsurance undertakings faced considerable losses due to the occurrence of many catastrophes in 2011, especially the earthquake in Japan, which was the costliest natural catastrophe of all times.

[24] See Insurance Europe, *European insurance in figures*, January 2013.

However, the sector has been able to cope with these difficulties thanks to its strong capital base. Therefore, business volumes of reinsurers at the end of 2011 were only 3% lower than in 2010[25]. In the first half 2012, the declining trend in gross written premiums reversed.

However, growth rates remain subdued: gross written premiums in the second quarter 2012 were 2% higher than in the same period of the previous year[26]. Despite continued competitive pressures, non-life segments recorded the highest increase, especially in fire and damage to property and general liability (+6%). Instead, competition in life insurance from similar banking products has decreased and lapse rates have improved, allowing the sector to stabilize. Most national supervisors expect premia to stabilise, in both the life and non-life segments over the next 6 to 12 months[27]

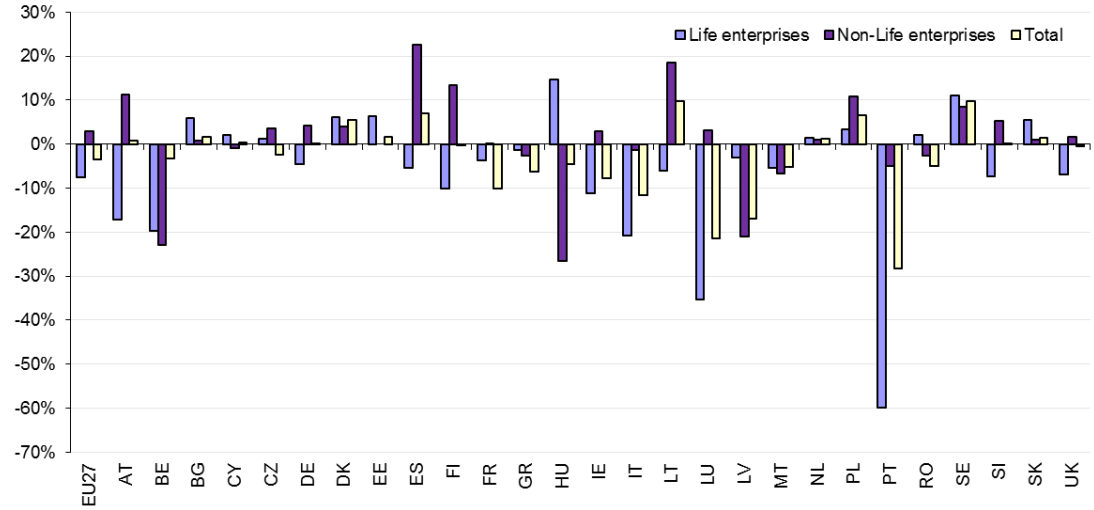
Chart 1.6.1: **Gross written premium** (% annual growth rate)



Source: EIOPA statistics

In the first nine months of 2012, the reinsurance sector benefited from the absence of large-scale natural catastrophes and, thus, overall investment results improved. Hurricane Sandy (representing damages above 20 billion USD[28]) will impact profits, but solvency margins will remain strong due to the buffers built in 2012.

Chart 1.6.2: **Gross written premiums growth, 2010- 2011 (%)**



Source: EIOPA Statistics, data available only until end 2011.

In terms of profitability, – measured as return on equity (RoE) – insurance undertakings proved resilient to the crisis by remaining broadly stable (RoE was around 7.5% in the 2nd quarter of

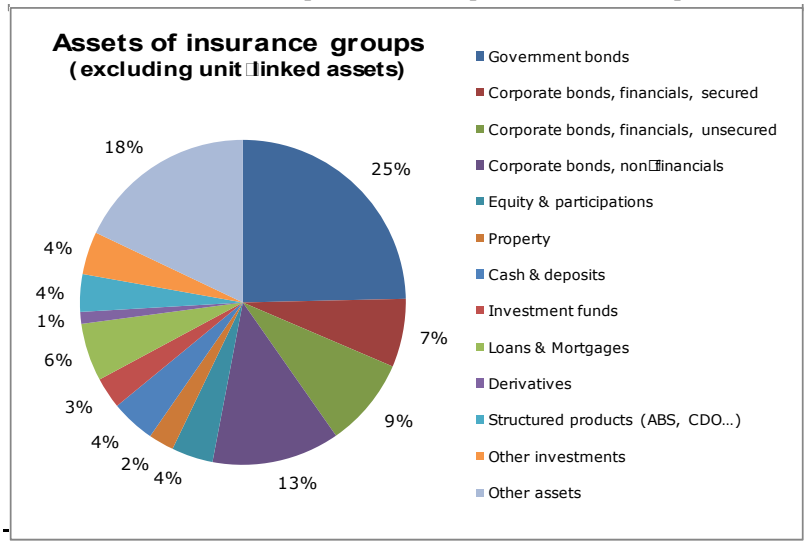
[25] See EIOPA Financial Stability Report, June 2012.
[26] See EIOPA Financial Stability Report, December 2012.
[27] See EIOPA Financial Stability Report, December 2012.
[28] See EIOPA Risk Dashboard, December 2012.

2012[29]). According to ECB data, combined ratios[30] in the non-life sector have even improved in the 3rd quarter of 2012.

Solvency ratios have also improved in the first half of 2012, compared to the same period of the previous year, thanks to a decline in sovereign bond spreads and market volatility. They remained at comfortable levels in most European countries (the median solvency ratio was about 220% in the second quarter of 2012 compared to less than 200% for the same period in 2011[31]). Non-life solvency margins were particularly strong due to continued underwriting profitability. Moreover, policy responses at the European Union level (the Commission´s proposal to advance towards a Banking Union as mentioned in section 14.1 and the ECB measures, such as the OMT described in section 14.2) had a positive impact on market sentiment, leading to a rebound in equity prices in the second half of the year. This helped improve the capital position of insurance companies.

Asset allocation of insurance undertakings is dominated by fixed income assets (52% of total assets by the end of 2011), reflecting the industry's policy to try to ensure adequate and predictable cash flows over time. In this regard, EIOPA data show that insurance undertakings remain biased towards investing in government bonds, which represent 25% of total assets; followed by financials, by 18%; and non-financial corporate bonds, representing 13% of the total (chart 1.6.3). Changes are taking place over time, however, as in the last 12 months the relative share of non-financial corporate bonds has risen. And, despite home bias, insurers broadly adopted diversification policies to address the risk arising from the sovereign debt crisis.

Chart 1.6.3: **Asset composition of European insurance companies**



Source: EIOPA risk dashboard, September 2012

Following the trend to limit risk taking, in the last years insurers´ asset allocation has gradually shifted towards holding lower levels of equity, which represented only 11% of total assets at the end of 2011[32].

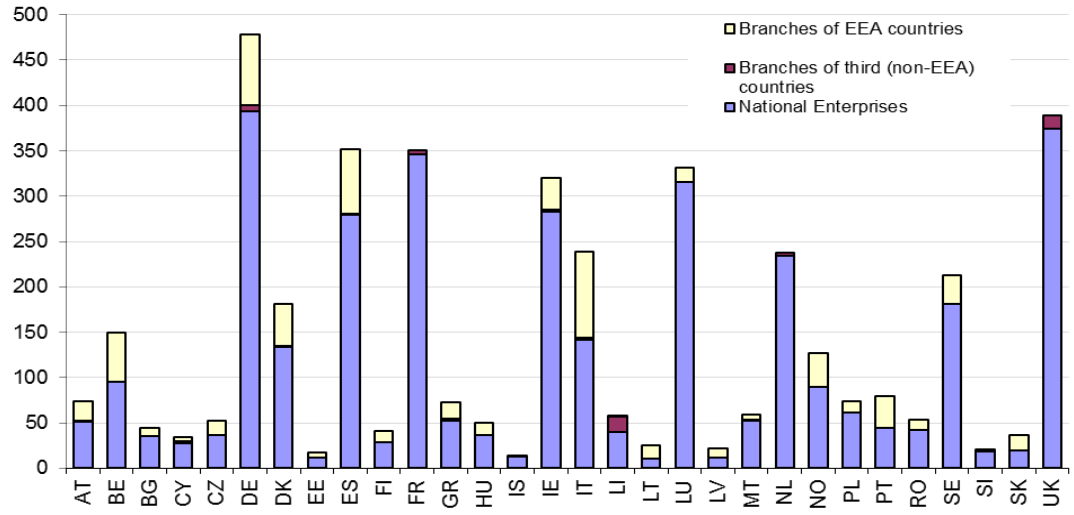
[29] See EIOPA financial stability report, June 2012: statistics consider median as more robust measure as the average.
[30] Combined ratio is measured as the ratio between (incurred loss and expenses) and gross written premiums.
[31] Definition of solvency ratio: See EFSIR 2011; for statistics see EIOPA financial stability report, June 2012.
[32] See EIOPA Financial Stability Report, December 2012.

1.6.2 Market integration and the role of insurers to finance real economy

Market integration increases opportunities for insurers and brings advantages to consumers, with respect to the quality and the variety of products offered. Most of insurers' business abroad is usually carried out through subsidiaries, and their physical presence (share of foreign branches) remains rather small. However, data from EIOPA show a clear trend towards market integration: the average share of gross written premium by foreign branches in 2011 increased to 7%, compared to 2% in the previous year. New Member States lead new branch openings and a large number of insurance undertakings have asked for authorisation to enter foreign markets. Still, the absolute number of foreign branches in Member States remains quite limited (chart 1.6.4)[33].

Insurance companies are among the biggest institutional investors in Europe and therefore play an important role in financing the real economy. Together with pension and mutual funds, they hold an estimated €13.8 trillion of assets, representing an amount larger than 100% of the region's GDP[34]. As banks are currently more constrained to meet the long-term funding needs of borrowers (see section 1.4.6), this has created opportunities for insurers and pension funds to invest in non-financial corporations[35]. This is because insurers tend to have long-dated liabilities, matching the demand for lending where banks are retrenching. This advantage arises from the funding capacity that characterizes them (together with pension funds): they can provide long term funding, such as annuities, as they are less dependent on maturity transformation.

Chart 1.6.4: **Number of entities (2011)**



Source: EIOPA

It is important to realize, however, that their investments tend to be concentrated on securities, rather than in providing direct loans. Against this background, channelling long-term resources via capital markets and reducing the dependence on bank funding would be a plus. Nevertheless, such a transformation in funding will, inevitably, take time.

Long-term projects, which often require a considerable amount of funds and know-how in their implementation, have intrinsic risks. Closer cooperation between investors and public authorities

[33] See EIOPA December 2012.
[34] See Fitch (2011) and EFAMA (2012).
[35] See section 1.4.4 on deleverage pressures on the banking sector and ECB Financial Stability Review, December 2012.

may help to successfully carry through these projects. In this respect, the EU Commission has launched a green paper. The idea is to initiate a broad and meaningful debate on how to address the challenges represented by long term financing to the real economy. The idea is none other than to bring back the EU on a path towards smart, sustainable and inclusive growth.

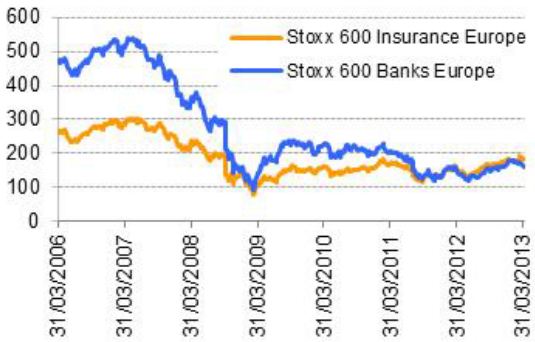
1.6.3 Risks and challenges ahead

The insurance sector faces numerous challenges ahead, both in the short- and medium-term.

First of all, there is an uncertain overall economic outlook, constituting a major challenge to insurers, as recessionary pressures can negatively impact insurance demand. In the absence of growth, insurers encounter a challenging environment where to generate sufficient revenues to stand by their commitments. Moreover, they could be induced to search for higher yields, at the expense of undertaking greater risks. Obviously, the higher risk will come at a price, bringing other unwanted consequences.

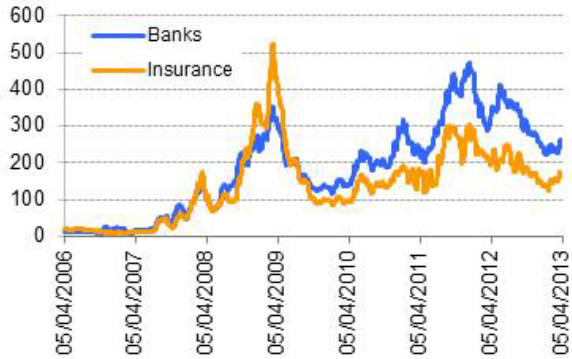
The second biggest challenge faced by the sector is a prolonged period of low interest rates. This presents a high risk for the profitability and the capital position of insurance undertakings in the medium-term. Interest rates have a significant impact on business lines where investment income is a major source of earnings. Whereas long-term interest rates have been at historically low levels since 2010, both short- and long-term European benchmark rates have further declined since the beginning of 2012. Insurers, and particularly life insurers, are institutional savers that suffer from low investment yields, as the net present value of their long-run obligations to policyholders and pensioners increases when interest rates are low. Insurance undertakings that have offered guaranteed minimal rates of return to policyholders and those that have a significant duration gap between assets and liabilities will suffer more in such an environment.

Chart 1.6.5: **Stoxx indices for insurers and banks**



Source: Bloomberg

Chart 1.6.6: **Sector CDS spreads for insurers and banks**



Source: Bloomberg

According to an EIOPA stress test analysing prolonged low interest rates, published in its December 2012 Financial Stability Report, between 5% and 10% of the companies surveyed would face considerable problems (their Minimum Capital Requirement solvency ratio would fall below 100%). To address this issue, insurers are reducing or adjusting their guaranteed returns offered in new insurance policies. Nevertheless, life insurers will need to envisage strategies that go beyond these measures and design new products that enable them to effectively hedge interest rate risks. At the same time, life insurers will have to continue monitor closely and manage effectively the risk of low interest rates, to ensure they can meet their obligations. In this regard,

they will have to envisage a mix of strategies, such as cash-flow hedging, product changes (including the development of new products), as well as strengthening their capital base.

The third challenge faced by insurers is market volatility, particularly in (sovereign) bond prices, as it could affect the capital position of insurance undertakings in the near future. This is also one of the reasons why some insurance undertakings face negative rating outlooks[36]. Many insurers are therefore paying increased attention to their earnings retention[37].

Finally, vulnerabilities in the banking sector remain a risk for insurance undertakings, as banks are a major counterparty for a significant part of insurers' investments in debt securities (bank bonds accounted for 9% of insurers' and pension funds' total financial assets in the second quarter of 2012[38]). As a result, the insurance and banking sectors are highly interlinked, as shown in the evolution of Stoxx indices and CDS spreads (charts 1.6.5 and 1.6.6, respectively). Therefore, drawbacks in or affecting the banking sector could spill over to insurance undertakings. Derivative contracts between banks and insurers increase interconnectedness and could also reduce resilience to shocks emerging from the banking sector. For example, liquidity swaps might expose insurance companies to additional liquidity risk[39]. At the moment, liquidity swaps are traded by a small number of institutions and to a limited extent (3% of balance sheet assets in average[40]). However, future developments should be carefully monitored.

[36] On a sample of 24 large insurance groups, 6 have negative rating outlooks and 17 stable outlooks (in contrast to respectively 4 and 18 for the year 2011). See EIOPA financial stability report, December 2012.
[37] See also ECB Financial Stability review, December 2012.
[38] See ECB financial Stability review, December 2012.
[39] Banks might swap securities with insurers, in order to get the collateral that facilitates their access to liquidity.
[40] National variations go from 0% to 14% of the balance sheet assets. See EIOPA financial stability report, December 2012.

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CHAPTER 2: POLICY DEVELOPMENTS

2.1 INTRODUCTION

This chapter provides an overview of the main policy measures introduced or continued in 2012. It covers both the macro-financial policies, including financial assistance and other support measures (section 2.2), economic governance reforms (section 2.3), and the on-going reform programme to achieve a better financial sector (section 2.4).

2.2 FINANCIAL ASSISTANCE AND SUPPORT MEASURES

2.2.1 Permanent financial backstop mechanisms

On the 27th of September 2012 the Treaty establishing the European Stability Mechanism (ESM)[41] entered in force, after having been ratified by all 17 Euro area Member States. The ESM is an important component of the comprehensive EU strategy designed to safeguard financial stability within the Euro area. Like its predecessor, the European Financial Stability Facility (EFSF), it provides stability to support Euro area Member States experiencing or threatened by financial difficulties. In accordance with the agreement reached among the Heads of State or Government of the Euro area, the ESM will operate alongside the EFSF for a limited period of time[42].

The ESM is an international financial institution based in Luxembourg, established under public international law. The effective lending capacity of the ESM will be built up gradually, as the required paid-in capital is transferred to the ESM by its members. The Heads of State or Government of the EA agreed, in March 2012, that the first two tranches of capital (€16 billion each) should be paid in 2012, followed by two tranches in 2013 and a final tranche in the first half of 2014, to sum up to a total of €80 billion. To provide stability support, it is entitled to raise funds by issuing on the capital markets or by entering into financial or other agreements with ESM Members, financial institutions or other third parties. ESM assistance will be provided under economic policy conditionality, which encompasses a range of options intended to cater to the specific instrument being used.

The ESM offers a range of financial assistance instruments, which are mirrored under the EFSF structure: (i) granting loans to countries in financial difficulties; (ii) purchasing bonds of an ESM Member State in the primary or secondary debt markets; (iii) establishing precautionary financial assistance in the form of a credit line; and (iv) providing capital to an ESM Member for the specific purpose of assisting financial institutions (specifically to cater for non-programme countries facing problems stemming from the financial sector). Based on revised accords, maturities can extend up to 30 years.

According to an agreement reached among the Euro area Heads of State or Government in the course of 2012, the ESM will be empowered to directly recapitalise banks in the Euro area once an effective single supervisory mechanism for Euro area banks is established (see chapter 1, section 1.4). The ESM Treaty already allows for the possibility to create new instruments; thus the

[41] http://www.european-council.europa.eu/media/582311/05-tesm2.en12.pdf

[42] Already during the transitional period, until mid-2013, the ESM will be the main instrument for the financing of new programmes. While the EFSF will, as a rule, only remain active in financing programmes that were started before the ESM entered into force, it may engage in new programmes in order to ensure a full fresh lending capacity of €500 billion.

introduction of this additional instrument will not require a Treaty change. Work has already begun on designing the details and modalities of conducting direct recapitalisation. An agreement of the ESM Board of Governors will be required for its implementation into the ESM structure.

2.2.2 Financial assistance programme to Spain

As mentioned in chapter 1 (sections 1.3), on top of the existing financial assistance programmes to Greece, Ireland and Portugal, Spain requested financial assistance on June 9th 2012 to recapitalize a number of its financial institutions by the EFSF. The total amount approved has been up to EUR 100 billion. This program has subsequently been taken over by the European Stability Mechanism (ESM).

The assistance is conditional on specific policy measures regarding the financial sector as foreseen by the Memorandum of Understanding[43]. The financial-sector-specific policy conditions contain both bank-specific and horizontal conditionality that the country has to implement, to increase the long-term resilience of the banking sector, thus restoring its market access, and to deal effectively with the legacy stock of assets stemming from the burst of the real-estate bubble.

Horizontal conditionality applies to the entire banking sector, unlike bank-specific conditions, which only apply to banks unable to meet capital shortfalls identified by the bank-by-bank stress test without having recourse to State aid. The horizontal programme includes measures aimed, inter alia, at strengthening the regulatory, supervisory and bank resolution frameworks, enhancing the governance structure of savings banks and of commercial banks controlled by them, and improving consumer protection legislation as regards the sale by banks of subordinated debt instruments.

In addition, Spain needs to honour its commitments and follow the recommendations under the excessive deficit and macroeconomic imbalances procedures in the framework of the European semester.

The bank-specific conditionality, in particular based on and enforced through the full application of State aid rules for the financial sector[44], has three main components:

1. A comprehensive diagnostic as regards the capital needs of individual banks, based on an asset quality review and evaluation process, and bank-by-bank stress tests.

2. The segregation of impaired assets from the balance sheet of banks in need of public support and their transfer to an external Asset Management Company.

3. The recapitalisation and restructuring of viable banks and an orderly resolution of ultimately non-viable banks, with private sector burden-sharing as a prerequisite. Eight banks could not fill the capital shortfall revealed by the stress test without recourse to State aid, and subsequently had to be restructured in compliance with State aid rules.

The Spanish programme, which made the disbursement of ESM funds to Spain for the purpose of recapitalising banks contingent on the Commission's approval of restructuring or resolution plans,

[43] http://ec.europa.eu/economy_finance/eu/countries/pdf/mou_en.pdf
[44] http://ec.europa.eu/competition/state_aid/legislation/temporary.html

has enhanced the role of State Aid control as a crisis resolution tool. It has contributed to reducing the cost of the Spanish programme for the ESM to approximately EUR 44 billion.

The terms and conditions of the financial sector assistance were negotiated between the Spanish authorities and the European Commission (EC), in liaison with the European Central Bank (ECB) and the European Banking Authority (EBA), with technical assistance of the International Monetary Fund (IMF).

The loans are provided to the Fondo de Restructuración Ordenada Bancaria (FROB), the bank recapitalization fund of the Spanish government, and then channelled to the financial institutions concerned.

2.3 REINFORCED ECONOMIC GOVERNANCE AT EU AND MS LEVEL

A major weakness of the pre-crisis surveillance arrangements was the lack of following macroeconomic imbalances and competitiveness developments in EU Member States, despite the proceeding economic and financial integration amongst them. As the crisis accelerated, the instability in one Member State risked spilling-over to others, thereby jeopardising the cohesion and stability of the entire EA and EU. The crisis made the need to deepen economic integration in the EA and the Union more broadly as obvious as urgent.

2.3.1 The Two-Pack

Recognising the need to further strengthen Euro area economic surveillance mechanisms and to go beyond the 'Six-Pack'[45], the Commission proposed, in November 2011, two supplementary Regulations - the so-called 'Two-Pack'[46]. Both Regulations will apply to Euro area Member States. One of the Regulations aims to further strengthen surveillance mechanisms by, in particular, monitoring and assessing draft budgetary plans. The second will further align principles already being used in granting and implementing financial assistance with the Treaty framework. The latter sets out explicit rules for enhanced surveillance for those Euro area Member States experiencing or threatened with severe financial difficulties; it will also address measures for those currently under financial assistance as well as those in the process of exiting such assistance.

2.3.2 The Commission's Blueprint for a deep and genuine EMU

In June 2012 the President of the European Council, in cooperation with the Presidents of the Commission, the Eurogroup and the ECB presented a report to enable the EA to integrate quicker and deeper. The report, "Towards a Genuine Economic and Monetary Union", identified four essential 'building blocks' for further integration: (i) an integrated financial framework, (ii) an integrated budgetary framework, (iii) an integrated economic policy framework and (iv) democratic legitimacy and accountability.

[45] The legislative package known as 'Six-Pack' entered into force in December 2011. For a more detailed description, see EFSIR 2011.

[46] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:DKEY=627835:EN:NOT and http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:DKEY=627834:EN:NOT

On 28 November 2012, the Commission published its 'Blueprint for a Deep and Genuine Economic and Monetary Union: Launching a European Debate', to move ahead and strengthen cooperation and integration in the financial, fiscal, economic and political field. The blueprint together with a second report by the four Presidents fed into discussion at the December European Council, which set a specific and time-bound roadmap for the achievement of a genuine banking, economic and political union, including legislative actions.

The main actions envisaged are the following:

- In the short term (within 6 to 18 months), implementing the governance reforms already agreed ('Six-Pack') or about to be agreed ('Two-Pack'). An effective banking union would not only require the setting up of a Single Supervisory Mechanism and the harmonization of deposit guarantee schemes. It also requires a Single Resolution Mechanism to deal with banks in difficulties. With the decision on the next Multi-annual Financial Framework (MFF) for the EU already taken, the economic governance framework has been be strengthened further by proposing the creation a "convergence and competitiveness instrument" within the EU budget – but separate from the MFF - to support the timely implementation of structural reforms, on the condition that "contractual arrangements" are concluded between Member States and the Commission. This would support the rebalancing, adjustment and therefore growth of the economies of the EMU and would serve as the initial phase in the establishment of a stronger fiscal capacity alongside more deeply integrated economic policies. Building on progress achieved in the economic governance of the Euro area, a strengthening and consolidation of its external representation should be pursued.

- In the medium term (18 months to 5 years), the Euro area would benefit from deeper coordination in the field of tax policy issues and labour markets, given the significance of labour mobility for adjustment capacity and growth within the Euro area. Building on the Convergence and Competitiveness Instrument, the fiscal capacity for the Euro area should be further enhanced. It should be autonomous and rely solely on its own resources. It should provide sufficient support to address important structural reforms in a large economy under distress. A clearly reinforced economic and fiscal governance framework could allow considering the reduction of public debt significantly exceeding the SGP criteria, by setting-up a redemption fund subject to strict conditionality. The common issuance by Euro area Member States of so-called Euro-bills - short-term government debt with a maturity of up to one or two years - could constitute a tool against the present fragmentation, reducing the negative feedback loop between sovereigns and banks, while limiting moral hazard. The monitoring and managing function for the fiscal capacity and other instruments should be provided by an EMU Treasury within the Commission. The further strengthening of policy coordination and enhancement of the fiscal capacity would initially start under secondary law, but would require Treaty changes at some point. The creation of a Debt Redemption Fund and the common issuance of short-term government debt would require Treaty changes.

- In the longer term (beyond 5 years), based on the progressive pooling of sovereignty, responsibility and solidarity at the European level, an autonomous Euro area budget

providing for a fiscal capacity for the Euro area to support Member States in the absorption of shocks should become possible. The central budget would provide for an EMU-level stabilisation tool to support adjustment to asymmetric shocks, facilitating stronger economic integration and convergence. Overall, a shared instrument could deliver net gains in stabilising power, as compared with current arrangements. How large this fiscal capacity would ultimately turn out to be will depend on the depth of integration desired and on the willingness to enact accompanying political changes. Also, a deeply integrated economic and fiscal governance framework could allow a common issuance of public debt, which would enhance the functioning of the markets and the conduct of monetary policy. This would be the final stage in EMU.

2.3.3 A Financial Transaction Tax

On 28 September 2011, the Commission adopted a proposal for a Council Directive on a common system of financial transaction tax (FTT) and amend Directive 2008/7/EC[47]. The proposal required a unanimous vote in the Council, and it quickly became clear that some Member States had specific problems which made it impossible for them to accept the proposed directive.

Since then, eleven Member States have indicated their intention to establish enhanced cooperation between themselves in the area of the creation of a common system of FTT by addressing a request to the Commission in accordance with Article 329(1) TFEU. The Commission subsequently presented a proposal for a Council decision authorising enhanced cooperation. After the European Parliament's consent given in December 2012, the Council authorised enhanced cooperation in the FTT area in January 2013. Subsequently, in February 2013, the Commission adopted a proposal for a Council Directive implementing enhanced cooperation in the area of FTT[48].

The financial sector was a major cause of the crisis and received substantial government support. A common system of FTT introduced in a block of Member States representing around 2/3 of EU GDP will harmonise indirect tax legislation, generate significant revenues, safeguard a fair and substantial contribution from the financial sector and help ensure greater stability of financial markets, without posing undue risk to EU competitiveness.

In addition, it will constitute a milestone for EU tax policy, as it paves the way for more ambitious Member States to progress on tax files, following the direction of the blueprint[49].

2.3.4 The Compact for Growth and Jobs.

Economic growth is key to restore fiscal and macro-economic balances. Therefore, and in line with its Europe 2020 growth strategy, the European Council agreed in June 2012 on the Compact for Growth and Jobs, as an integral part of EU's response to the economic and financial crisis.

The Compact encompasses a wide range of growth-enhancing initiatives, instruments and policies based on the following pillars: boosting the implementation of the Europe 2020 Strategy;

[47] http://europa.eu/legislation_summaries/internal_market/single_market_services/financial_services_general_framework/mi0087_en.htm
[48] http://ec.europa.eu/taxation_customs/taxation/other_taxes/financial_sector/index_en.htm
[49] http://ec.europa.eu/commission_2010-2014/president/news/archives/2012/11/pdf/blueprint_en.pdf

deepening the Single Market; developing transport, energy and digital networks across the EU; completing the Digital Single Market and the Internal Energy Market; creating the right regulatory framework for growth, in particular for SMEs and micro-enterprises; promoting an industrial policy with an integrated vision on research and innovation to invest in the deployment of Key Enabling Technologies in order to enhance the competitiveness of the industry sector and favour growth; creating the right regulatory framework for growth; developing a tax policy for growth; boosting employment and social inclusion, especially adopting initiatives to tackle youth unemployment; and last, but not least, harnessing the potential of trade.

So far, significant progress has been made on several aspects of the Compact, for example the increase in capital of the EIB, the launch of the first EU project bonds and the adoption by the Commission in June 2012 of a Communication on "A European strategy for Key Enabling Technologies –A bridge to growth and jobs".[50]

2.3.5 Enhanced governance in practice: the 2012 European Semester

In 2012, the EU completed its second European semester. The European semester is integrating all revised and new surveillance processes into a comprehensive macro-economic, fiscal and structural policy framework. On the basis of a Commission proposal, the Council provides ex ante policy guidance to each Member State and to the Euro area as a whole. These recommendations cover Member States' budgetary, financial, structural and employment challenges. Member States have to incorporate the policy advice in their budgetary and structural reform agendas and implement the country-specific recommendations (CSR) within the following 12 months.

In 2012, the Commission's Annual Growth Survey, which provides general guidance to the Member States on the coming year's key policy priorities, called for national and EU efforts to be concentrated on five priorities, with a clear focus on measures that enhance growth and labour-market participation:

- Pursuing differentiated growth-friendly fiscal consolidation.
- Restoring normal lending to the economy.
- Promoting growth and competitiveness for today and tomorrow.
- Tackling unemployment and the social consequences of the crisis.
- Modernising public administrations.

In 2012, the Commission's proposal for country-specific recommendations (CSR) on public finances called, inter alia, for respecting obligations under the Excessive Deficit Procedure (EDP), making progress towards the Medium Term Objectives, adjusting fiscal frameworks, and improving long-term sustainability of public finances, e.g. by linking statutory retirement age to life expectancy. All Member States were also recommended to undertake action in the area of the labour market, particularly regarding labour market participation, including improving education systems. In the area of structural reforms, the CSR proposal called, inter alia, for adjusting wage setting mechanisms, shifting taxes from labour to e.g. environmental taxes, strengthening

[50] COM (2012) 341 final.

competition in network industries and for further liberalising professional services. For some Member States, the CSR proposal called for further restructuring banks and improving supervisory cooperation, supporting access to finance for SMEs, and reviewing financial regulation and property taxation with a view of preventing excessive volatility in the housing market[51].

The 2012 European semester incorporated the new elements implied by the entry into the force of the six-pack legislation. Firstly, the public finances assessment and the CSR proposals made reference to compliance with the new expenditure benchmark and debt reduction benchmark under the SGP. Secondly, the preventive arm of the new Macro-economic Imbalances Procedure (MIP) was fully integrated in the European semester.

The 2013 European semester was kicked off by publication of the Commission's Annual Growth Survey, in end-November 2012. The 2013 key policy priorities were kept the same as in 2012 (listed above). The annual Alert Mechanism Report (AMR) of the Macro-economic Imbalances Procedure was published at the same time as the Annual Growth Survey. The AMR identified 14 countries which were considered to be at risk of a macro-economic imbalance and for which an in-depth review will be drafted to assess the situation. The in-depth reviews are being published at the time this publication was printed (April 2013) and will provide the basis for in depth discussions with Member States before the Commission comes out with the country-specific recommendations in May.

2.4 REFORMS OF THE FINANCIAL SECTOR

Following the outbreak of the financial crisis in 2008, the stabilisation of financial markets became a priority and financial sector reform a crucial instrument to achieve it. Filling in the gaps in financial sector regulation and strengthening the supervision of the financial sector in Europe have been the two main strands of work undertaken by EU institutions. In particular, and in line with the commitments taken by the G20, the Commission has targeted the following structural sources of vulnerability in its reform agenda:

- The observed low levels of high quality capital and liquidity in the banking sector, partly reflecting inadequate and pro-cyclical prudential requirements and failures in risk assessment and management;
- Supervisory shortcomings with regard to institutions operating in a cross-border context and in the unregulated part of the financial sector, including the OTC derivatives market;
- Corporate governance failures which contributed to excessive risk taking practices in financial institutions and insurance undertakings;
- Insufficient market transparency and inadequate disclosure of information to authorities, particularly with reference to complex structured financial products;
- Lack of adequate regulation and supervision of Credit Rating Agencies;

[51] The European semester includes the assessment of policy commitments that Member States take in the context of the Euro Plus Pact. This Pact, created in 2011 by the Heads of State or Government of the EA and joined by Bulgaria, Denmark, Latvia, Lithuania, Poland and Romania, aims at strengthening economic policy coordination and improving competiveness.

- Insufficient macro prudential surveillance of the financial sector as a whole, to prevent macro-systemic risks of contagion;

- The absence of a harmonised framework to facilitate the orderly wind-down of banks and financial institutions, which has contributed to put pressure on Member States to inject public money into banks to prevent a general collapse.

2.4.1 The Banking Union

Section 1.4 of chapter 1 presented the Commission's proposed Single Supervisory Mechanism. In this subsection we analyze in detail the June 2012 proposal on recovery and resolution tools for banks in crisis, and the other two components necessary for an integrated "banking union":

A single recovery and resolution framework: The Commission's proposal on recovery and resolution tools for banks in crisis, presented in June 2012[52] implements the European Union's commitment, as part of the G20, to review our bank resolution regimes and bankruptcy laws in light of the crisis, to allow for an orderly wind-down of large complex cross-border institutions. The proposal fully implements the Key Attributes developed by the Financial Stability Board endorsed by the G20.

To that end, the proposal would equip national authorities with tools to force the orderly restructuring of a bank that is failing or likely to fail with a view to preserving components that are considered systemic from a financial stability point of view. This typically includes deposits and payment systems. The financial burden is put first and foremost on shareholders and creditors, not taxpayers (known as "bailing-in", instead of "bailing-out" banks). The proposal also aims at ensuring coordination between national authorities in resolving cross-border groups, with a view to preserving the internal market and avoiding contagion across the whole EU.

The single rulebook in the form of Capital Requirements: In July 2011, the Capital Requirements Directive (CRD) was replaced with a Directive and a Regulation in order to implement the Basel III agreement, which significantly increases the levels of capital which banks and investment firms must hold to cover their risks. The CRD IV[53] follows the Basel Accord very closely and is accompanied by a thorough impact assessment, in line with Commission practice.

The Regulation, in being directly applicable without national transposition, eliminates the danger of divergent national rules. It contains detailed prudential requirements for credit institutions and investment firms. In particular, it covers: a) capital, addressing the amount and quality of own funds; b) liquidity, introducing a Liquidity Coverage Ratio; c) leverage, introducing a ratio to limit excessive leverage; and d) counter party credit risk, encouraging institutions to clear OTC derivatives in central counterparties.

The Directive, which needs transposition, covers: a) enhanced governance, b) sanctions, c) capital buffers (on top of the minimum capital requirements, a capital conservation buffer and a countercyclical buffer), d) enhanced supervision and, e) reduction on the reliance on external credit ratings.

[52] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52012PC0280:EN:NOT
[53] http://ec.europa.eu/internal_market/bank/regcapital/new_proposals_en.htm

Harmonized deposit protection schemes: Thanks to EU legislation[54], bank deposits in any Member State are already guaranteed up to EUR 100,000 per depositor if a bank fails. In July 2010, the Commission proposed to go further[55], with a harmonisation and simplification of protected deposits, faster pay-outs and improved financing of schemes, notably through ex-ante funding of deposit guarantee schemes and a mandatory mutual borrowing facility between national schemes.

2.4.2 Progress of the financial reform agenda

The Commission has continued its regulatory agenda in 2012. Its aim is none other than to improve financial supervision and financial institutions' governance; ensure the efficiency, integrity and liquidity of markets; safeguard adequate protection and inclusion of consumers and investors; and stimulate investment in the real economy, with a clear focus on SME financing.

2.4.2.1 Approval of key reforms

2012 saw approval of three important files enhancing the transparency, efficiency and integrity of markets: **EMIR**[56] (European Markets Infrastructure Regulation on Over-The-Counter derivatives markets) was proposed in autumn 2010 to implement the G-20 commitment to clear standardised OTC derivative transactions via central counterparties (CCPs). EMIR's technical standards have equally been approved in February 2013. The new rules will reduce the risks related to derivative transactions, by increasing transparency in OTC derivatives markets, and making them safer, by reducing counterparty credit risk and operational risk (see chapter 4 for further discussion).

The Regulation on **short-selling and credit default swaps**[57] entered into force in November 2012. It equally seeks to increase transparency via a requirement for notification or disclosure of significant short positions relating to shares and sovereign debt; it imposes restrictions on short sales through a location requirement; it prohibits naked CDSs on EU sovereign debt instruments; and it enhances competent authorities and ESMA's intervention powers, in order to reduce the risks from short selling and CDSs and ensure a common regulatory approach across the EU.

In January 2013 an agreement was found on **Credit Rating Agencies**[58]. The proposals for a directive and a regulation amend existing legislation on credit rating agencies (CRAs) in order to reduce investors' over-reliance on external credit ratings, mitigate the risk of conflicts of interest in credit rating activities and increase transparency and competition in the sector. Specifically, the draft directive amends current directives on undertakings of collective investment in transferable securities (UCITS) and on alternative investment funds managers (AIFM) in order to reduce these funds' reliance on external credit ratings when assessing the creditworthiness of their assets.

Other reforms approved during 2012 increase the protection and inclusions of consumers and investors, stimulating in turn investment in the real economy: the **SEPA** (Single European Payments Area) Regulation[59] entered into force in March 2012. It will speed up the process for

[54] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:068:0003:0007:EN:PDF
[55] http://ec.europa.eu/internal_market/bank/docs/guarantee/20100712_proposal_en.pdf
[56] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32012R0648:EN:NOT
[57] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:086:0001:0024:en:PDF
[58] http://ec.europa.eu/internal_market/securities/agencies/index_en.htm
[59] http://eur-lex.europa.eu/Result.do?T1=V2&T2=2012&T3=260&RechType=RECH_naturel&Submit=Search

direct debits and credit transfers and will make payments all over the Euro area as easy and quick as domestic payments. The migration deadline is set for February 2014.

Agreement was found in March 2013 on **Venture Capital Funds**[60] **and Social Entrepreneurship funds**[61]**,** two closely linked initiatives. The two new regulations introduce a label for funds investing in SMEs and social enterprises in order to make them more easily identifiable for investors.

The proposal for a Regulation on European Venture Capital Funds will make it easier for venture capitalists to raise funds across Europe for the benefit of start-ups. The approach is the following: once a set of requirements is met, all qualifying fund managers can raise capital under the designation "European Venture Capital Fund" across the EU. By introducing a single rulebook, venture capital funds will have the potential to attract more capital commitments and become bigger.

The proposal for a Regulation on European Social Entrepreneurship Funds lays the foundations for a European market for social investment funds. It introduces a new "European Social Entrepreneurship Funds" label so investors can easily identify funds that focus on investing in European social businesses. To get the label the funds must invest for the most part in SMEs or social businesses (70% of the capital received from investors). The approach is similar to the Venture Capital proposal: once the requirements defined in the proposal are met, managers of social investment funds will be able to market their funds across the whole of Europe. Uniform rules on disclosure will ensure that investors get clear and effective information on these investments.

2.4.2.2 Further progress on other dossiers

In order to further increase the integrity, transparency, liquidity and efficiency of markets, the Commission adopted in October 2011 a proposal for a **Regulation on Market Abuse**[62] and a proposal for a Directive on Criminal Sanctions for Market Abuse[63] as part of a package with the review of the **Markets in Financial Instruments Directive** (MiFID)[64].

The latter seeks to improve the transparency, efficiency and integrity of securities markets in several ways. In particular, the scope of MiFID will be extended to new types of trading platforms and financial instruments, thus removing some opaque areas of securities markets and ensuring a level playing field. Transparency requirements will be extended to all kinds of securities (not just shares), with derogations only applicable in well justified cases. The review also seeks to improve other key areas, such as better investor protection; more competitive and efficient market infrastructures; more transparent commodity derivatives markets; and addresses new issues emanating from market developments such as high frequency and algorithmic trading.

[60] http://ec.europa.eu/internal_market/investment/venture_capital/index_en.htm
[61] http://ec.europa.eu/internal_market/investment/social_investment_funds/index_en.htm
[62] See European Commission (2011), 'Proposal for a Regulation of the European Parliament and of the Council on insider dealing and market manipulation (market abuse)', October 2011.
[63] See European Commission (2011), 'Proposal for a Directive of the European Parliament and of the Council on criminal sanctions for insider dealing and market manipulation', October 2011.
[64] Directive 2004/39/EC.

With respect to legislation on market abuse, this has been revised to increase investor confidence and market integrity. In particular, to keep pace with market developments; reinforce the regulators' investigative and sanctioning powers; reduce administrative burdens on SME issuers; and define criminal offences at the EU level.

With the same aim of improving markets, and bring more safety and efficiency to securities settlement in the EU, the Central Securities Depositories (CSD) Regulation was proposed in March 2012[65]. The proposal defends shortening the time of securities settlement and ensuring that market participants comply with strict measures to minimise settlement fails. It also proposes that CSDs should comply with a set of rules, in line with international standards, to ensure their safety and soundness, and that a true internal market for the services provided by national CSDs is introduced.

Following the launch of the three new European Supervisory Authorities on 1 January 2011 the Commission proposed targeted changes to legislation in the area of insurance and securities regulation to ensure that the new Authorities can work effectively (**Omnibus II/Solvency II**)[66].

The amendments are necessary for: a) the definition of the appropriate areas in which the Authorities will be able to propose technical standards for supervisory convergence and with a view to developing a single rule book to ensure strengthened stability, equal treatment, lower compliance costs and to prevent regulatory arbitrage; b) the Authorities to be able to settle disagreements between national supervisors in a balanced way; and c) the existing Directives to operate in the context of new authorities.

Thus, the proposed text for Omnibus II/Solvency II seeks to improve the stability and governance of financial institutions. The 2008 financial crisis highlighted, moreover, considerable shortcomings in the European audit system. Audits of some large financial institutions resulted in 'clean' audit reports despite the serious intrinsic weaknesses in the financial health of the institutions concerned. To tackle these issues the Commission adopted in November 2011 a comprehensive legislative proposal[67], including a proposal for a review of the **Statutory Audit Directive** as well as a proposal for a new regulation for public interest entities, which include financial institutions. These proposals resulted from an extensive consultation process (e.g. the Green Paper on Audit Policy) and aim to improve audit quality by clarifying the role of the auditors, strengthening their independence as well as ensuring greater diversity into the current highly-concentrated audit market.

The remaining initiatives presented by the Commission are seeking consumer and investor protection and stimulating investment in the real economy:

In July 2012 the Commission presented three key initiatives in order to ensure consumer protection and one initiative to protect investors. These were: a proposal on packaged retail investment products (**PRIPs**)[68] in order to ensure that all consumers in Europe will in the future be able to get short, focused, and plainly-worded information about investments in a common

[65] http://ec.europa.eu/internal_market/financial-markets/central_securities_depositories_en.htm
[66] http://ec.europa.eu/internal_market/insurance/solvency/future/index_en.htm
[67] http://ec.europa.eu/internal_market/auditing/reform/index_en.htm
[68] http://ec.europa.eu/internal_market/finservices-retail/investment_products_en.htm

format, with risks and costs made much clearer and easier to understand, aiding comparisons; a proposal for the revision of the **Directive on Insurance Mediation**[69]**,** seeking to ensure a level playing field between all participants involved in the selling of insurance products and at strengthening consumer protection and market integration, and, the revision of the **UCITS Directive**[70] based on the experience from the financial crisis, so as to continue to ensure the safety of investors and the integrity of the market. In particular, this proposal will ensure that the UCITS brand remains trustworthy by ensuring that the depositary's (the asset-keeping entity) duties and liability are clear and uniform across the EU.

A proposal for a **Directive on credit agreements relating to residential property**[71] was presented by the Commission in March 2011. It aims at creating a single market for mortgage credit and to ensure at a pre-contractual stage a high level of consumer protection while at the same time promoting financial stability by ensuring responsible lending to consumers. The proposal sets out: a) conduct of business rules for the provision of mortgage credit; b) a legal framework to ensure that all actors involved in the origination and distribution of mortgage credit are appropriately regulated (e.g. credit intermediaries, non-banks) and c) introduces a passport for credit intermediaries.

The Commission equally put forward the **Transparency and Accounting Directives** which simplifies the regulatory environment for small and medium-sized issuers by alleviating the unnecessary administrative burden and improves their access to capital, which are high political priorities for the Commission and would also close the existing gaps in the regime for notification of major holdings of voting rights by requiring disclosure of cash-settled derivative financial instruments.

The initiatives described above represent the fulfilment of all G-20 commitments made by the EU.

2.4.2.3 New initiatives

At the Cannes Summit in November 2011, the G20 Leaders agreed to strengthen the oversight and regulation of the **shadow banking** system, and endorsed the Financial Stability Board (FSB)'s initial recommendations with a work plan to further develop them in the course of 2012.

Non-bank credit activity, or shadow banking performs important functions in the financial system: it creates additional sources of funding and offers investors alternatives to bank deposits. But it can also pose potential threats to financial stability, especially when it performs bank-like functions and when there is a clear interconnection with the traditional banking system. There is also a risk of regulatory arbitrage, since the rules for banks have been tightened.

In this context, the Commission presented a Green Paper[72] with the objective of consulting stakeholders on definition, risks and benefits, the need for stricter monitoring and regulation, outstanding issues and next steps for shadow banking. During 2013 the Commission services are working on initiatives concerning a follow up to the Green Paper, together with Money Market Funds.

[69] http://ec.europa.eu/internal_market/insurance/consumer/mediation/index_en.htm
[70] http://ec.europa.eu/internal_market/investment/ucits-directive/index_en.htm
[71] http://ec.europa.eu/internal_market/finservices-retail/credit/mortgage_en.htm
[72] http://ec.europa.eu/internal_market/bank/docs/shadow/green-paper_en.pdf

In November 2011, a High-level Expert Group was set up in order to examine possible **reforms to the structure of the EU's banking sector**, under the chairmanship of Erkki Liikanen. Its mandate was to determine whether, in addition to ongoing regulatory reforms, structural reforms of EU banks would strengthen financial stability and improve efficiency and consumer protection, and if that is the case to make proposals as appropriate. The Group presented its final report to the Commission on 2 October 2012[73] (see chapter 3 for further discussion of such reforms).

In 2013 the Commission services are working on a **Bank Account Package** which will tackle the concerns of the 2007 Commission retail banking inquiry and will build on further research undertaken by the Commission more recently, which pointed to the existence of obstacles to customer choice and mobility. These included the lack of transparency and comparability of bank fees and complexity of the switching process for consumers when they intend to change their bank account providers. A third problem concerns the difficulties faced by a significant number of EU citizens in accessing basic banking services.

Finally, following the recent manipulation of LIBOR, the Commission launched in September 2012, on top of the Regulation on market abuse and the Directive for criminal sanctions for market abuse, a consultation inviting stakeholders to comment on possible **new rules for the production and use of indices serving as benchmarks** in financial and other contracts. It is analyzed in the next subsection.

2.4.3 Ensuring a level playing field across sectors, the example of financial benchmarks

Benchmarks are a statistical measure, calculated from a representative set of underlying data, typically used as a reference price for financial or other contracts. A wide variety of them are currently produced for different purposes. They differ in the underlying data analysed, the methods employed to collect it, how the indexes are calculated and their ultimate use.

Financial benchmarks are not currently supervised or regulated. They are, nevertheless, widely used as an indicator of liquidity in the financial system and to price contracts globally. In this regard, the alleged manipulation of interest rate benchmarks (such as LIBOR, EURIBOR and TIBOR) that has been taking place even prior to the crisis has highlighted both their importance and vulnerabilities.

Manipulation of benchmarks can cause significant losses to consumers and investors and distort the real economy. Even the risk of manipulation or doubts about their integrity can undermine market confidence and cause significant disruptions in the proper functioning, stability and confidence of financial markets. Because of this, regulators across the world have taken steps to restore market confidence and address possible criminal behaviour:

- In March, the U.S. Securities and Exchange Commission, Commodity Futures Trading Commission and Department of Justice, together with the U.K.'s FSA and the Japanese Financial Supervisory Agency first announced their on-going investigation to determine whether some banks had submitted inaccurate data to LIBOR for their own benefit. In parallel, the Commission is also investigating possible cartel abuses in relation to EURIBOR and LIBOR.

[73] http://ec.europa.eu/internal_market/bank/docs/high-level_expert_group/report_en.pdf

- In June, the IOSCO Board Level Task Force on Financial Market Benchmarks published a report and will issue recommendations in 2013, following a request by the FSB.
- In July, the European Commission proposed to amend its existing proposals for market abuse Regulation (MAR)[74] and criminal sanctions for market abuse Directive (CSMAD)[75] to clarify that benchmark manipulations are clearly and unequivocally illegal and can be subject to administrative or criminal sanctions.
- Also in July, the Chancellor of the Exchequer of the UK commissioned a review of the structure and governance of LIBOR and the corresponding criminal sanctions regime to Martin Wheatley, which was published in September 2012. It includes a 10-point plan for comprehensive reform of LIBOR which is now part of the upcoming Financial Services Bill.
- In September, the European Commission launched a public consultation on a possible framework to regulate the production and use of indices serving as benchmarks in financial and other contracts. Changing the sanctioning regime, as proposed in July, was not considered sufficient to improve how benchmarks are produced and used. For this reason, the consultation addressed key issues and shortcomings in the production and use of benchmarks to assess and ensure their future integrity.
- Finally, also in September the Economic Consultative Committee of central banks governors set up a senior officials group to study benchmark issues and consult the market in order to provide input for further discussions at FSB and G20 level.

In this, as in several other instances, there is a need to reinforce regulatory practice to address instances when financial stability and competition policy are both at stake.

2.5 CONCLUDING REMARKS

A lot was achieved during 2012: the launching of the banking union project and substantive progress on the financial reform agenda fully in line with G20 commitments. Nonetheless, the effects of the financial crisis are still having a very considerable impact on the European economy. In this regard, the first priority of the Commission has been to reinstall confidence: taking the necessary steps towards financial stability and to avoid a similar crisis in the future. Confidence is therefore necessary to put Europe back on the path of a smart, sustainable, inclusive growth, improving its competitiveness vis-à-vis the rest of the world.

At the same time, the banking sector is changing and opportunities are arising for institutional investors (insurers and pension funds) as well as for financial market intermediation to fill the gaps left by banks in what concerns the financing of the real economy and in particular long term finance, with a particular focus on SMEs, which account for more than 98% of Europe's business and provide more than 67% of its jobs.

[74] Amended proposal for a Regulation on insider dealing and market manipulation, COM(2012) 2011/0295 (COD)
[75] Amended proposal for a Directive on criminal sanctions for insider dealing and market manipulation, COM(2012) 2011/0297 (COD)

Additionally, the capacity of the economy to finance productive investments depends on its capability to generate and mobilise savings and attract foreign investments, as well as to channel the funds effectively and efficiently to the right users and uses.

In December 2011, the Commission adopted an action plan to improve access to finance for SMEs, which showed the breadth of the proposed legislation, financial instruments and policy measures. As explained in the previous section, and to give some examples, the Commission has drafted proposals for the creation of a EU regime for Venture capital and Social Entrepreneurship Funds; MiFID II will create an SME market regime; the Transparency and Prospectus Directives will reduce the burden and costs for SMEs; and the Market Abuse Directive will reinforce regulators' investigative and sanctioning powers. The focus now is, therefore, on ensuring that financial reform stimulates lending to the real economy; to long term financing and SMEs (see chapter 5, for a related discussion).

It is in this context that the Commission published at the end of March a Green Paper on the **Long Term Finance of the European Economy**[76], to ensure that Europe continues advancing towards growth.

[76] http://ec.europa.eu/internal_market/consultations/2013/long-term-financing/docs/green-paper_en.pdf

CHAPTER 3: STRUCTURAL REFORM IN THE EU BANKING SECTOR: MOTIVATION, SCOPE AND CONSEQUENCES

3.1 CONTEXT

Many banks and types of business models have been affected in the crisis. The main EU bank failures have been attributed to an overreliance on short-term wholesale funding, excessive leverage, excessive trading/derivative/market activity, poor lending decisions due to aggressive credit growth, or weak corporate governance (see Liikanen (2012)).

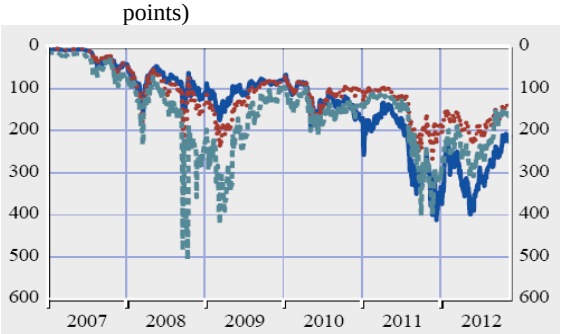
The current EU financial system is characterised by relatively few large, interconnected and diversified banking groups. Whereas several large EU banking groups have weathered the crisis well, the EU financial system as a whole would have likely imploded due to a system-wide cascade of banking failures without the extraordinary and on-going taxpayer, government and central bank support (European Commission (2011, 2012)). The (contingent) taxpayer support to date amounts to 40% of EU GDP (€5.1 trillion parliamentary committed aid measures) and has undermined the solidity of several Member States' public finances. In the case of some Member States it has contributed to turn a banking crisis into a sovereign crisis (European Commission (2011, 2012)). This has had the effect of further increasing the fragility of the banking system since banks hold large volumes of sovereign bonds on their balance sheet - and hence confidence on these banks depends on the robustness of the public safety nets).

Five years after the start of the financial crisis, price-to-book ratios are still at historically low levels (Chart 3.1.1). Sector-wide CDS spreads still exceed Lehman Brothers era levels and suggest that the EU banking sector remains fragile (Chart 3.1.2). Investors still seem to doubt the solidity of several large EU banks, some of which remain reliant on significant (explicit and implicit) state and central bank support. Interbank markets, once among the most liquid and deep markets globally, have not fully recovered. Banks are still highly leveraged and aggregate balance sheet restructuring and deleveraging has been modest to date. Banking sector concentration has also increased since the onset of the crisis.

Chart 3.1.1: **Average price-to-book ratio of large, complex banking groups** (2006-2012)

Notes: Dark blue full line: euro area banking groups; light blue dashed line: US banking groups; red dotted line: UK and Swiss banking groups.
Source: ECB Dec 2012 Financial Stability Review (page 64).

Chart 3.1.2: **Average 5-year CDS spread of large, complex banking groups** (2006-2012; basis points)



Notes: Dark blue full line: euro area banking groups; light blue dashed line: US banking groups; red dotted line: UK and Swiss banking groups.
Source: ECB Dec 2012 Financial Stability Review (page 64).

In this economic context, international institutions have called for a broad and global debate on bank business models[77] and several EU Member States (UK, FR, DE, NL, etc.) and international partner countries (US) have embarked on structural reform agendas to address the lingering problems in the banking sector. The High-level expert group (HLEG) on structural reforms of the EU banking sector, chaired by Erkki Liikanen, also recommended a package of structural and non-structural reform measures in its final report of 2 October 2012 (Liikanen (2012)). Box 1 briefly reviews these initiatives. In all cases, structural reform proposals would typically affect few banking groups only.

This chapter aims to take stock of the on-going debate that is currently taking place in international forums and several Member States, in some cases at an advanced stage, as regards the merits or otherwise of structural measures affecting large, complex and interconnected financial institutions, sometimes referred to as too-important or too-big to fail banks. In addition the chapter emphasises that any impact assessment must take into account the combined impact, both positive and negative, of alternative structural reform measures and complementary regulation affecting banks, already adopted or in the pipeline (notably CRD IV, recovery and resolution frameworks, and Banking Union).

The immediate objective of the chapter is essentially informative and pedagogical: it seeks to make accessible to the general public the arguments advanced by proponents as well as critics of structural measures affecting large interconnected and complex banking groups. This would also allow stakeholders, including citizens, to meaningfully engage and contribute to the debate. It follows that this chapter does not take position on any matter and merely raises the issues an exposes the arguments that require the particular attention of regulators and stakeholders. In doing so it also provides a roadmap for on-going efforts of the Commission services to undertake an in depth, comprehensive and robust impact assessment of alternative structural reform measures.

3.2 FINANCIAL STABILITY RISKS LINKED TO LARGE AND DIVERSIFIED BANKING GROUPS

3.2.1 Large EU banking groups are often complex, interconnected and prone to conflicts of interest

The EU financial system is characterised by the presence of relatively few large, banking groups[78], which are active in commercial banking (deposit taking and lending to individuals and

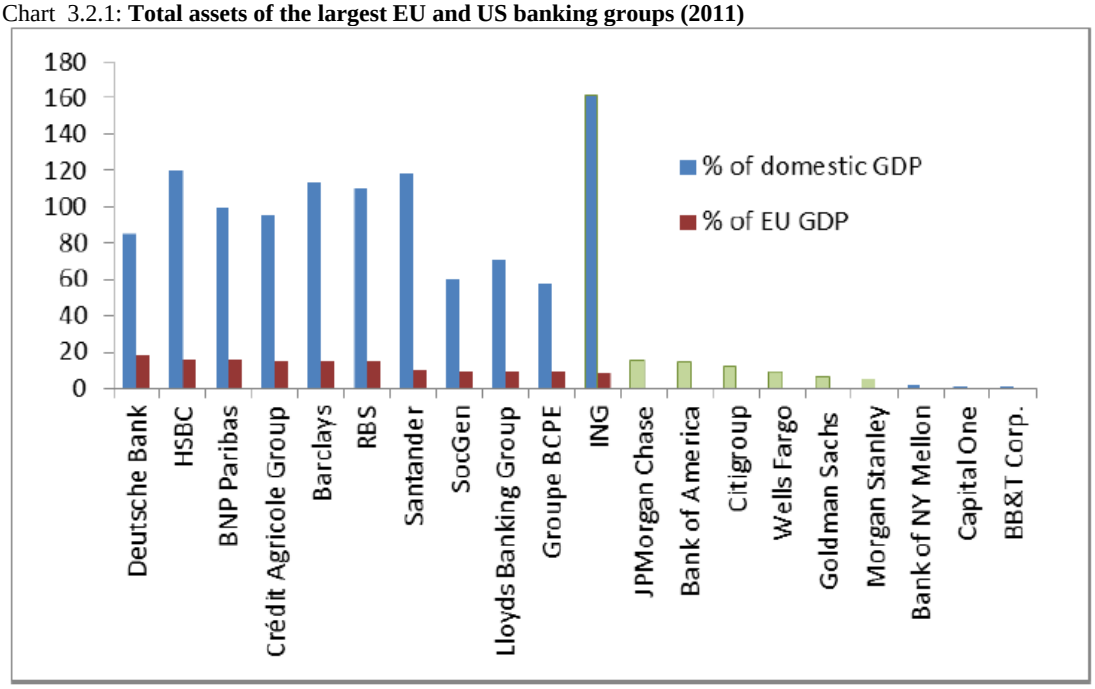
[77] "*Despite much progress on the reform agenda, reforms in some areas still need to be further refined by policymakers. These areas include a global-level discussion on the pros and cons for direct restrictions on business models.*" (IMF (2012), summary of Chapter 3). "*The question is whether there is a better way, via leverage rules or rules on the structures of large conglomerates, to ensure volatile investment banking functions do not dominate the future stability of the commercial banking and financial intermediation environment that is so critical for economic activity.*" (Blundell-Wignall et al. (2009)).

[78] The dominant regulatory and legal model for banking groups in the EU is the universal banking model, whereas it is the holding company model in the USA. EU *universal banks* typically combine retail and commercial banking activities and wholesale and investment banking activities in one corporate entity, with other activities, notably insurance, carried out in wholly owned but separately capitalised subsidiaries. US *financial holding company structures* typically have a single holding company that typically holds all shares of the separately capitalised subsidiaries, which cannot combine commercial and investment banking activities within the same subsidiary. There is typically complete legal separation between the parent and the subsidiaries, and in case the holding company is non-operating, there is also operational independence and the latter acts solely as an investment company. Under a holding company structure, a group is headed by one entity which does not itself conduct any business but simply owns a series of other businesses and co-ordinates their

businesses), traditional investment banking (security underwriting and advisory services), asset and wealth management services, and capital market and trading activities such as market-making, brokerage services, securitisation, proprietary trading, etc. Several of them form financial conglomerates that are also active in insurance.

Prior to the crisis, these large EU banking groups rapidly increased in size, scope and complexity. At the end of 2011, the ten largest EU banking groups *each* had total on-balance-sheet assets exceeding 1000 billion euro. Chart 3.2.1 illustrates that several large EU banking group balance sheets on their own exceed the GDP of the country where they are headquartered, unlike their US peers. This is a problem as long as true resolution of banks in trouble is solely domestically handled by each Member State separately. Claessens et al. (2010) document that the geographic scope of large European banking groups is also relatively broad, as they hold a far larger percentage of their assets abroad, compared to North American or Asian banking groups. In 2007, EU banking groups held 65% of their total assets outside the domestic market (of which 31% in other EU Member States and 34% outside Europe). The equivalent foreign assets amount to 32% and 26%, respectively, for American and Asian banking groups.

Chart 3.2.1: **Total assets of the largest EU and US banking groups (2011)**



Source: Data from SNL Financial. Eurostat for GDP data.

Source: Liikanen (2012)

Functional and national regulators often employ structural separation as a means of regulating, supervising, and monitoring different parts of a large banking group. Beyond that, large EU banking groups face few restrictions as to how they choose to structure themselves legally, economically, and operationally. They typically comprise of a complex web of legal entities and intra-group relationships. Several of the large groups contain more than 1000 distinct legal majority-owned subsidiaries, and some are active in 60 or more different jurisdictions. Large EU

strategies. *Parent-subsidiary structures* may consist of a parent bank that operates directly, with separately capitalised subsidiaries carrying out separate activities.

banks stand out in organisational complexity compared to non-financial sectors.[79] In general, the more complex the industry, the greater the challenges for prudential regulation.

Large EU banking groups are highly connected to each other through interbank borrowing and lending and derivatives markets, although the size of economic exposures is often mitigated by collateral and netting.[80] In normal times, institutions' interconnectedness may stem from the efficient allocation of capital within the Single Market. In times of crisis, interconnectivity may diversify risks. However, it may also facilitate contagion, also within banking groups. This potential for contagion due to interconnectedness (in turn due to liquidity hoarding, counterparty losses, informational contagion, fire sales or exposure to common creditors) is the essence of systemic risk.

Intra-group support measures vary from institution to institution, driven by the regulatory, legal and tax environment, the management style of the particular institution, and the cross-border nature of the business.[81] Intra-group exposures/transactions may be put in place to (i) promote group business activities, (ii) enable the group to operate on an integrated basis across different legal entities, (iii) support entity credit ratings in a group and therefore ensuring competitive financing terms for entities of the group, (iv) promote the efficient use of the group's capital resources across the different legal entities, and (v) manage and provide liquidity and capital resources across the group (BCBS (2012)).

Notwithstanding their potential economic and commercial benefits, both intra-group exposures/transactions and support measures can, in certain circumstances, adversely affect the solvency, liquidity and profitability of individual entities within a group. Intra-group support measures complicate the resolution and recovery process in the event of failure. Financial groups which failed in the crisis typically had to consider the question of whether to support a subsidiary or related entity. Although these decisions largely hinge on the potential damage to franchise and reputation, the starting point for making such decisions is based on intra-group contractual and legal obligations. The level of intra-group support and interconnectedness of legal entities within the group affects the extent to which the failure of one entity raises contagion risk for other entities within the group. It also increases the supervisory challenges (BCBS (2012)).

Conflicts of interests within large banking groups are typically addressed through Chinese walls, codes of conducts, compliance audits, and disclosure of potential conflicts of interest. That said,

[79] Herring and Carmassi (2010) find that the sixteen largest financial institutions on average have 2.5 times as much subsidiaries as the sixteen largest non-financial firms at end 2007. The literature lists a number of plausible drivers of organisational complexity, notably mergers and acquisitions, a desire to reduce tax liabilities, and regulatory requirements. Multinational banks have numerous opportunities to reduce their tax burden in high-tax countries through intra-firm transfer pricing. Herring and Carmassi (2010) find that six of the sixteen largest global financial institutions each have more than 100 subsidiaries located in tax havens, three of them have located approximately 20% of their subsidiaries in tax havens.

[80] For monetary financial institutions (MFIs) in the euro area, roughly one quarter of total balance sheet size reflects direct exposure to other euro area MFIs (Buiter and Rahbari (2012)). Financial institutions can be connected directly, but also indirectly. Indirect exposure follows from common risk exposures or from informational or reputational contagion.

[81] The most transparent form of intra-group exposure is a credit or a line of credit which either the parent grants to a subsidiary or one subsidiary makes available to another subsidiary. Intra-group exposures also originate in other ways; for example through (a) intragroup cross shareholdings; (b) trading operations whereby one group entity deals with or on behalf of another group entity; (c) central management of short term liquidity within the group and (d) guarantees and commitments provided to or received from other companies in the group.

the possibility that conflicts of interest[82] arise is greater if the institution provides multiple financial services[83].

3.2.2 Taxpayer support and implicit subsidies to the banking sector

It has been argued that implicit and explicit public safety nets allow banks to enjoy significant benefits, as their funding costs are artificially lowered given that creditors price in the lower credit risk. The implicit support can manifest itself in higher credit ratings of banks, which typically involve a "stand-alone rating" and a "support rating". Whereas the former assesses the bank's creditworthiness by looking at the business model and net cash flow generation of the business activities as such, the latter in addition takes into account the extent to which the bank implicitly enjoys backing from the state when in need (in practise, abstraction is made from possible parental or cooperative support to isolate the sovereign support). Prior to the crisis, the 29 most systemically important global banks[84] benefitted from just over one notch of uplift from the ratings agencies due to expectations of state support. Today, those same banks benefit from around three notches of implied support on average. According to a number of researchers and regulators expectations of state support have risen substantially since the crisis began (Ueda and di Mauro (2012), Haldane (2010b, 2012)).

Implicit subsidies[85], are estimated to be significant in absolute level and when compared to average sector profitability, but they are hard to pin down with great precision. According to several studies they are estimated to mainly benefit the largest banks.[86] Importantly, implicit

[82] It is sometimes argued that Cultural differences can materialise between retail and investment banking, but also within retail banking and within investment banking as such. In the retail bank, sales people and relationship managers may face different incentives. Within investment banking, traders and advisors or analysts may also have a different mind-set. Conflicts of interests can arise in investment banking, if a bank serves two client groups with opposing interests. For instance, when investment banks advise companies on whether to raise equity they stand to earn substantial fees as underwriters. At the same time, when banks advise companies on the issue price for the new shares they benefit from higher discounts as this decreases the risk of low take-up. Also, banks have an incentive to hedge their risk as underwriters, guaranteeing the proceeds of the share issue, but this may potentially have an adverse impact on their clients' share price. Issuers benefit from high prices and optimistic research, while investors want low prices and neutral research.

[83] Fecht et al. (2010) report empirical evidence for the German banking sector that proprietary trading can negatively affect retail customers. Stocks sold to retail customers underperform compared to other stocks in the bank's proprietary portfolio and other stocks in the households' portfolios. Customer portfolio performance is also significantly worse in banks that do proprietary trading. They argue that conflicts of interest are at the source of these findings.

[84] The list of G-SIFIs is established by the Financial Stability Board, based on how banking groups score with respect to their size, interconnectedness, global activity, complexity, and lack of readily available substitutes for the services provided. Of the 2011 list of 29 banking groups, 15 are European banking groups. Of the November 2012 list of 28 banking groups (Dexia, Commerzbank and Lloyds were delisted, whereas BBVA and Standard Chartered were added), 14 are EU banking groups.

[85] *Explicit* subsidies (such as the explicit insurance of deposits below a certain level) are typically capped in size and can in principle be recouped by introducing adequate pricing of the guarantee or taxation of the beneficiary bank. However, an adequate pricing of deposit insurance is not feasible, given the complexity and fluctuating riskiness of a bank's activities. Demirgüc-Kunt et al. (2005) find that deposit insurance underpricing seems to be the rule rather than the exception. *Implicit* subsidies are not equally transparent (in terms of their terms) and reflect a transfer of resources from taxpayers to the financial sector. The ultimate distribution of implicit subsidies to bank creditors, bank shareholders, staff and clients depends on the underlying competitive structure of the banking industry.

[86] See Noss and Sowerbutts (2012), Oxera (2011), Schich and Lindh (2012), Schich and Kim (2012), Haldane (2012), Alessandri and Haldane (2009), and Ueda and Mauro (2012). Estimation methodologies belong to two groups. First, "funding advantage" models, i.e. ratings-based approaches that focus on the difference between support and stand-alone credit ratings. Second, "contingent claim" models, i.e. option pricing approaches that focus on the resemblance of implicit subsidies to put options or look-back options and model them accordingly. Evidence for the largest 26 global banks

subsidies and the advantages inferred from being state backed are seen to be higher the lower the bank's stand-alone creditworthiness, the higher the creditworthiness of its sovereign and the relatively bigger the bank in its domestic context, as banks' stand-alone creditworthiness is upgraded more and funding costs lowered more, correspondingly (Schich and Lindh (2012)). Some of the subsidies have declined in more recent years, thanks to the introduction of effective and credible resolution regimes (e.g. UK, DK), due to a worsening of the creditworthiness of the sovereign creditor (e.g. IE, EL, ES, PT), or following concrete proposals and government endorsement of structural reform initiatives (e.g. UK)[87]. In other Member States they have not or hardly decreased (e.g. DE, SW, LU, FI, NL), or have in fact increased (e.g. BE, FR) (Schich and Kim (2012)).

In theory implicit subsidies can cause three types of distortions. First, implicit subsidies may create competitive advantages to beneficiary banks by lowering their funding cost. Beneficiary banks would benefit at the expense of banks that do not enjoy the implicit subsidies. As the biggest banks would likely receive the largest subsidies, this would entrench the too-big-to fail banks, and induce a competitive barrier for smaller banks. Second, as with any safety net or insurance without co-insurance and/or at a too low price, implicit subsidies may increase banks' risk taking (moral hazard). Furthermore, a negative spiral may also develop as the existence of implicit subsidies incentivises banks to take more risk (given the asymmetry in payoffs: gains would be privatised and losses socialised) which increases the cost of bank failure and which further increases the implicit subsidies. Third, implicit subsidies tend to increase the size of the financial sector in aggregate and may divert scarce resources away from other sectors of the economy.

3.2.3 Safety-net induced moral hazard

Deposit-taking banks are by construction vulnerable to depositor runs. When a confidence crisis occurs and depositors withdraw their savings, banks are forced to liquidate illiquid long term assets at a loss (Diamond and Dybvig (1983)). To avoid such confidence crises and the corresponding runs and losses, public safety nets such as deposit insurance and lender-of-last-resort facilities have been introduced. The first were introduced in the wake of the 1929 Great Depression, and by now public safety nets exist in more than 90 countries worldwide. Following a Directive from the European Commission on 12 July 2010, the level of deposit protection was significantly increased in the EU from a minimum of €20 000 to a uniform level of €100 000 (with a maximum pay-out delay of 7 days).

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suggests an average credit rating uplift in the 2007-2009 period of approximately 2.5 notches (i.e. support rating are 2.5 notches above stand-alone financial strength ratings). Funding cost advantages are not negligible and may exceed 100 basis points, depending on the time period and stand-alone rating. Within a given country, the majority of the subsidies are enjoyed by the largest banks. UK bank evidence for the period 2007-2009 suggests that small and medium sized banks only received 8.5% of total estimated implicit subsidies for UK banks, compared to 91.5% for the top 5 UK banks (Haldane, 2010b).

[87] Moody's (2011) stated on the UK ring-fence plans that "*the ring-fencing proposals would likely lead to a further reduction in our assumptions of systemic support*". JP Morgan (2011) analysts stated that "*ring-fencing of retail operations will be a transformational change for the UK banks and will most likely lead to the undermining of the sector ratings, particularly for the entities excluded from the retail ring-fence*", and anticipate that "*the ratings associated with the non-ringfenced entity should tend towards the stand-alone ratings of such institutions*". HSBC (2011) reached a similar view.

Public safety nets have important advantages. They avoid self-fulfilling confidence crises and various forms of contagion, prevent wide-scale collapse of the intermediation services of the banking sector, and facilitate the ability of banks to engage in effective maturity transformation (liabilities can be short-term in the presence of deposit insurance, whereas assets can be long-term in the presence of the emergency liquidity assistance).

Safety nets increase bank margins and charter values, which may dampen risk taking incentives, as banks have more to lose. However, public safety nets may also incentivise banks to expand their balance sheets and take excessive risks with the funds made available to them ("moral hazard").[88] Safety nets take away disciplining incentives of depositors and/or bank creditors and lower the bank's cost of capital (funding cost), which allows banks to expand.[89] Hence, in the absence of adequate supervision and regulation, safety nets indirectly allow banks to leverage up more easily than would be possible otherwise. High leverage in combination with limited liability incentivises risk-taking by banks, as upside gains are being privatised, whilst downside losses may end up being socialised. Dam and Koetter (2012) use pre-crisis German banking data to show that significant increases in expectations of bailouts for banks lead to significant increases in risk-taking by banks.

To curtail the excessive risk-taking and expansion of banks that may result from the existence of the public safety nets, banking activities have always been heavily regulated and supervised. In fact, when the US introduced the very first set of safety nets, it paired it with a battery of regulation including (i) the prohibition of deposit-taking banks to underwrite or deal in securities, (ii) the limitation of access to deposit insurance and lender of last resort facilities to commercial banks, and (iii) the introduction of a saving deposit rate ceiling to avoid destabilising competition amongst banks (1933 Banking Act in the USA - so called Glass-Steagall Act). The justification for introducing structural separation of commercial and investment banking activities alongside with the safety nets was to (i) reduce depository institutions' ability to engage in risky securities activities, (ii) prevent managers of depository institutions to enter markets that are focused on risk-taking, (iii) prevent inherent conflicts of interest, and (iv) reduce the financial power of depository institutions. More recently, risk-based capital and liquidity requirements (capital adequacy regulation) have been introduced.[90]

In the wake of the Great Depression, several EU Member States, amongst others Belgium, France, and Italy, introduced structural separation rules similar to the Glass-Steagall Act.[91] Subsequent

[88] Ultimately, the net effect of safety nets on bank risk taking is theoretically ambiguous and depends on the relative empirical importance of the two channels. Gropp et al. (2010) find that government guarantees are on balance associated with strong moral hazard effects.

[89] It is implicitly assumed that an adequate pricing of the deposit insurance is not feasible, given the complexity and fluctuating riskiness of a bank's activities. Demirgüc-Kunt et al. (2005) find that deposit insurance underpricing seems to be the rule rather than the exception. See Admati and Hellwig (2013) for a good review of why banks chose to become big through increased leverage.

[90] In 1988 a first-ever, landmark, genuinely international prudential regulatory agreement "International Convergence of Capital Measurement and Capital Standard" was reached. Basel 1 has been amended and revised in 1996, 2004 (Basel 2), 2009 (Basel 2.5), and 2010 (Basel 3).

[91] The first structural rules introduced in Belgium date back to 1934 and 1935 (Royal Decree n°2 of August 22, 1934; Royal Decree n°180 of July 9, 1935). "Mixed" banks were required to separate their deposit taking activities from their investment banking activities. Banks were prohibited from holding shares of industrial and commercial companies. Bank managers were prohibited from holding concurrent executive functions in other companies (National Bank of Belgium

reforms removed restrictions on mixing bank and securities activities. In several Member States structural rules still apply, but often limited to specific activities such as housing finance and mortgage banks (Bausparen, covered bond issuance, etc.). Moreover, under current EU legislation, banking and insurance activities are being prohibited from being supported by the same pool of capital in all EU Member States.

3.2.4 Moral hazard concerns amplified through the changing nature of banking

Bank balance sheets grew in the decades prior to the 1980s, in tandem with real economic growth. However, as of the 1980s, bank balance sheets started to increase more rapidly, significantly outpacing GDP growth, and hence total assets to GDP started to increase noticeably. Over the same time period that banks grew remarkably in size and importance, the resilience of banks, i.e. their ability to absorb solvency and liquidity shocks, decreased (risk-unweighted capital ratios and liquidity ratios dropped continuously to historically low levels). Allessandri and Haldane (2009) document these long term trends for the UK banking sector. They first show that the aggregate UK balance sheet remains roughly stable at 50% of GDP for the century between 1880 and 1980, after which it started to grow quickly to reach more than 500% of UK GDP before the crisis struck. The developments in the UK reflect a broader trend in Europe. In some Member States, the banking sector grew even more quickly, but in many Member States, growth was more modest. On average, total assets of the EU banking sector have stabilised around 370% of GDP (Liikanen (2012)).

The underlying drivers of the 1980s structural break that triggered banks' expansion are globalisation, technological innovation (securitisation, IT, etc.), deregulation, and increased competition. Prior to the 1980s, commercial banks could be characterised by a "originate and hold" banking model, which generally refers to a long-term oriented, customer relationship-based banking model, where loans are granted and held until maturity, and where bank funding is mainly derived from insured deposits, rather than tradable wholesale market instruments. Banks were largely focussed on generating net interest income. The relationship-oriented model encouraged banks to originate loans and to gather information and monitor ultimate borrower performance, as the interests of the bank and its customers were typically aligned (the bank does well if the borrower does well and is able to pay off his loan).

As of the 1980s, commercial banks increasingly moved away from a "originate and hold" banking model towards a so-called "originate and distribute" or transactions-oriented model (see Acharya et al. (2009), Buiter (2008)). The "originate and distribute" banking model refers to the banking model in which granted loans are pooled, securitized and sold to investors. The shift in model is associated with an increased reliance on capital markets for funding[92]... More emphasis is put on non-interest income, as income is derived to a significant extent from fees and trading. Information and principal-agent problems become more important, as the interest of the bank and its clients are no longer necessarily aligned.

(2012), Box 2). In France, the 1984 Banking Act recognised the principle of universal banking and eliminated many restrictions on bank lending and on the lines of business different types of banks were permitted to transact. The separation principle in Italy is regulated in Article 19 of the Legislative Decree no. 385 of September 1, 1993 (Single Banking Act).

[92] According to Shin (2012) the "originate and distribute" model facilitates bank expansion and risk-taking

The shift in the business model increases banks' connections to and importance of the shadow banking sector. Banks became part of a long intermediation chain, rather than linking ultimate savers directly to ultimate borrowers (Adrian and Shin (2010b)).[93] Increased leverage in the financial sector largely took place outside the traditionally funded commercial banks, in investment banks, hedge funds, private equity funds and a whole range of new financial institutions (SIVs, conduits, etc.), often using new securitisation-based instruments (Shin (2012)). The banking sector has become as large as it is following a lengthening of the intermediation chain, increased interconnection and trading activity. Trading, capital market activities, and (selected) other investment banking activities are deal-by-deal and transactions-based, short-term oriented, scalable, and sometimes subject to significant tail risk even for individual transactions. Arguably, banks have become larger, more complex and interconnected with an increased focus on short-term profits, in part as a result of shareholder pressure and short-term performance-based managerial compensation schemes or accounting practices such as day one profit recognition. There has been a pre-crisis trend among the biggest European banks to strengthen the focus on investment banking, including capital market and trading activities, and to increase their reliance on wholesale funding.

At heart, the banking crisis was triggered by a sudden and generalised freeze in interbank markets. Institutional short term wholesale market creditors refused to roll-over their credit lines (a "run on repo" as described in Gorton (2010)).[94] The traditional "bank run" triggered by retail depositor withdrawals as in the Great depression and several other subsequent banking crises did not occur or only as an aftermath event. Northern Rock (NR) for example faced a run by retail depositors on 14 September 2007, but the unprecedented images of people queuing in the streets to collect their savings concealed the fact that the true run on Northern Rock took place at least a month earlier, when institutional investors refused to roll over their exposures to the bank and the FSA and Bank of England were alerted by the NR management of their acute funding difficulties (see Shin (2009)). The NR balance sheet had grown 23% per year during the period 1998-2007. Such rapid growth could not have been funded with retail deposits. Retail deposit funding in fact dropped from 60% of total liabilities to merely 23% in 2007. The depositor run itself was partially triggered by the design of the UK deposit guarantee scheme, which had introduced co-insurance, inducing depositors to run in order not to lose even a small share of their deposits (depositors were fully insured up to 2000 pounds only, and up to 90% for amounts in between 2000 and 35000 pounds).

[93] Rather than simply taking deposits and making mortgages, a long chain of interconnected institutions arises. The mortgages are kept on the asset side of a mortgage pool that issues mortgage backed securtities (MBS). This paper is bought by an issuer of asset backed securities (ABS), who issues tranches of collateralised debt obligations (CDOs) in order to finance it. Investment bank holds some of this profitable ABS paper and finance it through collateralized borrowing (repo). Commercial banks make reverse repos and secure their funding short term by issuing commercial paper (CP). Money market mutual funds buy the CP and issue shares to the households that have excess savings. Note that the intermediation chain can be much larger, as ABS can be repoed multiple times, for example. And investment or commercial banks can set up conduits and SIVs in order to finance the direct holding of CDOs and other ABSs.

[94] Likewise, just before its demise Lehman Brothers relied on overnight repo borrowing (collateralised short term wholesale market borrowing) up to one quarter of its massive balance sheet (Adrian and Shin (2010a)). Put differently, Lehman Brothers had to roll over one quarter of its massive balance sheet *overnight*. Admati and Hellwig (2013) discuss the underlying incentives for banks to increasingly rely on short-term debt ("maturity rat race") and link it to the presence of the safety nets, the resulting debt overhang problem, and the incentives for creditors to protect themselves by lending at increasingly short term maturities.

It is necessary for any bank to hold marketable securities (such as sovereign bonds or other widely traded securities) on its balance sheet regardless of its business model in order to manage the maturity gap between illiquid loans and liquid deposits or other funding. Even a pure retail bank thus needs to hold a significant share of liquid assets in reserve to protect against a sudden decrease in deposit funding (cf. CRDIV – LCR). Similarly there are risk management advantages to be gained from wholesale funding. Issuing long-term bonds allow a bank more freedom in managing the maturity profile of its liabilities than if they were using deposit based products alone, thus reducing risk. Even short-term wholesale funding has a utility in permitting banks to manage temporary funding mismatches that arise due to normal fluctuations in deposits and other funding sources. The risks with wholesale funding arise when a bank relies too heavily on it, especially if it is on shorter maturities. The LCR and NSFR (still under debate) introduced in Basel III aim to counter these risks.

Excessive trading and market-based activity has been an important risk factor in this crisis.[95] Market-based activities (trading in, or holding, securitised debt instruments) contributed to the failures of major banks in Europe (amongst others RBS and Fortis) and of both investment and commercial banks in the USA (amongst others Lehman Brothers, Merrill Lynch, Washington Mutual). The majority of the large and complex EU financial institutions that received state support in 2008 and 2009 had above average trading income to total revenue ratios. Chow and Surti (2011) analyse a sample of 46 large and complex EU banking groups. 25 banks had trading income to total revenue ratios that exceeded the average ratio plus one standard deviation. 18 of those 25 "vulnerable" banks were effectively part of the sample of 23 banks that received official support in 2008/2009.

Boot and Ratnovski (2012) argue that the deepening of financial markets in the last 10 to 15 years has fundamentally destabilised banks by introducing a trading culture in large, complex and interconnected banking groups[96]. Specifically, such banks face incentives to use their franchise value and undrawn credit lines to trade on an excessive scale to make short term profits. More analysis is needed to confirm or invalidate such claims[97]

3.3 STRUCTURAL BANKING REFORM DEBATE IN THE EU

The EU banking sector has faced several problems in the run-up to and during the on-going crisis leading to economy-wide resource misallocation: moral hazard, high leverage and balance sheet expansion, lack of market discipline[98], lack of bank resolvability, implicit bail-out expectations, and competition distortions. Arguably, pre-crisis, regulation and supervision were also inadequate.

[95] Trading and lending are not entirely disconnected. The traditional originate-and-hold or relationship oriented model of banking has been shifting towards a originate-and-sell or transaction-oriented model of banking. Loans, previously illiquid, have been made more liquid through securitisation.

[96] See also Miller et al. (2013).

[97] To address this propensity to excessive trading within large banks and associated decrease in banking stability, Boot and Ratnovski (2012) suggest segregating resources by means of a firewalled subsidiary. This would put in place a more credible commitment that the relationship bank maintains sufficient capital within that part to continue to fully serve its customers and would ensure that the funding of the trading business is risk-sensitive. However, they find that banks may still be able to allocate too much capital to their trading subsidiaries, leaving lending constrained. They conclude that it is important to protect capital and risk bearing capacity of bank lending operations. For this, trading within bank groups may have to be limited or prohibited altogether (as proposed under the Volcker rule in the USA).

[98] For a useful review of the literature on the ability of bank debt to discipline banks, please see Admati and Hellwig (2013).

According to proponents, structural reform has the potential to increase the effectiveness of the regulatory agenda without being detrimental for financial stability or economic growth.

3.3.1 Structural reform may enhance financial stability, incentives and market functioning

European banks have a relatively long history of combining commercial banking and investment banking in a single legal entity or in a combination of closely connected entities with limited restrictions on transactions between them – this "model" is loosely referred to as "universal banking", though large banking groups across Europe differ significantly in their core activities, nature and incidence of cross border operations, their internal organisational structure, management culture and strategy. Virtually all of the largest banks in Europe, however, benefit from access to intra-group deposit funding that is relatively stable, long in duration, not risk sensitive and explicitly guaranteed. The risks inherent in the banks' trading activities may not be fully priced into their funding costs. In that case this would increase the incentives for excessive trading risks. Proponents of structural reform argue that shielding guaranteed deposits from excessive risk-taking in trading would ensure that the funding provided to trading activities will reflect its inherent riskiness and will take away any undue artificial promotion of excessively risky activities. Without separate debt issuance for deposit-linked and other banking activities, the cost of debt will be a blended mix. It is the implicit taxpayer's subsidy associated with too-big-too-fail, not necessarily increased efficiency, what reduces the group's funding costs and gives rise to important distortions of incentives and competition.

Proponents of structural reform further argue that given the risks and costs of the safety net to society, banks should not indirectly use the safety net to artificially expand in risky activities that are not linked to "critically important and non-substitutable" banking activities. At their heart, banks carry out services that are essential to the economy, and continuation of these services is critically important, to the extent that these services cannot be substituted easily. There is no similar rationale for public funds protecting and subsidising for example proprietary and speculative trading activities.

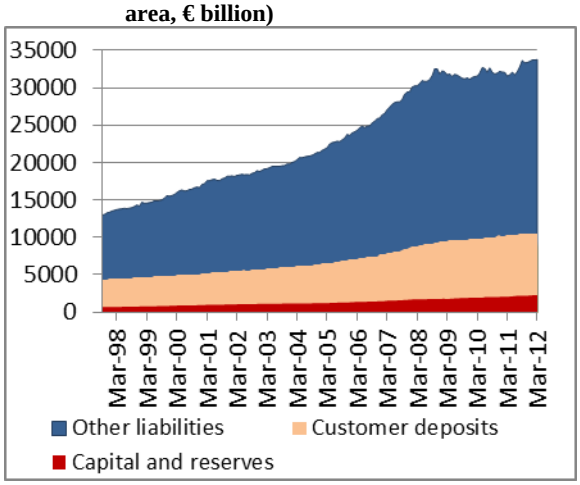
Bank balance sheets in the EU, particularly those of the largest banking groups, have significantly grown in the years leading up to the crisis (see charts 3.4.1 and 3.4.2 below taken from Liikanen (2012)). Much of the balance sheet growth volume that has taken place was driven by intra-financial business, rather than real economy lending. For the EU aggregate bank balance sheet, loans to households and NFCs only made up 28% of total assets in March 2012 (Liikanen (2012)). By reducing the likelihood that large banks engage on excessively risky trading activities on the back of the public safety net of deposit taking and other essential activities, structural reform, it is argued may re-introduce market discipline, which in turn would tend to limit the balance sheet growth and thereby partly ensure that banks to not become (or remain) "too-important-to-fail"[99].

In addition, proponents of structural reform claim that it has the potential to *directly* reduce excessive intra-group complexity, connectedness and inherent conflicts of interest within EU banking groups, thereby facilitating their management, regulation, supervision, and resolution.

[99] Demirguc-Kunt and Huizinga (2013) find evidence that a bank's market-to-book ratio is negatively related to its size compared to the home country GDP. They suggest that systemic banks that may have become too big to save can increase their value by downsizing or splitting up, in particular if they are located in countries with a weak fiscal position.

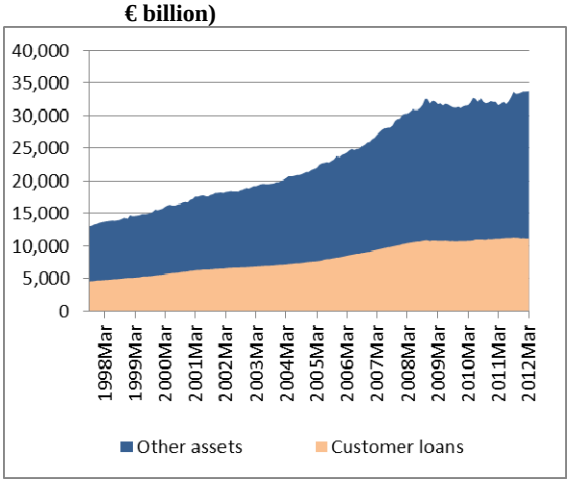
Structural reform has the potential to refocus banks on what is critically-important and on their key customer-serving role.

Chart 3.3.1: **Evolution of liabilities 1998-2012 (euro area, € billion)**



Notes: Customer deposits are deposits of non-monetary financial institutions excluding general government.
Source: ECB data.

Chart 3.3.2: **Evolution of assets 1998-2012 (euro area, € billion)**



Notes: Customer loans are loans to non-monetary financial institutions excluding general government.
Source: ECB data.

Complexity can impair the proper functioning of markets and creates several market failures (Schwarcz (2009)). The recent financial crisis has provided some support to the claim that complexity may not only hinder recovery and resolution in bad times, but it also tends to make it more difficult to manage, monitor and supervise the institutions in good times (Lumpkin (2011)). The price-to-book ratio of the group of large and complex EU banking groups currently hovers around 0.5, whereas it was as high as 2.0 in the run-up to the crisis. Part of that value destruction reflects the legacy of the past (potential further write-offs and possibly on-going forbearance), part may reflect weak perceived profitability going forward, and part may reflect the difficulty and uncertainty to value the individual components and the portfolio as a whole which constitutes a number of large banking groups.

Arguably, banking groups engaged in a variety of activities also require much more complex regulation and supervision. More simplicity in terms of corporate structure would normally allow simplifying regulation and supervision of banks, and potentially render supervision and regulation more effective. Likewise, the prudential regulation of banks is difficult for investors to understand. Accordingly, investors do not or are not able to fully exercise the "watch-dog" function under Basel's "pillar 3" (market discipline). Unsecured bank creditors and investors perceive modern banks as opaque and as black boxes and it is possibly for this reason, inter alia, that they have started to call for structural separation. Institutional investors voiced their concern that banks are too opaque and complex to invest in.[100] If this claim were confirmed there is a prospect that certain forms of structural reform could, in fact, improve banks' funding strains.

On the other hand, other stakeholders argue that structural reform cannot achieve its putative goals. Instead, they argue that structural reform will in fact reduce financial stability, as it will

[100] Investors that have replied to the Commission's consultation on the HLEG report chaired by Liikanen stated that "*All banks fail to provide sufficient transparency of their circumstances, meaning that investors tend to mistrust almost all of them with equal fervour*" (Hermes 2012, page 5).

create more homogeneous and less diversified banks that will be less resilient in times of stress and more prone to fail in a herd-like fashion. Moreover, structural reform would not avoid the collapse of a stand-alone, pure investment banks or retail banks, such as Lehman Brothers, Northern Rock, Spanish Cajas, etc. A further concern is that structural reform may not even achieve its aim of protecting the separated deposit-taking bank, due to reputational contagion or permeability of the separation rules. Finally, structural reform is unlikely to prevent that separated activities are bailed out when a crisis hits.

Structural reform design and implementation will be of critical importance. Structural reform is explicitly aimed at reducing interconnectedness and complexity, and hence the systemic importance of banks. However, regulation and supervision have been significant drivers of organisational complexity, so it is not straightforward that structural reform will simplify corporate complexity.

It is important to note that all national structural reform proposals to date explicitly seek not to undermine the efficiencies to the benefit of bank customers typically associated with the so-called universal banking business model. The UK comes forward with the most intrusive subsidiarisation approach in the EU but explicitly wants to allow for economies of scope across the different legal entities and for assistance provided to the deposit-taking entity by the other entity if need be (but not the other way around).

In theory, the most credible reduction of conflicts of interest could be achieved through ownership separation, as common ownership naturally creates incentives for management to attempt to maximise economic links and synergies (from the point of view of the bank) and it is arguably difficult for regulation and supervision to counter such incentives. But ownership separation may also entail important costs. A separation of culture often requires separate governance, risk and balance sheet management for the deposit-taking entity and the other entity. A number of respondents to the consultation following the Liikanen report have claimed that this may be compatible in a subsidiarisation approach without requiring full ownership separation.

Ceteris paribus, systemic risks should in principle shrink following structural reform, given that certain speculative activities will no longer be promoted artificially on the back of explicit or implicit guarantees, as is the case today, in particular if resolution and recovery is made more effective thereby sharpening market discipline. Moreover, if systemic risk would materialise nevertheless due to reputational contagion or other reasons, it would still be easier to perform crisis management and resolution of smaller, simpler and distinct legal entities. The options available to policymakers at the point of resolution will increase.

All the above considerations, both by proponents and critics of structural reform require careful analysis and scrutiny. In any event, one cannot consider it a panacea. On its own structural reform measures cannot resolve all problems related to excessive risk taking. Not coincidentally, several structural reform proposals currently under discussion are part of a package of measures that also includes higher loss absorption through increased capital requirements, strengthened risk weighting, bail-in instruments, etc. (Liikanen (2012), ICB (2012)). It follows that any impact assessment of the potential and likely benefits and costs of structural reform needs to take into consideration the complementarities (or lack thereof) with other regulatory measures already adopted or in the pipeline that will also influence the activities of banks.

3.3.2 Could structural reform support sustainable economic growth and jobs in the EU?

Amongst others, banks operate the payment system, make loans to households, businesses and governments, help households and businesses to manage their risks and accommodate their financial needs over time. The purpose of the financial sector and banks should be to serve the "real economy". A safe and sound banking sector is a pre-condition to fulfil these essential functions, serve the real economy, and allow for sustainable growth. Sustainable economic growth is what counts, not temporarily boosted artificial growth that results in booms and subsequent busts. As such, there is no conflict between stability and growth.

Banks need to focus first and foremost on providing basic access to finance for households, corporates and governments. However, customer loans currently make up only 28% of the aggregate EU balance sheet of monetary financial institutions (see chart 3.3.2). McKinsey (2013) finds that the growing size and leverage of the financial sector propelled much of the financial deepening that occurred before the crisis, but that financing for households and corporations accounted for barely one-fourth of the rise in global financial depth from 1995 to 2007. It is remarkable that there is a shortage of SME funding in the UK (Breedon (2012)), despite UK bank balance sheets adding up to 5 times GDP.

In principle, structural reform is aimed at directing bank capital and resources to those activities that finance the real economy. Proponents argue that without any structural separation, banks may be incentivised to allocate capital and human resources to trading and intra-financial activity and away from lending activity. Opportunities to engage in socially less useful activities in finance (speculation) can crowd out the provision of useful financial services (lending and banking services) or make them more expensive (Arping (2013)).

A significant part of taxpayer-subsidised pre-crisis activity of banks was intra-financial borrowing and lending that often involved excessive risk-taking.[101] The banking sector has become as large as it is following a lengthening of the intermediation chain, increased interconnection and trading activity (Adrian and Shin (2010)). For monetary financial institutions (MFIs) in the euro area, roughly one quarter of total balance sheet size reflects direct exposure to other euro area MFIs (Buiter and Rahbari (2012)). In part, deleveraging may be achieved by reducing intra-bank exposures, exposures between banks and shadow banks and between banks and other highly leveraged financial intermediaries, without necessarily being at the expense of bank funding of households and non-financial corporates. There is no reason why balance sheet reduction that

[101] Haldane (2010a) discusses the earnings of the financial sector in detail and concludes that "*risk illusion, rather than a productivity miracle, appears to have driven high returns to finance*". Philippon and Reshef (2008) study wages earned in the financial sector and conclude that a large part of the observed wage differential between the financial sector and the rest of the economy cannot be explained by observables like skill differences. Philippon (2012) provides a quantitative interpretation of financial intermediation in the USA over the past 130 years and concludes that "*…the unit cost of intermediation has increased since the mid-1970s and is now significantly higher than it was at the turn of the twentieth century. In other words, the finance industry that sustained the expansion of railroads, steel and chemical industries, and later the electricity and automobile revolutions seems to have been more efficient than the current finance industry. Surprisingly, the tremendous improvements in information technologies of the past 30 years have not led to a decrease in the average cost of intermediation, or at least not yet. One possible explanation for this puzzle is that improvements in information technology have been cancelled out by zero-sum activities, perhaps related to the large increase in secondary market trading*".

reflects the netting of intra-bank borrowing and lending needs to be at the expense of bank funding of households and non-financial corporates (Buiter and Rahbari (2012)).

According to some academic research, the benefits of more banking activity may not always compensate financial stability risks and other disadvantages. Cecchetti and Kharroubi (2012) empirically find that the enlargement of the financial system, beyond a certain the size, is associated with reductions in real productivity growth. This, in part, may be due to the financial sector competing with the rest of the economy for scarce resources. Arcand et al. (2012) also find that there can be "too much" finance. When private credit reaches 80% to 100% of GDP, which is largely exceeded for several crisis-affected EU Member States such as DK, NL, IE, CY, UK, ES, PT, further private credit is found to be negatively associated with GDP growth. The hypothesis is that excessively large financial systems may reduce economic growth because of the increased probability of a misallocation of resources, the increased probability of large economic crashes[102], or the endogenous feeding of speculative bubbles. Philippon (2008) observes that outstanding economic growth was achieved in the 1960s with a much smaller financial sector.

As shown in the on-going banking crisis, taxpayer bailouts often prevent the market exit of failing banks, rather than just ensuring the minimum possible (i.e. the continuation of critically important activities and services that cannot easily be provided through other players). To the extent that structural reform facilitates and enhances the effectiveness of bank resolution, exit barriers are being removed, which gives more opportunities for sustainable-successful banks that have a sound and prudent business model (European Commission (2011)).

Depending on its design, the impact of structural reform may not be innocuous. Stakeholders have voiced strong concerns that inadequate structural reform (i) may undermine some of the benefits typically associated with the universal banking business model, (ii) might make bank borrowing and hence lending more difficult and more expensive, and (iii) may put EU banking groups at a competitive disadvantage. These concerns are taken seriously and need to be analysed and scrutinised carefully.

3.4 HOW TO ASSESS THE POTENTIAL COSTS OF STRUCTURAL REFORM?

Structural separation may entail costs for banks, for a number of reasons; lost economies of scope (lost synergy/diversification benefits), increased funding costs, operational costs of subsidiarisation (new independent boards, etc.), and one-off transition costs[103]. It is critical to assess the extent to which some of these increased costs might materialise, following different structural reform measures and whether the impact will be not only on lower profits but also in greater financial instability and/or higher costs to society at large.

[102] Popov and Smets (2011) analyse the role of direct intermediation through financial markets with the indirect intermediation through levered banks. They argue that less deep financial markets in the EU relative to those of the US are, to a large extent, responsible for the smaller increase in productivity and slower pace of industrial innovation. They also compare the liquidity spirals, asset fire sales, and interbank market freezes of the recent financial crisis with the much more orderly burst of the dot-com bubble. They argue that the credit boom of the 2000s was driven by debt finance, while the dot-com bubble was mostly driven by an expansion in equity ownership, and equity is not held in levered portfolios.

[103] Upfront one-off transition costs would include amongst others establishing the legal arrangements for separation, dealing with pension and tax issues, renegotiation of intra-group arrangements, and broken ongoing hedges between both parts.

One concern is that a certain proportion of these costs may in fact reflect private costs, but not costs for society as a whole. Lost implicit subsidies and higher funding costs are a private cost for the bank (in particular for the entity that does not take deposits and its customers), but a gain for taxpayers, so on balance this may not be cost for society as a whole. Similarly, structural separation may impose costs on the financial sector and make it more difficult to perform some activities (for example proprietary trading). But that is not necessarily a bad thing, as certain of these costs may be more than offset by benefits to customers and taxpayers through improved efficiency and financial stability and more generally by facilitating a better allocation of scarce capital, improving growth prospects to the benefit of society. One of the challenges to be faced when making an impact assessment of alternative structural reform measures is that private costs of structural reform are likely concentrated on a few large banking groups, whereas other social costs such as those potentially arising from increased funding costs as well as social benefits are less tangible and spread out over many individual taxpayers and the economy at large.

3.4.1 Economies of scale and scope

Banking groups may benefit from undertaking a wide range of activities to the extent that their assets and earnings become more diversified and resilient to shocks.

Why do banks choose to grow big or to diversify their business models, instead of specialising in a narrow range of activities? A significant body of literature exists on the economies of scale and scope in banking (see Appendix 4 in Liikanen (2012) for a review of this literature). The main economies of scope can be slotted into the following three categories:

- *Cost reductions* - By engaging in a wide range of activities, banks may reduce their operating costs, for example by pooling resources across a broader range of activities (e.g. centralised IT and finance functions; economies in the single information acquisition about clients that can be used for multiple services).
- *Risk diversification* - this is part of the cost reductions and means that banks providing diversified services (with less than perfectly correlated income streams) may be able to diversify the overall risk of their operations and thereby reduce their funding cost as they will be perceived as less risky.
- *Revenue increases* - Clients may value the "one-stop-shopping" offered by a bank with diversified services. Also, by providing a service, banks gain valuable information on their clients that might provide advantages in the provision of other services, such that these banks may better serve their clients.

Economies of scale and scope would, if passed through, benefit bank customers through lower prices and a wider product offering.

On the downside, the literature refers to the following diseconomies of scope (which mainly reflect social costs or costs to society as a whole):

- *Increased complexity* - diversification of large banks tends to increase their complexity, which may raise their risk management cost, reduce their transparency and complicate their resolution.
- *Conflicts of interest* - potential conflicts of interest are more likely to materialize when an institution provides multiple financial services.
- *Increased risk-taking* - While authors generally acknowledge the potential risk-diversification benefits, they note that the expansion of activities allows for diversification

into riskier activities, given that supervision and regulation become more challenging to enforce.

- *Increased systemic risk* – Paradoxically, individual diversification by banks can make the system as a whole less diversified. As banks diversify into each other's traditional areas, and most especially in capital markets business, the system can overall become less diverse and potentially more vulnerable to common shocks. This has led many, including the Commission, to call for promoting diversity in bank structures.

The large literature on economies of scale seems to unanimously agree that very small banks (less than a few hundred million EUR in assets) are generally inefficient. The relevant question is at what point economies of scale get exhausted, if at all. Informational and managerial diseconomies of scale are likely at some scale, whatever the business line.

Early empirical studies in banking, failed to find scale economies much beyond bank asset sizes above USD 10bn (Amel et al. (2004)). Recently, a number of studies using data from the 2000s have pointed to scale economies at much higher asset thresholds. For example, Wheelock and Wilson (2012) find scale economies for banks with assets up to USD 1tn and Feng and Serilitis (2009) for banks with assets up to around USD 1.5tn. Using data on banks with assets in excess of USD 100bn, Mester and Hughes (2011) not only find scale-economies, but argue that these may increase with bank size. Note that most of the available empirical studies focus entirely on firm-wide scale economies, when the important scale issues are typically encountered at the level of individual business lines.

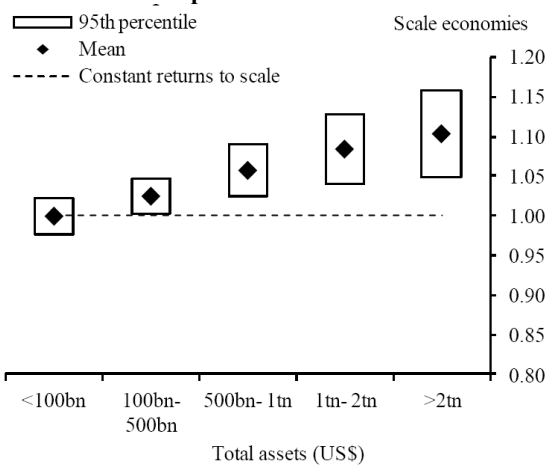
Davies and Tracey (2012) re-examined the evidence on economies at different banking scales. Based on standard models, they confirm the above recent evidence and find scale economies for banks with assets above USD 100bn and scale economies that rise with banking scale (chart 3.4.1). But, importantly, they clarify that this finding relies on estimates of banks' funding costs which take no account of the implicit subsidy associated with being too-big-to-fail. According to the authors, removing this funding cost subsidy raises banks' funding costs, lowers estimates of bank value-added and thereby reduces measured economies of scale. Once allowance is made for the implicit subsidy, their findings change dramatically. There is no longer evidence of economies of scale at bank sizes above USD 100bn. If anything, there is now evidence of diseconomies which rise with bank size, consistent with big banks becoming "too big to manage" (chart 3.4.2).

Absent structural restrictions, a banking group will choose the size and scope which maximises its *private* net value. As such, implicit subsidies may artificially boost the privately-optimal bank size. Removing the state implicit subsidy would then suggest a significantly lower socially-optimal banking scale. Boyd and Heitz (2012) find that the cost to the economy as a whole due to increased systemic risk is of an order of magnitude larger than the potential benefits due to any economies of scale when banks are allowed to be large. They compare the lowest-available estimate of the social cost of the crisis with the highest-available estimate of the private benefit of scale and scope economies in banking.

Irrespective of the above evidence on economies of scale and scope in banking, it is crucial to assess, if structural measures in the form of restrictions on intra-group transactions and exposures have any significant impact on the ability of banking groups to achieve economies of scale and scope. Structural reform proposals to date in a number of Member States (see Box 1) state the aim to establish "more clearly structured" universal banks and to impose specific legal, economic,

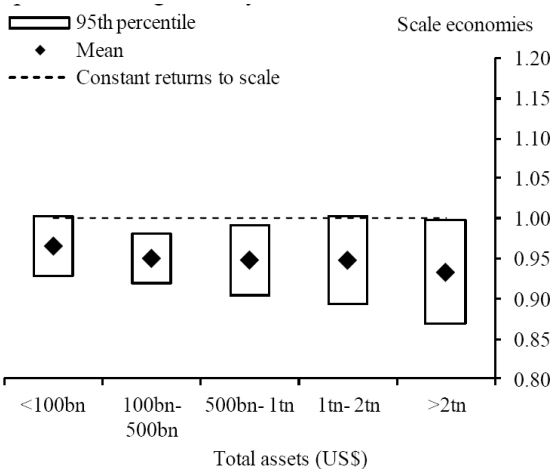
and operational restrictions on deposit-issuing entities. Indeed, except in the case of measures imposing full ownership separation, banking groups are entitled, subject only to competitive constraints, to continue to offer a broad spectrum of services to their customers and obtain any related synergies. At the same time, structural reform advanced to date in some Member States seeks to ensure that the public guarantee is by no means extended to proprietary and certain other trading activities which are not linked to "critically important and non-substitutable" banking activities (such as deposit-taking, lending to SMEs and households, and payment services).

Chart 3.4.1: **Scale economies, from a standard model of bank production**[(a),(b),(c)]



(a) The results are for scale economies estimates over the period 2001 to 2010. A value equal to one, less than one, or greater than one implies constant returns to scale, scale diseconomies, and scale economies, respectively.

Chart 3.4.2: **Scale economies, adjusting for the implicit subsidies**[(a),(b),(c)]



(b)Total assets have been adjusted to constant year-2010 prices using country level inflation rate data.
(c) Presented results are estimated at the median and interquartile range for each bank in each time period. The scale economies mean is evaluated at the mean of the data.
Source: Davies and Tracey (2012)

3.4.2 Funding costs

As reported above, proponents of structural reform claim that it would eliminate or at least minimise the implicit subsidies and the corresponding funding cost advantage currently enjoyed by the large, complex, and interconnected banks that are deemed too-important-to-fail. Hence, it can be expected that the funding costs of the banking groups affected will increase following structural reform, ceteris paribus, reflecting the lost implicit subsidies. To the extent that the increased funding cost is passed on to final customers, all other things equal, this would normally result in higher prices for affected services, possibly including essential services that contribute to economic growth[104].

Several important considerations need to be raised in this context. First, households and SMEs that are clients of a banking group that needs to separate its activities are typically and mainly clients of the deposit-taking entity. Structural reform can allow deposit-taking banks to provide a full set of services to their clients, thus serving the real economy. Hence, if bank competition functions well, the increased funding cost for the entity not taking deposits would not necessarily affect borrowing conditions for households and SMEs. The funding cost of the deposit taking

[104] Note that the banking sector is imperfectly competitive. As a result, in the presence of some degree of market power, increases in marginal costs will not be passed on one-to-one.

entity may remain unchanged or may even decrease compared to the ex-ante blended funding rate, given the lack of trading activity, the remaining possibilities to reap diversification benefits, and the remaining geographical and sectoral diversification of the deposit taking entity.

Further, as pointed out earlier, proponents of structural reform argue that households and SME employees are also taxpayers, and on balance consumers and employees would gain from a more stable and efficient banking sector, even if such a benefit is less tangible.

A more subtle consideration is that structural reform measures seek primarily to constrain or discourage artificial and excessive risk-taking. To the extent that any structural measures would be effective in doing so, the undesired activities will shrink tending to reduce the funding cost burden of the banking group.

Finally, implicit subsidies allegedly distort competition in the market, to the extent that small and medium-sized banks do not benefit from them and hence are being disadvantaged; to the extent that weak banks in strong Member States enjoy a good support rating; and to the extent that strong banks in weak sovereigns do not benefit from a support uplift.

All the above mentioned claims and counterclaims regarding the impact of structural reform measures on banks' funding costs need a careful and detailed impact assessment[105].

3.4.3 Competitiveness of the EU banking sector

International competitiveness of the EU banking sector matters to the extent that it reflects a well-functioning single market that ensures an optimal allocation of resources to the ultimate benefit of bank customers, creditors, taxpayers, and society at large.

Competitiveness is enhanced if market drivers exist that ensure the weeding out of the least efficient banks in the sector, thereby facilitating the entry and expansion of rival banks better placed to serve customer demands at the lowest, sustainable costs. To the extent that structural reform measures would improve the resolution process to deal with an impending failure of any dominant financial institution -as proponents claim- this would stimulate competition[106], innovation, and may also enhance financial stability.

In this respect, it has been argued that if structural reforms were to reduce the funding advantage of the largest banks, this would level the playing field and make it easier for medium-sized and small banks to gain market share based on client-centred competition on the merits, enhancing diversity in the process[107]. In turn this would enhance the cross border, as well the international competitiveness of the EU banking sector, imposing limits to current forces towards fragmentation in the Single Market.

[105] In this connection proponents of structural reform also argue that if considered helpful to facilitate growth, society can subsidise borrowing through direct measures without artificially promoting intermediary banking groups to become highly-leveraged, thus avoiding many of the above mentioned distortions.

[106] As in non-financial sectors, competition in banking matters for allocative, productive, and dynamic efficiency. Theory suggests, however, that unfettered competition is not first best given the special features of banking (Claessens (2009)).

[107] Liikanen (2012) reports that customer loans make up a much higher percentage of total assets for small and medium-sized banks.

As regards the ability of alternative and diverse business models to coexist it is worth pointing out that, as argued above, the elimination of the implicit subsidies will tend to increase the funding cost for the banking group, but not necessarily for the deposit-taking retail banking entity. In theory, the funding cost of the deposit-taking entity may remain unchanged or may even decrease. All this further reinforces the need for a solid an in depth impact assessment of any alternative structural measures. Proponents of structural reform argue that numerous stand-alone investment banks exist and that the US Glass-Steagall era demonstrated the viability of stand-alone investment banks. The USA has a long history of structural separation and concentration limits (see Box 1). Proponents insist that the survival and even prosperity of financial specialists in the presence of state supported and subsidised banking groups suggests that a modern version of functional structural separation would not be harmful to the static and dynamic efficiency, stability and competitiveness of separated trading entities within or outside deposit-taking banking groups. This line of reasoning will require careful assessment.[108]

3.4.4 Recent experience weighing costs and benefits of structural

With respect to private costs of structural reform, the UK Independent Commission on Banking (ICB) surveyed the estimates made by analysts of the costs to banks associated with the ICB proposals (ICB (2012)). It also asked large UK banks to submit their own cost estimates. The cost estimates of different analysts and banks varied widely, both in the assumptions underlying the estimates and in their level of granularity. The resulting range of estimated annual total costs for the four largest UK banks taken together is large, running from GBP 2bn to GBP 10bn, with a mean of GBP 6bn. On the basis of end-2010 data, the mean of the annual GBP 6bn cost represents approximately 0.1% of assets of the four largest UK banks, 33% of their annual pre-tax profit and 10% of their annual profit before tax and staff costs. These are certainly non-negligible cost estimates, but one must consider that reduced shareholder profitability may also reflect reduced riskiness. Furthermore, as mentioned above, at least part of these costs will reflect purely private, not social costs.

The social costs of structural reform relate to the question of how private costs suffered by banks might impact the economy as a whole. Estimating social costs is even more challenging than estimating private costs. In coming up with its social cost estimates, the ICB explicitly adopted a conservative approach, assuming that the total private cost was GBP 6bn, that this cost was passed entirely to banks' borrowers in the form of higher lending spreads[109], and that the affected bank borrowers included all UK borrowers. Under these assumptions the ICB estimated that the ICB reforms would reduce the long-run level of GDP by 0.075%, which amounts to GBP 1bn. All in all, the ICB concluded that total social costs may amount to GBP 1bn to GBP 3bn of annual GDP. According to the UK Treasury, the on-going costs are estimated to be in the range of GBP 1.7bn to GBP 4.4bn a year for its proposed implementation of the ICB separation recommendations, with one-off transitional costs in the range GBP 1.5bn to GBP 2.5bn.

[108] It this connection it is worth noting that under current EU legislation, banking and insurance activities are being prohibited from being supported by the same pool of capital in all EU Member States.

[109] This is indeed conservative, as borrower rates for households and SMEs may not be affected as much, to the extent that the bulk will reside within the ring-fence.

According to several banks, the costs of structural separation will likely exceed its benefits. However, as documented by several studies, the benefits of eliminating financial crises altogether are potentially very significant, as the cost to society of financial crises in terms of lost GDP can be extremely high. In a cross-country study, the median estimate of the net present value cost to output from financial crises amounts to 63% of GDP (BCBS (2010)). This magnitude is consistent with the impact of the recent crisis, but, obviously, the ultimate result will depend on the extent to which the economy will recover, as well as assumptions about any moderation of economic growth trends going forward. Financial crises are documented to occur on average once every 20 years (BCBS (2010)). Hence, the equivalent annual GDP cost of financial crises, according to this metric, amounts to roughly 3% of GDP (i.e. 63%/20). Simplifying things, it would be worth to incur an annual cost of up to 3% of GDP (or 40bn GBP in 2010 terms for the UK) if, by doing so, one could *completely* avoid financial crises to materialise. Obviously, structural reform is not a panacea and it will require careful analysis to estimate the impact it may have on the probability of a systemic crisis, as well as the losses for society given that a systemic crisis materialises.

In sum, only to the extent that it can be argued that structural reforms are able to reduce the probability or the impact of future crises to a sufficient extent from its level in the absence of structural reform and given plausible estimates of costs, net social benefits can be achieved from pursuing the reform.[110]

The experience in the USA, where a culture of deposit-bank ring-fencing within a bank holding company structure is decades old, and the UK, where retail bank ring-fencing has more recently been announced and evaluated, suggests that the costs may not be prohibitive. However, the costs and the impact of structural separation merit careful consideration, and any legislative proposal by the Commission will need to be accompanied by a thorough impact assessment. As mentioned before, economies of scope may not always be lost following structural reform, as they depend on the precise structural reform design (see “type of separation” in Section 3.5).

3.5 STRUCTURAL REFORM DESIGN AND IMPLEMENTATION ISSUES – NEED FOR A THOROUGH IMPACT ASSESSMENT

The EU has initiated a number of reforms affecting the banking sector to increase the resilience of banks and to reduce the probability and impact of bank failure. These include notably the capital and liquidity requirements to be implemented as part of the new Capital Requirement Regulation and Directive (CRR/CRDIV), the proposed Bank Recovery and Resolution Directive (BRRD), and the European Market Infrastructure Regulation (EMIR). The case for structural reform fundamentally rests on the complementarity of such reform with respect to the existing reform agenda.

[110] Few attempts to quantify the net benefits of a concrete structural reform proposal have been performed. Any such exercise is fraught with difficulties and should be considered illustrative and tentative only. As an indication, the ICB (2011) reforms have been estimated to yield significant net social benefits, as they were believed to reduce the probability or impact of crisis by more than [one 40th (2.5%) to three 40th (7.5%)] from their current level. The impact assessment should also take into account the other benefits that are not easily quantifiable, such as the beneficial impact on bank risk-taking incentives and reduced conflicts of interest.

There are still concerns, however that important EU banking groups remain complex to manage, monitor, supervise, regulate, and resolve, due to their complexity, connectedness (contagion and shock amplification), geographic scope, and ability to rapidly expand their balance sheet.

International institutions like IMF and OECD have called for a broad and global debate on bank business models and that several EU Member States (UK, FR, DE, NL, etc.) and international partner countries (US) have already embarked on structural reform agendas to address the lingering problems. The High-level expert group (HLEG) on structural reforms of the EU banking sector, chaired by Erkki Liikanen, also recommended a package of structural and non-structural reform measures in its final report of 2 October 2012 (Liikanen (2012)). Box 1 briefly reviews these initiatives.

Taking account of the potential consequences of possibly divergent approaches to this issue adopted by Member States for the single market for banking services, the European Commission has decided to prepare a legislative proposal which it will consider in summer 2013. The content and calibration of the proposal will be shaped following a careful impact assessment that analyses its effectiveness, efficiency, and coherence in the overall regulatory agenda. The Commission services are currently working on the impact assessment and would actively welcome the input of stakeholders on the issues described in this chapter.

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Box 1: Brief overview of national structural reform agendas*

- *The UK draft Banking Reform Bill* has been introduced to the UK Parliament in February 2013. The Bill requires ring-fencing of deposit-taking and other "core" retail banking activities into a separate entity from "excluded" wholesale and investment banking activities and non-EEA activity. Regulators are given the "continuity objective" of protecting the continuity of provision in the UK of "core services", which are taking deposits from individuals and SMEs, and related payments and overdraft services. UK institutions with permission to carry out core services – "ring-fenced" entities – may not carry out "excluded or prohibited activities". "Dealing in investments as principal" (which amongst others covers proprietary trading and market-making) is the only excluded activity initially specified, albeit a broad one and significantly broader than the Volcker Rule. The UK Treasury may specify other excluded activities as judged necessary for the continuity objective. The draft legislation empowers the Treasury to prohibit ring-fenced bodies from entering into transactions of specified kinds or with kinds of counterparty, and to make geographic and ownership prohibitions (e.g. on having branches outside the EU). Services to non-EEA customers, services resulting in exposure to financial customers, "trading book" activities, services relating to secondary markets activity (including the purchases of loans or securities), and derivatives trading (except as necessary for the retail bank prudently to manage its own risk) should be prohibited activities for the ring-fenced entities. There is however a wide range of commercial banking activity that is neither required to be in the ring-fenced body nor excluded/prohibited from it. "Certain simple derivatives to customers" are permitted within ring-fenced banks. Retail and SME lending can take place at either side of the fence. Taking deposits from customers other than individuals and SMEs, and lending to large non-financial businesses. It will be up to the banks and their customers whether such business is transacted within or outside the ring-fenced body. A *de minimis* rule of insured deposits applies, which effectively exempts all but the biggest 6 banks. The draft Bill broadly follows the recommendations of the Independent Banking Commission (ICB) chaired by Sir John Vickers. All legislation is targeted to be in place by 2015 and banks will be expected to have implemented reforms by 2019 at the latest.

- *The French draft reform* proposes that unsecured lending to hedge funds and proprietary trading would be ring-fenced into a separate subsidiary not funded by deposits. All other investment services such as brokerage for third parties, underwriting, and market-making would not be subject to structural separation. Hedging transactions (used to protect the deposit-taking bank from market and credit risks) are also not affected by the structural separation. Only banking groups with significant trading activities are proposed to be captured by the scope of the proposed reform, with the threshold for *de minimis* exemptions to be defined by a subsequent decree. On top of this structural separation for proprietary trading and unsecured lending to hedge funds, which is the core of the French proposal, a full ownership separation (equivalent to a prohibition of activities from banking groups) would be introduced for proprietary trading at high frequency and in derivatives on agricultural commodities.

- *The German draft legislation* is essentially similar to the French one. Unlike the French draft, the German one already sets a *de minimis* exemption for banks whose trading and available for sale assets are less than €100bn or whose total assets are less than €90bn, subject to trading assets not constituting more than 20% of the total assets.

Box 1: Brief overview of national structural reform agendas (continued)

- *The HLEG report* (Liikanen (2012)) proposes to ring-fence proprietary trading, market-making and unsecured exposures to hedge funds. All other activities would instead be left within the deposit-taking entity. In particular, securities underwriting would not need to be separated. A *de minimis* exemption is envisaged by the report for all banks whose total assets are under €100bn and whose trading assets (proprietary trading and market making) are under a threshold (15-25%) of the bank's total assets, to be calibrated by the European Commission.

- *The Netherlands* has set up a Commission on banking structure of Dutch banks and is analysing how and to what extent deposits need to be insulated from selected other activities.

- *The Belgian government* has tasked the National Bank of Belgium to analyse the desirability and feasibility of introducing structural reforms in banking (National Bank of Belgium (2012)) and contemplates isolating selected activities such as proprietary trading from deposit-taking banks.

- *In the USA* and despite the repeal of the Glass-Steagall Act in 1999 by the Graham-Leach-Bliley Act, US banks are currently still subject to specific, narrow activity restrictions that limit transactions between an insured deposit-taking entity within a holding company and its (investment bank) affiliates, subjecting those transactions to strict quantitative limits and collateral requirements and requiring those transactions to be on market terms (Sections 23A and 23B of the Federal Reserve Act). The deposit-taking entity is prohibited from amongst others securities dealing, market making, and underwriting. The parent holding company of the deposit-taking bank must generally qualify as a "financial holding company" to carry on investment banking/trading activities at all.

- *The Volcker rule* builds on the already existing separation requirements that apply to bank holding companies and adds to that by imposing a ban for deposit taking banks and groups that own them, to carry out proprietary trading and investing in hedge funds and private equity funds. This is tantamount to full ownership separation of those selected activities. No *de minimis* exemption is contemplated for deposit taking banks to be covered by the ban on proprietary trading. A *de minimis* calculation applies however to limit a bank's investment in any single fund to 3% and to restrict the banking entity's aggregate exposure to 3% of Tier 1 capital.

- In the US, the *swaps push-out provision* is effectively an OTC derivatives ring-fence. Banks can only deal in non-standardised and non-CCP cleared OTC derivatives if done via a separate legal entity specialised in such activity. Section 716 of the US Dodd-Frank Act states that banks either have to stop engaging in certain swaps (certain credit derivatives, all equity and most commodity derivatives) or do such swaps in a separate legal entity, registered as a swap dealer and subject to capital requirements and margin requirements under the derivatives sections of the Act. The provision is scheduled to enter into effect in July 2013. It would not affect those derivatives judged to be important for banks (i.e. interest rate, foreign exchange, gold/silver, credit derivatives where underlying is an investment-grade security), which could thus continue to be provided within the bank.

Box 1: Brief overview of national structural reform agendas (continued)

- The USA also implemented concentration limits. The national deposit concentration limit prevents acquisitions and consolidations resulting in banking groups having more than 10% share of national deposits. It is in place since the 1994 Riegle-Neal Act and was imposed a quid pro quo for the liberalisation of rules governing inter-state bank acquisitions. Under section 622 of the Dodd Frank Act, an additional concentration limit is proposed that prohibits financial companies from merging, consolidating with or acquiring another financial company if the total consolidated liabilities of the resulting financial company would exceed 10% of the aggregate consolidated liabilities of all financial companies.

  *For more information, see the following documents: FR : *Loi de separation et de regulation des activités bancaires* (*http://www.economie.gouv.fr/files/projet-loi-reforme-bancaire.pdf*), DE : *Entwurf eines Gesetzes zur Abschirmung von Risiken und zur Planung und Sanierung und Abwicklung von Kreditinstituten* (http://www.bundesfinanzministerium.de/Content/DE/Downloads/Abt_7/Gesetzentwurf-Abschirmung-Bankenrisiken.pdf?__blob=publicationFile&v=1), UK: *Banking reform: a new structure for stability and growth* (http://www.hm-treasury.gov.uk/fin_stability_regreform_icb.htm), NL: *Commissie Structuur Nederlandse Banken* (http://www.rijksoverheid.nl/nieuws/2012/09/03/de-jager-start-onderzoek-bescherming-spaarders.html).

CHAPTER 4: RATIONALE AND DEVELOPMENTS IN THE REGULATION OF OTC DERIVATIVE MARKETS

4.1 INTRODUCTION

Regulation of over-the-counter (OTC) derivatives has been at the forefront of the global regulatory agenda ever since the crisis hit. In line with the G20 commitments, 2012 was marked by an important event in the EU regulatory landscape – notably, the entry into force of the European Markets Infrastructure Regulation (EMIR), along with the main technical standards. Although this is a crucial milestone, there is still a lot to do in terms of implementing it by putting in place the required adjustments to the infrastructure and by promoting the application of the new standards. Furthermore, the EU regulatory agenda as regards the OTC derivatives markets equally encompasses other legislative initiatives, many of which are still pending. This requires immediate attention to bring these remaining initiatives to fruition, so that there remain no loopholes in the new framework.

In light of the above, this special feature is intended to remind the reader once again about the reasons behind EMIR and the related legislative initiatives. For the matter of completeness, section one will start with the basic features of financial derivatives and those that are traded OTC, in particular, as well as examine the structure of market transactions and the markets themselves. The first section will also look at the effects that OTC derivatives trading exerts on the underlying markets. The first section is partly based on a by Frontier Economics (2012) study, which was commissioned by DG Internal Market and Services of the European Commission.

Section two will go deeper into the analysis of why it was necessary to regulate OTC derivatives by looking at their role in this crisis and in previous financial scandals, and will draw some policy implications. It will then remind the reader of the way the Commission chose to approach regulation in this sector and briefly sketch out the global commitments made at the G20 level. Section three provides an overview of the main features of the EMIR and addresses the issue of the OTC derivatives trades that do not fall under the EMIR clearing obligation. The concluding section four dwells on the remaining legislative initiatives that complete the comprehensive regulatory work that the European Commission has been doing in this important area.

4.2 WHAT IS A DERIVATIVE?

4.2.1 Broad characteristics of financial derivatives

Derivatives are important building blocks of modern finance that facilitate the trading and redistribution of risks. Derivatives owe their name to the fact that their value is derived from an underlying asset, such as the price of a financial instrument (e.g. stock of a publicly traded company or commodity futures), a reference interest rate (e.g. LIBOR) or a credit event (e.g. default). Although the seeming complexity of derivatives may give an impression that they are a recent financial market innovation, their simplest forms have actually been around for a long time. For example, a form of futures known as ‘to-arrive contracts’ were traded on the Chicago Board of Trade already in the second half of 19th century.

Traditional finance theory suggests that derivatives provide a number of economic benefits. They facilitate risk-sharing amongst investors, aid price discovery and provide leverage. Derivatives

play an important role in completing financial markets by providing additional risk management and mitigation tools that enable reallocation of risk. In theory, derivatives should facilitate transfer of financial risks to parties who are either more willing or better able to take on or manage those risks. This, in turn, implies additional economic activity, since many risky activities would not be undertaken without the protection against risks that derivatives provide. Whilst companies across all industries use derivatives to manage foreign exchange (FX) and interest rate risk, use of commodity derivatives is more concentrated in the utility sector, whereas equity and credit derivatives are more commonly used in the financial sector. According to the International Swaps and Derivatives Association (ISDA), 94% of the world's 500 largest companies ranked by revenue use derivatives to manage and hedge their business and financial risks[111].

Derivatives play a fundamental role in **price discovery**, thereby assisting managerial decision-making of corporations. For example, they provide the market's view on future developments in the underlying markets. They may also provide a view on the default risk of a reference entity, e.g. on a company or a sovereign borrower, or on a particular segment of the credit market. Derivatives enable the pricing of risk that would otherwise be difficult, e.g. because the underlying assets are not frequently traded. There is empirical evidence that derivatives trading enhances price discovery in the underlying markets[112]. Investors tend to rebalance their portfolios to exploit any pricing differentials between the derivatives and the underlying asset markets. This also means that price volatility in the OTC market could be transmitted to the underlying markets. Arbitrage based on price differentials between the derivatives and the underlying markets may involve large swings in trading volume, inducing price volatility. Institutional investors are the most likely to arbitrageurs and there is empirical evidence that this can indeed destabilise underlying asset markets[113].

Conventional economic theory also suggests that many classes of derivatives encourage **market participation** by allowing agents to exchange risks with little or no upfront cost, thereby bringing economic benefits to users. Indeed, an important characteristic of derivatives is their ability to provide leverage, i.e. they allow investors to take a large position in the market while committing only a small amount of capital. This makes it cheaper to hedge, but also to speculate, allowing investors to earn a higher rate of return on their capital. However, the converse is also true: investors can suffer large losses in case the market moves against them[114].

Derivatives can be used either to hedge against a particular risk or to take on additional risk by speculating. They can also be used to arbitrage between the derivatives and underlying markets. Hedgers try to reduce or eliminate their underlying risk exposures, whereas speculators bet on the direction of future price movements or that of creditworthiness, using derivatives to increase their leverage. In the process, they add extra liquidity to the derivative markets. An arbitrage opportunity arises when there are price differences between the derivatives and underlying

[111] See ISDA (2009).

[112] For example, see Dodd (2004), Kumar (2007) and Chance et al (2010).

[113] For example, see Brady Commission (1988) and Kumar et al (1998).

[114] For example, when investors have a short forward position in an asset at a forward price of €100 (i.e. they are obliged to sell the asset at €100 at a future date) and the spot price at maturity turns out to be €110, they are obliged to take the associated loss of €10, unless they have covered their position by assuring that they will have access to the underlying asset at maturity without the need to buy it on the spot market. Moreover, since the future spot price can theoretically go up for an unlimited amount, their potential losses are also unlimited. See Box 4.2.1 below for more details on forward contracts.

markets. Arbitrageurs use derivatives to connect markets by eliminating pricing inefficiencies[115]. Derivatives can also be used to replicate other financial instruments. Amongst others, derivatives are widely used by hedge funds for speculative or arbitrage positions. Derivatives have been widely successful, mainly due to their embedded features of enhanced liquidity and leverage.

Box 4.2.1 Main features of the most common types of financial derivatives

Forward contracts involve an obligation to trade in the underlying asset at maturity at a price that is agreed at the outset. They are tailored to the specific needs of investors and are traded OTC. Forward positions cannot be easily exited and are, therefore, mostly used by investors who are interested in taking delivery of the underlying asset at maturity. Hence, they are essentially designed to neutralise risk by fixing the price.

Futures are standardised forward contracts that are traded on exchanges. If the holder wants to exit a futures position before maturity, it must be offset by entering into an opposite futures contract. Unless this is done and unless the contract stipulates cash settlement, the holder will have to take delivery of the underlying asset at maturity. However, the main objective of investors using futures is to hedge the price risk of the underlying asset instead of taking its delivery. Thus, the majority of positions are offset prior to maturity.

A **swap** is a contract, whereby two parties agree to exchange one set of cash flows for another. A notional principle amount is used to calculate each cash flow, which is rarely exchanged between the parties. A swap is usually used to hedge risk such as interest rate risk or to speculate on a price change. It may also be used to gain exposure to an underlying asset without both the need to take a position in the latter and to post collateral.

An **option** gives the holder the right to engage in a future transaction on an underlying asset, but there is no obligation. A call option gives the holder the right to buy, whereas a put option – the right to sell the underlying asset at (or before) maturity at a strike price fixed at the outset. If the holder exercises the option, the counterparty is obliged to engage in this transaction. A simple option as described above is also known as a standard ('plain vanilla') option and it is typically traded on an exchange, as opposed to 'exotic' options that are part of the OTC derivatives market. The latter have more complicated rules governing the payoff and they are generally much more profitable to a derivatives dealer. The majority of exchange-traded options take the form of American options (i.e. they can be exercised at any time during their lifetime). Whereas it costs nothing to enter into a forward or futures contract, options have an initial cost in the form of an upfront fee. Option contracts offer investors protection against adverse future price movements, whilst leaving them with the benefits in case of favourable price movements.

Source: Hull (2009)

[115] It is interesting to note that the majority of valuation methodologies for derivatives are based on the assumption that there are no arbitrage opportunities. The logic of this assumption is that even if there are some, they can only last for a short period of time precisely because arbitrageurs would spot and eliminate them, unless there are structural market inefficiencies that do not allow for such elimination.

The OTC derivatives market is essentially a phone- and computer-linked network of dealers characterised by flexibility and tailor-made products. This satisfies the demand for bespoke contracts tailored to the specific risks that a client wants to hedge. Trades in the OTC market are usually done either between two financial institutions or between a financial institution and a client, which is typically a corporate treasurer or fund manager. Therefore, derivatives trades in the OTC market are typically much larger than those in the exchange-traded market. In the latter, the traditional open outcry system has been gradually replaced by electronic trading where the traded contracts are standardised by the respective exchange. Thus, standardised derivatives are typically traded on organised public trading venues, i.e. derivatives exchanges, while bespoke derivatives are traded bilaterally, i.e. off-exchange (hence – OTC). The most common types of derivatives traded on an exchange are futures and options. The most common types of OTC derivatives are swaps, forwards and 'exotic' options (see Annex I for some examples).

4.2.2 OTC derivatives and their underlying markets

OTC derivatives are generally viewed across five broad segments: FX, interest rate, equity, commodity and credit derivatives. Unlike exchange-traded derivatives, OTC derivatives are reserved for professional investors and not accessible to the general public. This is the logic behind the OTC derivatives market having traditionally been subject to much lighter regulation. Nevertheless, this does not imply that there have been no attempts to strengthen regulation in the past. Section 4.3.1 explains this argument in more detail.

The bilateral nature of this market makes it rather opaque to parties outside a particular transaction. The OTC derivatives markets are relatively concentrated, with a handful of major dealers providing liquidity to the majority of the market. This limits the number of potential trading partners for each party to rebalance their positions as part of market-making activities. The fact that practically all major financial institutions are participants in this market has led to a high level of interconnection and hence a high level of interdependence amongst these institutions. A high degree of market concentration in the OTC derivatives dealer network amplifies the effect of individual counterparty risk to a system-wide level. The effect of one of these major dealers facing financial distress or defaulting altogether then ripples throughout the system, as happened in the case of Lehman bankruptcy. In general, markets dominated by a few sizeable players are more susceptible to manipulation. A strategy to manipulate an underlying market is likely to be sustainable, unless there are many substitutes to the asset that is subject to an attempted squeeze. With few available substitutes and large trading positions, the manipulator will have a significant degree of market power. Thus, market structure and concentration in OTC derivatives markets can affect market efficiency in the underlying markets.

Given the lack of transparency in the OTC markets, their price discovery function can be rather limited. Sufficient trading information is often not available to market participants other than large dealers, making it difficult to assess counterparty risk accurately. As difficult as it may be for market participants to assess the quality of their immediate counterparts, the complexity and interconnectedness of the financial system makes it even more difficult to assess the quality of more distant counterparts (i.e. other counterparties to their immediate counterparts). The greater is the trading activity, the more complex these inter-relationships grow, and the more difficult information acquisition becomes. Hence, whilst the trading of OTC derivatives may aid price discovery on the one hand, such activity may also facilitate loss of information.

This lack of transparency exacerbated the asymmetry of information faced by the regulators and market participants alike, creating significant scope for moral hazard and making detection of systemic risks generally more difficult. Lack of transparency among market participants can also facilitate market manipulation by enabling market participants to establish large positions that go unnoticed. The likelihood of manipulation increases when regulators have poor visibility over trading volumes and prices, as this lowers the probability of detection. In addition, the information asymmetry among market participants may result in the price of an asset being driven far from its fundamental value. Both the financial crisis and recent academic research suggest that OTC derivatives markets, at least in their current form, have the potential to impose large social costs[116]. Financial regulation has an important role to play in mitigating these costs.

The use of derivatives has grown exponentially over the last decade, mainly driven by OTC transactions. Thus, OTC derivatives account for a significant portion of the overall banking and intermediation activity. Chart 4.2.1 depicts the OTC derivatives by asset class in terms of notional amounts outstanding. According to the International Swaps and Derivatives Association (ISDA), the data compiled by BIS include double-counting as regards FX contracts and centrally cleared OTC derivatives. As at end-June 2012, about one third of the total notional amounts as reported by BIS were due to this double-counting effect[117]. While notional amounts provide a measure of market size and a reference for the calculation of contractual payments, they do not gauge well the economic value that is truly at risk (i.e. the credit exposure).

Chart 4.2.1 **OTC derivatives in outstanding notional amounts (trillion USD)**

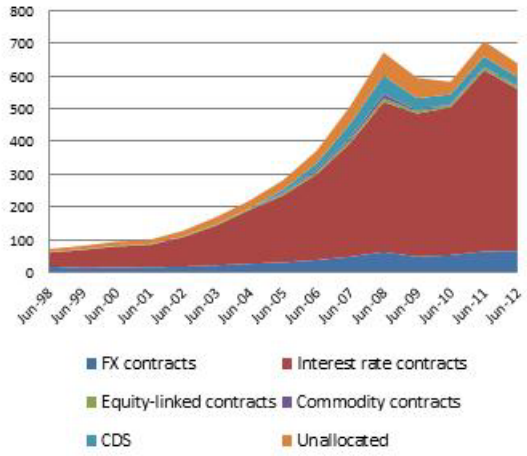
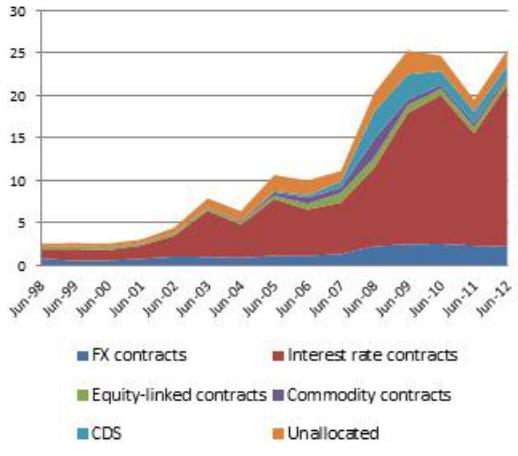


Chart 4.2.2 **OTC derivatives at gross market value (trillion USD)**



Note: BIS data cover dealers headquartered in Australia, Belgium, Canada, France, Germany, Italy, Japan, the Netherlands, Spain, Switzerland, the UK and the US. Separate CDS data category starts as of 2005. The 'unallocated' category is due to the different sampling of the two relevant BIS surveys: Semiannual OTC Derivatives Statistics is based on data from 60 major financial institutions in 11 countries, whereas the latest Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity covered 1,309 banks and other dealers in 53 countries.
Source: BIS

Gross market value corresponds to the aggregate positive market value of all in-the-money contracts. Given that financial derivatives contracts is a zero sum game, this is equal to the

[116] For example, see Stulz (2010) and Awrey (2011).
[117] ISDA (2012a).

negative market value of all out-of-the-money contracts. In other words, it measures the replacement cost of the outstanding contracts, providing a better estimate of the counterparty risk embedded in OTC derivatives. Both Chart 4.2.2 above and Chart 4.2.3 below clearly demonstrate that the gross market value of OTC derivatives is only a fraction of the notional amounts outstanding.

Chart 4.2.3 **OTC derivatives at gross market value (in % of notional amounts outstanding per asset class)**

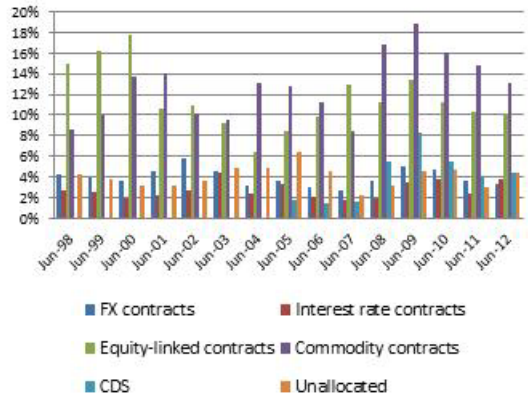
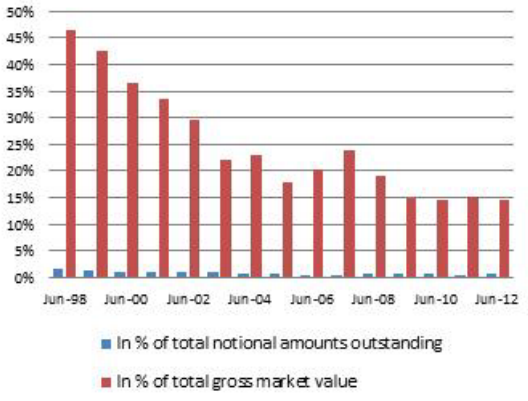


Chart 4.2.4 **Total gross credit exposure of OTC derivatives**



Note: BIS data cover dealers headquartered in Australia, Belgium, Canada, France, Germany, Italy, Japan, the Netherlands, Spain, Switzerland, the UK and the US. Separate CDS data category starts as of 2005. The 'unallocated' category is due to the different sampling of the two relevant BIS surveys: Semiannual OTC Derivatives Statistics is based on data from 60 major financial institutions in 11 countries, whereas the latest Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity covered 1,309 banks and other dealers in 53 countries.
Source: BIS

At the same time, even the gross market value does not account for the benefits of such risk mitigation tools as close-out netting (described in Box 4.2.2 below) and collateralisation. Once the outstanding contracts in terms of gross market value are netted, the total gross credit exposure of market participants shrinks even more, as shown in Chart 4.2.4 above. It is, however, indispensable to mention that for market participants to assume net exposure instead of gross exposure as the relevant measure of counterparty risk, close-out netting must be legally enforceable.

Last but not least, one should keep in mind the fact that part of this total gross credit exposure is further secured by collateralisation (i.e. the posting of collateral). Collateralisation significantly reduces credit risk in OTC contracts by imitating the margining system adopted by exchanges. As collateral arrangements cover 71% of OTC derivatives trades, it could be assumed that 51% to 71% of the gross credit exposure in the OTC derivatives markets is secured by collateral[118]. Overall, this implies that focusing on the notional amounts may not be the best approach to gauge the underlying risk exposures. At the same time, the above graphs clearly illustrate the added value of close-out netting and collateralisation as counterparty risk management tools. Assuming 71% collateralisation level, netting and collateralisation reduce the ultimate counterparty risk exposure to 4.3% of the gross market value and to mere 0.2% of the notional amounts outstanding depicted in Chart 4.2.1 (see section 4.2.3 for more details on collateralisation).

[118] ISDA (2012a).

Box 4.2.2 Netting in OTC derivatives transactions

OTC derivative transactions fall under the scope of the ISDA Master Agreement. In other words, each transaction is not viewed as a separate contract, but is instead incorporated into a single agreement. Netting can take two forms under the ISDA Master Agreement: payment netting and close-out netting. **Payment netting** (i.e. 'set-off') applies under normal business conditions of solvent firms and involves combining offsetting cash flow obligations between two parties on a given day in a given currency into a single net payable or receivable.

Close-out netting applies to transactions between a defaulting firm and a non-defaulting firm. It involves termination of all obligations with a defaulting party and subsequent combination of all positive and negative replacement values into a single net payable or receivable. As such, the close-out netting process involves three steps: termination, valuation and determination of net balance. If the defaulting party owes the close-out amount to the non-defaulting party, the latter can apply the value of collateral posted by the defaulting party to the net obligation. The non-defaulting party's residual claim after netting and application of collateral will be treated the same as other unsecured claims and will be paid at the same time as other unsecured claims as determined by a bankruptcy court. But if the non-defaulting party owes the close-out amount, it may set off this amount against the amount owed to it by the defaulting party under other, non-derivative contracts. The non-defaulting party will pay to the insolvency administrator any net close-out amount remaining after set-off.

Consider an example where the non-defaulting party has two transactions with a defaulting party. One has a negative replacement cost of €1 million, while the other has a positive replacement cost of €800,000. If close-out netting were enforceable, the non-defaulting party would be obligated to pay only the net €200,000 to the defaulting party. In the inverse case where the non-defaulting party would face a net positive replacement cost, it would become a general creditor to the defaulting party for the amount of this net obligation. In absence of close-out netting, the non-defaulting party would be obligated to pay immediately €1 million to the defaulting party and then to wait, possibly months or even years, to see if it recovers any of the €800,000 gross amount as part of the bankruptcy process. Thus, the effect of close-out netting is to reduce the credit exposure from gross to net amounts.

Box 4.2.2 Netting in OTC derivatives transactions (continued)

Close-out netting is an essential element in hedging activities by financial institutions and its enforceability promotes financial system stability. For example, swap dealers enter into offsetting hedge transactions to limit their exposure from the transactions they have entered into as part of their risk intermediation role. In case of a counterparty default, dealers adjust their portfolios by either replacing the defaulted transactions or by unwinding the offsetting hedge transactions. Netting and collateralisation facilitate this rebalancing process by reducing the overall exposure and by enabling set-off against replacement costs, respectively. Over time, this hedging activity results in a large number of inter-dealer and other hedge transactions, as evidenced by the trillions of dollars in notional amounts outstanding largely due to this continuous rebalancing process. In this context, close-out netting is the primary means of mitigating credit risk associated with OTC derivatives and even when default occurs under central clearing, it is essential to the ability of the clearing house to manage its risks.

Source: Mengle (2010a)

The impact of OTC derivatives trading on the underlying markets depends on both the key characteristics of these markets and their interaction. There is no consistent empirical information on the key market features for each OTC derivatives-underlying market pair. In addition, for most asset classes no regular and standardised data are available to compare the features of OTC derivative markets with those of the underlying asset markets. This section reviews the limited evidence that is available concerning the five main asset classes of OTC derivatives. Table 4.2.1 below summarises these along with the associated underlying asset markets.

Table 4.2.1 **OTC derivatives-underlying market pairs**

Type of OTC derivative	Underlying reference
Interest rate derivatives	LIBOR, EURIBOR
Credit default swaps (sovereign, non-financial corporate, financials)	Bonds (sovereign, non-financial corporate, financials)
Commodity derivatives (commodity index swaps)	Commodity spot, commodity futures
Equity derivatives	Equities
Foreign exchange derivatives (FX swaps, non-deliverable forwards)	Foreign exchange spot

Table 4.2.2 below provides a high-level summary of the main characteristics of the above pairings, covering market structure and concentration, transparency and liquidity. These features could be seen as drivers of specific outcomes in the OTC derivatives markets. It has to be noted though that the depth of knowledge of each market pair differs widely.

Table 4.2.2 **Main characteristics of the OTC derivatives-underlying market pairs**

Asset classes	**OTC derivatives-underlying asset pairs**	**Relative concentration in comparison to other pairs**	**Relative transparency in comparison to other pairs**	**Relative liquidity in comparison to other pairs**
Credit	CDS	High	High	High/Low
	Bonds	High	High (pre-trade) Low (post-trade)	High/Low
Commodities	Commodity swaps	?	Low	?
	Commodity futures	Low	Moderate (pre-trade) Low (post-trade)	High
Equities	Equity derivatives	High	Low	?
	Stocks	Low	High	High
Interest rates	IRS	High	Moderate	Low?
	LIBOR/ EURIBOR	Low	Low	High
Foreign exchange	FX swaps	Low	Moderate (pre-trade) Low (post-trade)	High
	FX spot	Low?	High	High

Sources: Mengle (2010b), Dealogic League Tables, DTCC, MTS, World Federation of Exchanges, BIS

4.2.2.1 Interest rate markets

Interest rate derivatives are instruments that derive their value from a reference interest rate, usually the London Inter-Bank Offered Rate (LIBOR) or the Euro Inter-Bank Offered Rate (EURIBOR). Although LIBOR and EURIBOR may be expressed in a range of currencies and maturities, each of these rates are completely standardised in the sense that market participants use them as benchmarks and reference rates to price a wide range of financial products, including futures, forward rate agreements, loans and interest rate swaps (IRS – see Box 4.2.3 below).

The sell-side of the market is comprised of a relatively small number of major dealers, the so-called G15 banks,[119] and a large number of much smaller dealers. Interdealer brokers (IDBs) play an important role in intermediating between these dealers.[120] Although the market is not particularly transparent, there is relatively good pre-trade transparency through several electronic

[119] The G15 banks include Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, JP Morgan Chase, Morgan Stanley, Nomura, Royal Bank of Scotland, Société Générale, UBS and Wells Fargo.

[120] There are several IRS brokers in the market, but the most significant of these are ICAP, Tradition, BGC, GFI and Tullet Prebon.

platforms provided by IDBs.[121] There are currently no comprehensive data available on the liquidity of this market. However, most IRS transactions tend to be large and relatively infrequent. Recent data show that the IRS contracts are amongst the most operationally-standardised OTC derivatives.

Box 4.2.3 Mechanics of interest rate swaps

In a 'plain vanilla' **interest rate swap**, a company agrees to pay cash flows equal to interest at a predetermined fixed rate on a notional principle for a number of years. In return, it receives interest at a floating rate on the same notional principal for the same period of time. It should be noted that the principle itself is not exchanged – hence, it is called 'notional'. LIBOR is used as the reference floating rate in most IRS agreements.

Consider a 3-year swap contract where party A agrees to pay party B an interest rate of 1% per annum on a principal of €100m in return for a 12-month LIBOR rate on the same principal. Assuming annual payments, the first payment would take place 12 months after the conclusion of the swap contract. Party A would pay to party B €1m, whilst receiving from party B the 12-month LIBOR rate prevalent at the date the parties entered into the swap contract. Assuming this stood at 0.5%, party B would pay €500,000 to party A. Thus, there is no uncertainty about the magnitude of the first set of cash flows to be exchanged. Two more exchanges of cash flows would take place as part of this contract: at the end of year 2 and year 3 of the contract, whereby the LIBOR rates applicable would be those prevailing on the dates of the first and the second exchange of cash flows, respectively. An IRS is usually structured in such a way that one side settles the net difference owed on the two cash flows.

The IRS market is not only the largest of all the OTC derivative markets in terms of notional value outstanding, but it also represents the majority of OTC interest rate derivatives. IRSs are widely used throughout the economy by non-financial corporations, financial institutions (e.g. banks, insurance providers, hedge funds) and sovereigns to transform existing assets or liabilities from fixed to floating rates and vice versa. In the case of non-financial institutions and sovereigns, their counterparty is usually a financial institution that acts as a market maker and earns about 3 to 4 basis points (i.e. 0.03% to 0.04% p.a.) on a pair of offsetting transactions. When a financial institution enters into a pair of offsetting swaps with different counterparties, it is exposed to credit risk (i.e. the default risk of one or both of its counterparties).

Liquidity in the London inter-bank lending market tends to be high during normal times, but it can suffer from extreme illiquidity when counterparty risks increase significantly during times of crisis. As recently revealed, the underlying LIBOR rates may also be susceptible to manipulative

[121] The two main multi-dealer electronic platforms for IRS trading are Bloomberg's Fixed Income Trading platform (FIT) and Tradeweb's Dealerweb platform. Both are request-for-quote platforms that allow dealers to provide live, comparable and executable quotes to buy-side customers. As of August 2012, FIT had 27 participating dealers and Dealerweb had 22 participating dealers.

conduct despite being set by a large panel of banks. One measurement of the liquidity of the underlying money market is the spread between LIBOR and the Overnight Indexed Swap (OIS) rates.[122] For the European market, the equivalent measure is the spread between the 3-month EURIBOR and the Euro Overnight Index Average (EONIA).

The recent case of LIBOR and EURIBOR manipulation is an illustration of how conflicts of interest, arising from contemporaneous participation in the derivative and underlying markets, can incentivise manipulative conduct. As participants in the underlying markets, banks had an incentive to signal lower funding costs. Some of the banks involved were writing interest rate swaps on LIBOR and EURIBOR – the two reference rates they also had a role in setting. This created strong incentives for traders in the investment banking arm to attempt influencing the treasury function of the banks to manipulate the reference rates in such a way as to profit from the derivative positions that the investment arm had taken.

4.2.2.2 Credit markets

A credit derivative is an agreement designed to shift credit risk between the parties. Its value is derived from the credit performance of the reference entity, which can be one or more corporations, sovereigns or debt obligations. The most common type of credit derivative is a credit default swap (CDS), which essentially insures the holder against potential default losses stemming from an underlying credit instrument, such as a bond. CDS contracts can be traded on either a single-name basis, in baskets,[123] or via various indices.[124] CDS are the most operationally-standardised of all OTC derivatives, with almost 98% of all CDS eligible for electronic processing.

The CDS market is relatively concentrated in comparison with other OTC derivatives markets. The end-users are dominated by financial institutions, which use CDS to trade corporate and sovereign credit risk. The sell-side of the industry is dominated by a relatively small group of large dealers, mainly the G15 banks. Furthermore, many of these large investment banks serve both as counterparty and a reference entity. If such a bank fails, it may be difficult for protection holders to find adequate replacement protection, since other players may also be affected. This has led to a highly interconnected network of dealers trading with one another to hedge their own risks. Thus, inter-dealer trading accounts for the great majority of the total CDS market, with high contagion risk as a result of interaction between credit and counterparty risks. Overall, it can be difficult for investors to assess the true level of counterparty risk they face.

Deterioration in the credit quality of a reference entity negatively affects the CDS seller's financial position by inflating the market value of the CDS contract and, thus, worsening its own credit risk. The resulting additional margin and collateral requirements on the CDS seller further deteriorate its liquidity condition. In the CDS market, an increase in the credit risk of CDS sellers (i.e. the counterparty risk for CDS holders) makes the insurance they provide less valuable, reducing the spreads they can charge. In addition, an increase in counterparty risk can reduce participants' willingness to trade with each other, leading to a system gridlock. In such situations,

[122] LIBOR is an indicator of the floating rates at which banks are willing to lend to each other. OIS is a swap rate based on central banks' overnight rate, which is normally fixed. The difference between LIBOR and OIS reflects credit and liquidity risk.

[123] Baskets are a portfolio of debt assets (usually, corporates), with a well-defined trigger mechanism. Once the trigger mechanism is struck, the default payment is made.

[124] The primary index family is iTraxx in Europe and CDX in the US. Various sector and credit rating versions of these indices are available, as well as separate indices for asset-backed securities.

the credit rating of the CDS seller may eventually be downgraded, putting even further pressure on the magnitude of margins and collateral required. In extreme cases, all this can lead to the CDS seller's default. This dynamic is exactly what happened in the case of American International Group in 2008 (see Box 4.3.1).

Credit protection provided by credit derivatives can induce a series of incentive problems. Lenders may face weak incentives to screen for creditworthy borrowers (adverse selection) and their credit history (moral hazard), because default losses are passed on to the protection provider. The moral hazard problem, in turn, can have an adverse effect on market efficiency. For example, weak incentives to monitor credit risk could result in simultaneous over-pricing of credit products (e.g. by the CDS seller) and under-pricing of credit risk of the underlying bond. Such behaviour can lead to excessive risk-taking and cause large, correlated losses or even defaults, thus inducing instability in the financial system.

Credit protection provided by credit derivatives can also induce other disincentives for monitoring credit risk. First, individual banks' risk appetite increases when they have access to credit insurance. This could lead to over-lending and an increase in aggregate risk in the system. Second, banks may choose actively to correlate their risk exposures and to adopt risky balance sheets, as long as other institutions are likely to do the same, because the threat of systemic failure may make public bailouts more likely. This increases systemic risk and scope for contagion. In theory, the CDS market for corporate bonds is particularly vulnerable to insider trading due to the fact the many trading parties also operate in the underlying credit market. However, there is no empirical evidence of manipulation of the CDS or the related markets, such as the underlying bond market or the equity market.

The trade repository for CDS operated by the Depository Trust & Clearing Corporation (DTCC) offers the most detailed and comprehensive public and private reporting of post-trade information amongst all asset classes. This repository holds transaction level data, as opposed to position data in trade repositories of other asset classes. A number of electronic trading platforms offer good pre-trade transparency. The CDS market is generally quite liquid, except during periods of crisis.

Bonds issued on the primary market are primarily acquired by financial institutions and often re-traded in the secondary market. Investors typically raise the capital needed for investment in primary markets by selling in secondary markets the bonds that no longer suit their investment strategy. As a result, there is a close relationship between the trading activity in the primary and secondary markets. Thus, a liquidity reduction in secondary markets can affect adversely the liquidity in primary markets.

The underlying bond markets are fairly concentrated in comparison to other underlying markets explored in this study, with G15 banks acting as the major book-runners (underwriters) of bonds. Most bond trading occurs on an OTC basis and there is currently no comprehensive post-trade reporting, except for the US Trade Reporting and Compliance Engine (TRACE) for corporate bonds.[125] However, a number of electronic trading platforms offer real-time pricing with some form of pre-trade transparency.[126] Liquidity in underlying bond markets has fluctuated significantly in the past, particularly during periods of crisis.

[125] TRACE has been collecting eligible corporate bond trade data since July 2002, and started collecting agency debt in March 2010. These data are available to all market participants in real-time and it represents 99% of all US trading activity.

[126] As with IRS, Bloomberg FIT and Tradeweb are the two most widely used multi-dealer platforms.

4.2.2.3 Commodities

OTC commodity derivatives remain a small fraction of the overall OTC derivatives market at somewhere between 2% and 3% of the total gross market value. The principal OTC traded commodity derivatives include forwards, options and swaps. Whilst a high proportion of energy and metals derivatives are standardised, a significant number of them still remain OTC-traded. There appears to be a very low level of standardisation for all other types of OTC commodity derivatives. The vast majority of OTC commodity derivatives are written on commodity futures instead of the underlying commodities themselves. Commodity futures contracts are highly standardised, with relatively dispersed, transparent and liquid markets. A futures contract is, thus, much more liquid and easier to trade than the underlying commodity itself.

It is much easier to take delivery of live-cattle futures contracts than the cattle themselves. The latter involves delivery to a specific geographical location at a specific time, implying further storage, feed and transportation costs. Furthermore, in most cases futures options (as opposed to 'spot options' directly on the underlying commodity) do not lead to delivery of the underlying asset, since the underlying futures contract is usually closed out prior to maturity. Naturally, this cannot be done in the case where the underlying asset is the commodity itself. Moreover, the latter case also requires the investor to have sufficient capital to take delivery, since it requires the full strike price to be paid. Finally, apart from the lower cost of trading futures options (compared to spot options), futures and futures options have the advantage of being traded on the same exchange, facilitating hedging, arbitrage and speculation.[127]

There has been a very significant growth in the trading of OTC commodity derivatives since the mid-2000s, corresponding to a period of increased participation by non-commercial traders.[128] This is known as the 'financialisation' of commodity markets. Commodity derivatives have recently seen a strong increase in trading activity and open positions by institutional investors.[129] There is evidence that the financialisation of commodities and commodities index trading in particular has improved the efficiency of the commodity market. It decreases the cost of hedging for short position holders who are predominantly sellers of the physical commodity, whereas index funds buy and hold long positions. At the same time, the growing participation of financial investors in commodity derivatives markets has increased the interconnectedness of financial markets. This implies stronger commodity price exposures to shocks originating in other parts of the financial system, as well as changes in the relative demand for index versus non-index commodities and short versus long maturities.

Thus, financialisation has brought with it increased scope for contagion, because diversified financial investors adjust their positions also in response to developments in markets for other assets. Conversely, shocks to commodity derivatives markets could also have consequences for equity markets, for example, in the context of binding leverage constraints of financial investors.

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[127] Hull (2009).

[128] The terms 'commercial trader' and 'non-commercial trader' are used by the US Commodity Futures Trading Commission (CFTC) to distinguish between different types of commodity market participants. Commercial traders are those who use futures or option contracts for hedging purposes, i.e. they hold positions in both the underlying commodity and in the futures (or options) contracts on that commodity. By contrast, non-commercial traders do not own the underlying asset or its financial equivalent. Thus, non-commercial traders tend to hold a net aggregate long position, whereas commercial traders tend to hold a net aggregate short position.

[129] Particularly, two kinds of purely financial investors are increasingly present in the market: hedge funds with flexible trading strategies across commodities, long/short exposures and maturities; and index funds with passive, long-only investment in short maturities.

There is indeed evidence of increased co-movement of asset returns due to financialisation, whereby commodities are becoming a less effective diversification tool for investors[130]. It may also means that price volatility is now more easily transmitted to the underlying markets. However, there is no consensus on whether the financialisation contributed to the 2006-08 commodity price bubble.

There is no reliable, comprehensive data on the level of concentration in either the OTC derivatives or the underlying commodity markets. Pre-trade pricing data on OTC commodity derivatives are not available widely to the market, with brokers and IDBs playing a major role in facilitating OTC commodity derivatives trading. Nevertheless, pre-trade data on a number of OTC commodity markets (especially, energy and agricultural instruments) are available through a number of electronic IDB platforms. There is currently neither public post-trade reporting of OTC commodity derivatives trades, nor data on the liquidity of these markets. DTCC has launched a commodities trade repository but as of October 2012, no data had been made available publicly.

The underlying commodity markets are extremely diverse and span from agricultural products, to base/industrial metals and precious metals, to crude oil, energy and other minerals. Different types of commodities exhibit different characteristics, which affect the way they are traded. For example, agricultural commodities tend to be perishable, heterogeneous in quality and low in value. Precious metals tend to be storable, homogeneous in quality and high value. Some types of commodities, such as electricity, are mostly non-storable. Commodities can be traded either OTC or on an exchange. OTC commodity markets are essentially wholesale spot markets, where producers, refiners and wholesalers transact with each another. These markets usually involve physical delivery and are decentralised. Exchange-based commodity markets are centralised, regulated and generally transparent. Over time, commodity exchanges have developed from spot into futures markets, with some 90% of the total value dominated by precious metals and indices.

4.2.2.4 Equities

Equity derivatives are products that derive their value from single company stock, a stock portfolio of quoted companies or a stock index. The OTC equity derivatives market is relatively concentrated and the smallest of all the OTC derivatives markets. The market is rather non-transparent, with limited reporting of post-trade information by DTCC to regulators only and relatively few electronic trading platforms. OTC equity derivatives market displays a low level of standardisation relative to other asset classes and little data on liquidity. The underlying equity markets exhibit low level of concentration. They are transparent and liquid, since most stock trading occurs on open exchanges. By some estimates, OTC equity trading represents 16% of the total turnover in European equity markets.

4.2.2.5 Foreign exchange

OTC FX derivatives include deliverable and non-deliverable (i.e. settled in the same currency) forwards, swaps and options. The FX derivatives market has historically been an OTC market, in which dealers design and offer a wide range of tailored products to meet the specific currency and risk management needs of market participants. At present, only FX futures are traded on organised exchanges.

The large majority of OTC FX derivatives transactions are under one year in duration, whereas the typical maturity of OTC derivatives in other asset classes is between one to five years. This

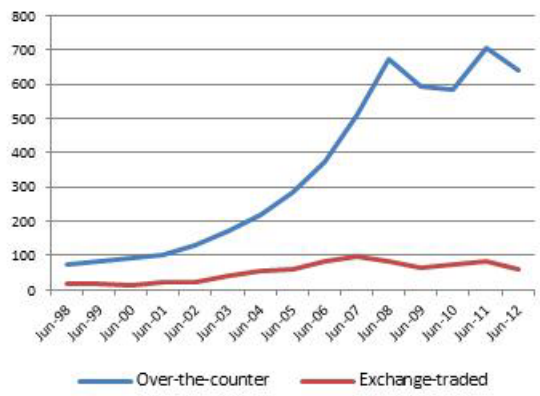
[130] For example, see Silvennoinen et al (2010), Büyüksahin et al (2011) and Tang et al (2010).

implies lower level of counterparty risk. The concentration level in the OTC FX derivatives market is relatively low. Electronic trading platforms provide some degree of pre-trade and post-trade transparency, albeit in a rather decentralised fashion. The OTC FX derivative market is generally liquid. There is a high level of operational standardisation in non-deliverable forwards (NDFs) and a moderate level of standardisation in exotic options.

The underlying currencies are completely standardised and the level of concentration in FX spot markets is rather low, with many currency traders. The bulk of spot market trading takes place in the UK and the US, with financial institutions accounting for the majority of trades. This underlying market is quite liquid and has become increasingly more so over the past decade. In contrast to OTC FX derivatives, a high proportion of transactions in the spot market occur either through electronic trading or broker platforms. This results in a reasonably good pre-trade and post-trade transparency in the spot market despite its low level of decentralisation and OTC nature.

4.2.3 Transaction and market structure

Chart 4.2.5 **OTC vs. exchange-traded derivatives (notional amounts outstanding, trillion USD)**



Source: BIS

The OTC market expanded rapidly over the past decade, decreasing for the first time since 1998 in 2008. Today roughly 85% of the derivatives market in terms of notional amounts outstanding is traded OTC.

Some market segments, such as interest rate and FX derivatives, are mature and have strong market infrastructures and risk management systems in place. Other segments, such as equity derivatives, are less mature and have less developed infrastructures in place.

Whether a derivative contract is standardised or bespoke determines how the market has structured the delivery of trade and post-trade chain functions:

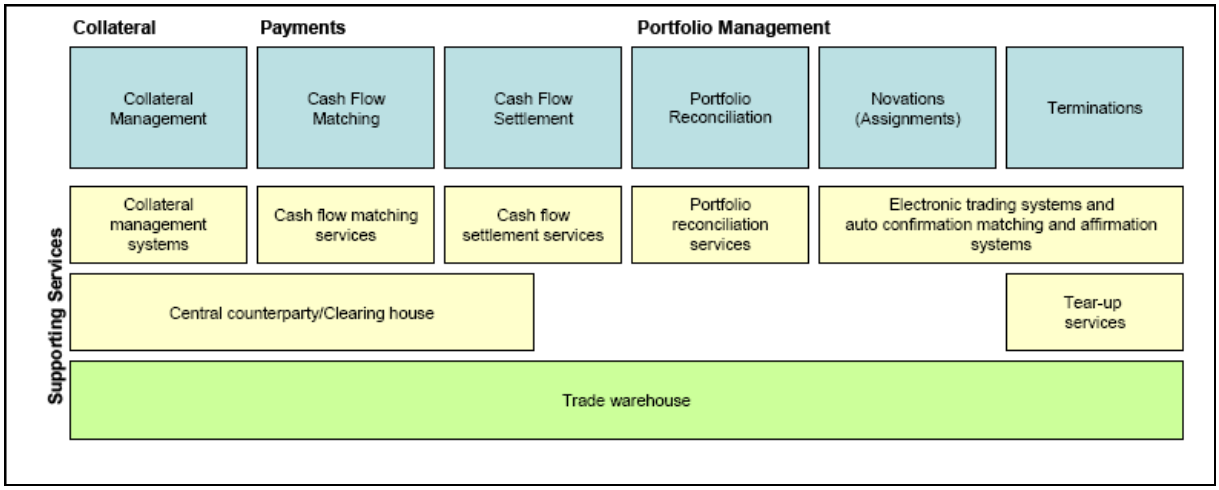
- **Trade execution** occurs when two counterparties agree to a transaction. On-exchange, orders are matched automatically on derivatives exchanges' order books. OTC execution may take a variety of forms, depending on the contracts and market preference, occurring by phone or electronically on private exchanges (e.g. inter-dealer networks). Electronic trading has increased rapidly in recent years, driven in part by the advent of hedge funds, which have different trading needs compared to corporates.

- **Trade confirmation** implies verification of the terms of trade after execution (affirmation) and final confirmation. On-exchange, this occurs automatically within the exchange's matching system. As regards OTC, the most standardised (“plain vanilla”) OTC contracts use electronic third-party services (e.g. Markit Wire, DTCC's Deriv/SERV etc.) for affirmation and confirmation.

- **Clearing** is the function by which post-trade risks are managed over time. Contrary to equity markets, post-trade aspects (e.g. exchange of cash and transfer of ownership) under derivative contracts may last for up to several years. This can lead to the build-up of huge claims between counterparties subject to default risk (called 'counterparty credit risk' for the opposite party).

Clearing can either occur at bilateral level between the two counterparties to a particular trade or at multilateral level by means of a central counterparty (CCP), which becomes the counterparty to all other counterparties by stepping in between two trading parties (i.e. the trade is 'novated'). A CCP changes the terms of trade in two ways: it allows multilateral netting of exposures with all participants in the CCP (organised by asset class) and it acts as mutual insurance against default of one of the participants. On-exchange, clearing is done by a CCP. OTC, clearing is mostly done bilaterally between the parties, but increasingly also via a CCP. An OTC derivatives trade goes through several processing steps from the point of trade execution to confirmation. Furthermore, several one-off (e.g. the termination of a contract) or recurring events (e.g. collateral management and settlement of cash payments) need to be managed during the lifetime of an OTC derivative contract, stemming from the rights and obligations stipulated in it. Chart 4.2.1 below provides an overview of the various services involved.

Chart 4.2.1**: Lifecycle elements of an OTC derivatives transaction**



Source: BIS

The processes that have been developed to manage these events tend to be quite complex and in many cases they are highly interconnected, i.e. the output of one process is used as an input for another. A high level of automation is, therefore, desirable to avoid situations where delays in one process have a knock-on effect on other processes. This logic does not apply only to the internal processes of individual counterparties, but is equally valid for the interaction between counterparties. The level of automation is, in general, directly proportional to the level of standardisation of a contract: the higher the level of standardisation, the more automated processes can be used, and vice versa. The same logic applies to the adoption of centralised infrastructure, such as CCPs and trade repositories: their adoption requires relatively high levels of standardisation (especially in the case of CCPs).

Trading on exchanges is, in principle, accessible to everyone (either directly or indirectly), although in practice only a very small portion of the trading volume is due to retail investors. This wide accessibility is one of the main reasons for exchanges to be tightly regulated. While there are numerous derivatives exchanges out there, trading in a particular type of derivative tends to be concentrated on one venue. Finally, a derivatives exchange is usually served by a central counterparty, which guarantees the trades executed on the exchange, nets mutually offsetting contracts and ensures that exposures are sufficiently collateralised.

Dealers play an important role in OTC derivative markets, acting both as prime brokers (assuming counterparty risk and providing leverage) and market makers (structuring products and providing liquidity). For example, it is unlikely that two companies would contact a financial institution at the same time to take opposite positions in exactly the same type of swap. Hence, financial institutions have to act as market makers by entering into a swap without having an offsetting swap with another counterparty. Hence, market makers have to hedge the associated risks by using other financial instruments, such as bonds, forward rate agreements (FRAs) and IRS.[131] Thus, to be an effective dealer requires scale and reach. Accordingly, there are strong forces pushing for a centralised dealer structure. The crisis has somewhat altered the balance between dealers though, with clients becoming reluctant to use only one prime broker, preferring to split business among a few prime brokers instead.

Unlike in the case of exchange-traded derivatives, the use of CCPs has been far less pervasive in the OTC derivatives market. To a certain extent, this has been compensated by alternative risk mitigation arrangements, such as portfolio compression, bilateral exchange of collateral and portfolio reconciliation. **Portfolio compression** is a process whereby mutually offsetting trades are terminated. In OTC derivatives, participants build up gross positions that far exceed their net risk position. Portfolio compression reduces the overall amount of trades and, thus, the notional size of the market by eliminating off-setting trades, offering significant benefits for market participants. Portfolio compression typically reduces:

- Counterparty credit risk (without changing the net market exposure);
- Operational risk and costs; and
- Cost of capital.

Overall, the scope for portfolio compression depends on the level of standardisation: the more standardised the contract, the easier it is to match eligible trades and to compress them. It also makes more sense for market-making institutions, because they are acting as intermediaries and exposed to a two-way flow (as opposed to e.g. the buy-side, which typically has either long or short position). In principle, portfolio compression can be applied to all OTC derivatives with sufficient liquidity to motivate netting down of gross positions. In practice, it is predominantly used in interest rate, and CDS markets. Portfolio compression can also be used to compress a CCP's portfolio, facilitating default management. The smaller and less complex the defaulted party's portfolio, the easier and faster it is to manage the consequences of a participant's default.

[131] Hull (2009).

The underlying principle of **collateralisation** is that both parties mark to market contracts to monitor the build-up of claims as the contract's value evolves. Consequently, the party whose market position is favourable is entitled to ask its counterparty for collateral to mitigate the risk that the counterparty may eventually not honour its obligation (e.g. due to default). Collateral is typically provided in cash and exchanged on a net basis, i.e. a single net cash value is calculated for the overall OTC derivative portfolio between two counterparties. Thus, both counterparties can benefit from cross-margining, whereby the build-up of claims in one derivatives market segment may be compensated by the build-up of liabilities in another. Other types of collateral include securities, letters of credit, guarantees and commodities.

Overall, managing collateral with a wide variety of counterparties may be challenging. Hence, third party vendors provide **portfolio reconciliation** services. In 2008, all major dealers started to reconcile all OTC derivatives between themselves and the major counterparties. Reconciliation also provides processes for resolving disputes, allowing counterparties to monitor credit exposure more effectively. Despite these risk management tools, several weaknesses remain associated with bilateral clearing:

- The institution-specific risk valuation methods lead to frequent disputes between counterparties as regards the mark-to-market value of their contracts and the corresponding collateral obligations they entail. While daily valuation and (close-to-daily) exchange of collateral is the norm for major market-makers, the frequency falls substantially in the case of second and third tier institutions. Weekly and even monthly valuation and exchange of collateral continues to be an existing market practice.

- Collateralisation is not comprehensive: 71% of all trades were covered by collateral agreements in mid-2012, whilst the available collateral pointed out that some 51% of the gross credit exposure could be covered by collateral. Thus, between $1.1tn and $1.9tn of credit risk in the OTC derivatives market remains uncollateralised[132]. In addition, collateral requirements are often adjusted based on credit ratings, effectively reducing required collateral levels for counterparties with high credit ratings. The crisis has amply illustrated the deficiency of this approach[133]. Finally, collateralisation is generally based on mark-to-market values, disregarding the potential cost of replacing the contract should the original counterparty default.

- Bilateral clearing requires management of numerous clearing relationships with the individual counterparties, necessitating investments in systems and manpower. Such a complex web of bilateral networks makes it extremely challenging, if not impossible for an institution to gauge its aggregate credit risk exposure in view of the bilateral exposures amongst its counterparties that are not transparent to third parties such as itself.

[132] ISDA (2012a).

[133] In the case of AIG, the CDSs sales were not subject to full collateral requirements due to the triple-A credit rating of the parent company (see Box 4.3.1).

4.3 WHY REGULATE OTC DERIVATIVES?

4.3.1 Light-handed regulatory approach prior to the crisis

Given the global nature of the financial markets and the fact that US financial institutions have usually been at the forefront of innovation in this sector, it is worth taking a look at the regulatory developments in this important jurisdiction, which are well documented in the US Financial Crisis Inquiry Commission Report (2011).

Prior to the Dodd-Frank Act of 2010, the principal legislation governing OTC derivatives markets in the US was the Commodity Exchange Act of 1936, which originally applied only to derivatives on domestic agricultural products. In 1974, Congress amended the act to require that futures and options contracts on virtually all underlying assets, including financial instruments, be traded on a regulated exchange. The amendments also created a new federal agency - the Commodity Futures Trading Commission (CFTC) – to regulate and supervise the market. Outside of this regulated market, an OTC market began to develop and grew rapidly in the 1980s. In response to worries of the large OTC derivatives dealers, the CFTC sought to exempt certain non-standardised OTC derivatives from the Act's requirement to trade on a regulated exchange and from certain other provisions of the Commodity Exchange Act.

In response to a series of financial scandals, the US General Accounting Office on financial derivatives highlighted the dangers stemming from OTC derivatives activity concentration among 15 major dealers, noting that a sudden failure or abrupt withdrawal from trading by any of them could cause liquidity problems in the markets and could also pose risks to the others, including federally insured banks and the financial system as a whole. Although Congress held hearings on the OTC derivatives market, the adoption of regulatory legislation failed amid intense lobbying by the market players and opposition by the Fed. Following a series of other scandals, some of which are listed in the next section, debate intensified in 1998. The CFTC wanted to re-examine the way it regulated the OTC derivatives market, but other regulators publicly criticised it. The Treasury, the Fed and SEC Chairmen issued a joint statement describing their "grave concerns" as regards the CFTC's move, proposing a moratorium on its ability to regulate OTC derivatives.

In October 1998, just weeks after the recapitalisation of the LTCM hedge fund, Congress passed the requested moratorium. In December 2000, Congress went further and passed the Commodity Futures Modernization Act (CFMA), which in essence deregulated the OTC derivatives market and eliminated its oversight by both the CFTC and the SEC. However, the latter retained antifraud authority over securities-based OTC derivatives, such as stock options. The CFTC regulatory powers relating to exchange-traded derivatives were also weakened but not eliminated. Thus, the CFMA effectively shielded OTC derivatives from virtually all regulation or oversight. Subsequently, other laws enabled the expansion of the market. For example, under a 2005 amendment to the bankruptcy laws, derivatives counterparties were given the advantage over other creditors of being able to immediately terminate their contracts and seize collateral at the time of bankruptcy (the so-called "close-out netting" process).

The OTC derivatives market boomed. In the seven and a half years from then until June 2008, when the market peaked, outstanding OTC derivatives increased more than sevenfold (see Chart 4.2.5). One reason for this rapid growth of the derivatives market was the capital requirements

advantage that many financial institutions could obtain through hedging with derivatives. OTC derivatives let derivatives traders increase their leverage. For example, entering into an equity swap[134] that mimicked the returns of someone who owned the actual stock may have had some upfront costs, but the amount of collateral posted was much smaller than the upfront cost of purchasing the stock directly. Often no collateral was required at all. Traders could use derivatives to receive the same gains, as if they had bought the actual security, but with only a fraction of a buyer's initial financial outlay.

In the EU, the traditional view that OTC derivatives are financial instruments for professional use and thus require only light-handed regulation equally prevailed prior to the crisis. The principal regulation that OTC derivatives were subject to was in the context of the Basel framework for regulatory capital requirements.

4.3.2 Role of OTC derivatives in the crisis

Throughout financial history, derivatives have often been at the heart of financial scandals, ending in significant losses and often leading to defaults and bankruptcies. In many cases, operational risk was not properly managed, resulting in trading losses that were hidden from the risk management function of the financial institution and were piling up for a period of up to several years. A selection of examples is provided in Table 4.3.1 below:

Table 4.3.1 **Selected financial scandals**

Year	*Affected entity*	*Trigger*	*Instruments used*	*Losses*
1993	**Metallgesellschaft AG**	**Margin calls**	**Oil futures and swaps**	**$1.5bn**
1994	**Orange County, US**	**Collateral calls**	**Structured notes (inverse floaters)**	**$1.69bn**
1994	**Bankers Trust**	**Client litigation**	**Interest rate swaps**	**$288m**
1995	**Barings Bank**	**Hidden losses**	**Stock index futures & options**	**$1.47bn**
1996	**Sumimoto Corp.**	**Hidden losses**	**Copper derivatives**	**$2.6bn**
1998	**LTCM hedge fund**	**Margin calls**	**Equity swaps and futures**	**$4bn**
2002	**Allied Irish Banks**	**Hidden losses**	**Foreign exchange options**	**$691m**
2003	**National Australia Bank**	**Hidden losses**	**Foreign exchange options**	**$268m**
2005	**China Aviation Oil**	**Collateral calls**	**Oil options**	**$550m**
2008	**Société Générale**	**Hidden losses**	**Stock index futures**	**$7.2bn**
2008	**AIG**	**Collateral calls**	**Credit default swaps**	***$182bn rescue***
2012	**UBS**	**Hidden losses**	**Exchange-traded funds**	**$2.3bn**
2012	**JPMorgan**	**Trading losses**	**Credit default swaps**	**$5.8bn**

[134] See Annex I for more details on this type of swap.

Source: PRMIA, Financial Times

Derivatives have also played a role in exacerbating stock market crashes. For example, arbitrage between the equity index futures and the underlying stock market transmitted the futures market dive to the underlying stock market in October 1987. Derivatives have also been implicated in previous macro financial crises, such as the one in Mexico in 1994. As an illustration, Mexican banks used swaps and structured notes[135] to circumvent prudential regulations, making it more difficult for the Mexican authorities to figure out the exact state of health of the domestic banking sector.

The US Financial Crisis Inquiry Commission Report (2011) concluded that OTC derivatives significantly contributed to the crisis. The main elements of significance included uncontrolled leverage, lack of transparency, insufficient capital and collateral requirements, speculation, interconnectedness amongst firms and market concentration. In particular, CDS played an essential role in enabling the creation of the so-called synthetic CDOs, which amplified the housing market losses and helped spread them throughout the financial system. The existence of millions of OTC derivatives contracts between systemically important financial market players added to uncertainty and escalated panic. In other words, the OTC derivatives market contributed to the spreading of the initial shock beyond its point of origin (i.e. the US subprime mortgage market) and to magnifying it into a full-blown global financial crisis. Once the shock reached the CDS market, it rapidly spread throughout the system via the complex web of counterparty interconnections that characterise this concentrated market. The AIG debacle described in Box 4.3.1 below is highly illustrative in this respect.

4.3.3 Policy implications

The crisis and the role played by some OTC derivative market segments require a deeper discussion on how to reconcile the clear value played by OTC derivative markets – satisfying, as they do, the demand for flexible and bespoke derivative contracts to manage specific, non-standard risks – with an *a priori* societal preference for transparent trading venues, as public and standardised as possible for the purpose of risk assessment and price determination.

The recent financial crisis exposed weaknesses in the structure of OTC derivatives markets, facilitating the build-up of systemic risk. While markets in certain OTC derivatives asset classes continued to function well, the crisis highlighted the significant contagion potential due to the interconnectedness of OTC derivatives market participants and to the limited transparency of counterparty relationships. Thus, the latest financial crisis brought OTC derivatives and complex structured products to the forefront of regulatory attention. For example, the report of the High Level Group chaired by Jacques de Larosière highlighted the risks associated with the rapid explosion of the use of credit derivatives and stressed the need to address the lack of transparency in the market. The report recommended to simplify and standardise OTC derivatives and to introduce CCP clearing[136].

[135] These financial instruments offer payoffs similar to fixed income products (such as bonds), but their value depends on the price of some underlying assets.

[136] The report is available at http://ec.europa.eu/internal_market/finances/docs/de_larosiere_report_en.pdf (see p.25).

From a regulatory perspective, there are two aspects of the OTC derivatives markets that require particular attention. First, financial innovation has occurred at a rapid pace in these markets, which have considerably grown in a relatively short period of time. Unlike in the exchange-based derivatives markets, the exposures held by participants in the OTC derivatives markets have been very opaque. As a result, regulators and market participants have faced significant challenges in monitoring and managing counterparty risk. Primary concerns in the latest high-profile failures of financial institutions have all had to do with uncertainty as regards counterparty risk. Financial regulation can improve the management of risk by increasing the transparency of OTC derivatives markets.

Box 4.3.1: The American International Group (AIG) debacle of 2008

The financial crisis demonstrated that derivatives can lead to an excessive concentration of risk in the hands of a handful of market players. One such player was the US insurance company AIG. The UK subsidiary of AIG accumulated a large exposure to the US subprime mortgage market by selling to big financial institutions insurance against losses on these securities in the form of highly customised CDS contracts. AIG had accumulated a gross exposure of $482 billion in notional amounts. Established CDS dealers tend to run a balanced book, acting solely as the intermediaries. However, AIG was a significant net seller of protection, with its net short position only slightly below the gross one at $384 billion.

Due to its high credit rating (AAA), AIG managed to negotiate favourable collateralisation agreements, with a special clause stipulating that it did not have to post any collateral as long as it maintained this rating. This arrangement enabled AIG to enter into more contracts than would have been possible, if collateral were required to back each contract. This also exacerbated the pro-cyclicality of the collateral agreement, once collateral became due.

The accumulation of large positions by AIG was also facilitated by the lack of transparency, vis-à-vis both the market and the regulators. Due to the OTC nature of the contracts, none of its counterparties was aware of the overall exposure AIG had to the subprime mortgage market and, thus, could not price the associated counterparty risk correctly. As discussed earlier, in economics this is known as the counterparty risk externality. In addition, this lack of transparency prevented regulators from detecting the build-up of risk.

The severe deterioration of the subprime mortgage market led to losses on securities that were backed by pools of subprime mortgages. As AIG had insured those losses, it had to compensate many CDS holders at once, prompting the three biggest credit rating agencies to downgrade the company in September 2008. The downgrade triggered the special clause in the collateral agreement, which opened the gates for what turned out to be a massive collateral call that AIG was unable to meet, pushing it to the brink of bankruptcy. The bankruptcy of AIG would have led to significant losses at the big financial institutions holding the CDS contracts. The US government decided to intervene and rescue AIG at the cost of $182 billion.

Secondly, there has been growing concern that the trading of OTC derivatives creates instability in the underlying asset markets and the wider financial system. These concerns warrant serious consideration. Derivatives are highly leveraged instruments that can facilitate excessive risk-taking. Trading strategies in OTC derivatives can yield high returns, but are also prone to generate significant losses when they fail. Due to the highly interconnected nature of financial markets, instability may be transmitted quickly to other markets, including those in the underlying assets. In addition, the opacity of OTC derivatives markets may also make derivative and underlying markets more susceptible to manipulation.

The near-collapse of Bear Sterns in March 2008, the default of Lehman Brothers on 15 September 2008 and the bail-out of AIG the following day demonstrated the shortcomings in the functioning of the OTC derivatives market. Within that market, regulators devoted particular attention to the role that CDS played during the crisis. In terms of risk characteristics, the early focus on CDS was justified in view of its:

- Binary and discontinuous payoff structure;
- Concentrated dealer market structure;
- Valuation difficulties, especially for the less liquid single name part of the market; and
- Lack of solid risk management practice.

CDSs involve significant counterparty risk, because these contracts are not fungible. In other words, market participants need to turn back to the original counterparty (usually a dealer) to close a position. Although the same could be achieved by entering into an opposite position with a different counterparty, such strategy would still leave the market participants exposed to counterparty risk. Volatility in the credit risk of market participants can lead to excess correlations during times of crisis, amplifying the effects of credit risk re-pricing and leading to price volatility in the entire system. There is some empirical evidence that during the 2008 crisis, a systematic re-pricing of counterparty risk was the main factor that amplified the observed increase in correlation between CDS spreads[137]. Changes in the fundamental determinants of credit risk accounted for only a small fraction of the contagion experienced during that time. In other words, complexity of the market meant that participants were no longer able to judge properly the creditworthiness of their counterparties, which contributed towards contagion effects.

At the same time, OTC derivatives vary substantially across the different market segments. Most OTC derivatives other than in the credit segment appear less risky, as pay-out structures are more continuous in nature (e.g. IRS, FX and equity derivatives), the market more disperse (e.g. IRS, as well as FX, equity and commodity derivatives), the underlying markets more liquid and the underlying risks more observable (e.g. foreign exchange, IRS, equity derivatives), risk management measures more solid (e.g. IRS, FX derivatives) and electronic systems more developed (e.g. IRS). Even so, much can be done to strengthen these market segments to ensure financial stability.

[137] See Anderson (2010).

The use of central counterparties (CCPs) has the potential to reduce complexity of the counterparty network, improve the assessment of risk, and enhance transparency. CCP clearing is the most effective way of reducing credit risk and is broadly feasible in all market segments, but it requires safe, sound and common requirements for CCP-eligible products. Although CCP clearing can grow substantially to cover large parts of OTC derivatives, it cannot apply to all OTC derivatives as the necessary prerequisites are not always in place and not easily applicable. It is, therefore, also important to improve product and market standardisation, strengthen bilateral collateral management and to ensure central storage of contract details.

Modern finance has tended to assume that financial market liquidity is a static concept. However, the apparent liquidity of financial markets may be illusory and pro-cyclical. A false sense of security in the stability and liquidity of the financial system can encourage greater leverage. This may result in investors retreating from markets even in case of modest adverse shocks, since leveraged positions are more sensitive to asset price movements. In addition, the development of complex models for valuing derivatives may provide a false sense of security and rigour, leading to pro-cyclical leverage, excessive risk-taking and eventually lack of liquidity in OTC derivatives and underlying asset markets.

Sharp withdrawal of funding by just a few key players can have major liquidity consequences for the entire financial system, as demonstrated during recent crises. Such liquidity considerations might have a serious impact on the interaction between OTC derivatives and their underlying asset markets. When markets are illiquid, market participants cannot promptly exit trades at efficient prices. They can be forced to sell other holdings, causing volatility in seemingly unrelated markets. Lack of liquidity can, therefore, also contribute to contagion. Efficient market literature views liquidity more as a market outcome than a driver, since the level of liquidity is determined by many market factors and it is almost considered a synonym for market efficiency.

The theoretical finding on the relation between liquidity in the derivatives and the underlying markets is that, in most cases, the relative liquidity in the two markets is at a comparable level. This can be explained by the no-arbitrage pricing relation, which predicts that the trading activity would shift from the more liquid derivatives markets to the less liquid underlying markets to exploit the pricing differentials, thereby also equilibrating the relative liquidity conditions in the two markets. However, this no-arbitrage condition does not always hold due to collateral requirements and counterparty risks in the credit pair segment. In addition, liquidity is one of the most important determinants of the scope for manipulation. Constraints on trading possibilities due to limited natural supply or high costs enable the manipulated asset’s price to diverge drastically from its fundamental value.

Better transparency can increase market efficiency. During the 2008 crisis, market participants also had poor information on the actual credit exposures of their counterparties, since most derivatives trades had taken place OTC. It is important to distinguish between regulatory and market transparency. The former is crucial, because it enables regulators to monitor effectively the risk and exposures of the major market players and intervene when necessary to avoid the build-up of excessive concentration of risk that could lead to systemic failures. Overall, the OTC market opaqueness has the potential to cause major contagion and systemic risk. Transparency can reduce market instability by providing a better overview of market prices and volumes, as well as a better understanding of counterparty risk.

Although greater market transparency would significantly benefit uninformed traders, it may dissuade informed participants from making markets by removing the informational advantage that would otherwise be held by these investors. Big traders may also use the opacity of OTC markets to limit the price impact of large trades. Post-trade transparency can induce competitors of a party engaged in large trades to price strategically in anticipation of unloading of inventories, causing large price swings. Post-trade transparency can also encourage herding behaviour by uninformed traders who follow the trades of other market participants. Herding can add momentum and increase price volatility. Overall, pre-trade transparency can foster competition in quote-driven OTC derivatives markets. For example, increased use of multi-dealer platforms would make it easier for end-users to compare multiple price sources. This, in turn, could lead to greater competition between dealers.

Given the global and interconnected nature of financial markets, there is a strong case for regulators to have unfettered access to data beyond their immediate jurisdictions. At present this is not the case. Regulators and supervisors should have regular access to bilateral counterparty exposure data at individual counterparty level for all OTC derivatives segments. This would enable them to conduct network studies, for example, to assess the systemic risk and the scope for contagion. The level and quality of data that is available to regulators in the CDS market should be the minimum standard for all OTC derivatives and underling asset classes in terms of its scope and granularity.

4.3.4 European Commission diagnosis

The Commission focused on three main problems related to the functioning of the OTC derivatives market: (i) the lack of transparency on positions and exposures, (ii) insufficient mitigation of counterparty credit risk, and (iii) insufficient mitigation of operational risks[138].

4.3.4.1 Lack of transparency

As mentioned in section 4.2.2, the OTC derivatives market is opaque by its very nature, because OTC derivatives are privately negotiated contracts. Consequently, any information concerning them is usually only available to the contracting parties. At the same time, it is important to make a distinction between information available to regulators, to market participants and to the general public. The law usually gives regulators the right to request any information (including exposures to single counterparties and positions in particular types of contracts) from the entities they regulate. Information available to the general public is usually limited to aggregate data, because firm-level information is extremely sensitive. In addition to the public information, market participants also know their positions with respect to other market participants.

While regulators can obtain detailed information about the individual positions of the entities they regulate, they lack a full and clear picture of the market as a whole. Neither do regulators know the exact size of the individual OTC derivatives market segments, nor the detailed breakdown of the counterparty positions. This prevents regulators from estimating the relative magnitude of risks with respect to the entities hey regulates. Second, it does not allow them to gain a clear picture as regards the level of interconnectedness in the financial system. This can hamper early

[138] See European Commission (2009).

detection of risks building up both at individual institutions and in the system as a whole. It can also prevent them from accurately assessing the consequences of a market participant's default.

Given the global nature of OTC derivatives markets, regulators need to seek at least part of this information outside of their own jurisdiction. Alternatively, regulators may find this information in a trade repository, provided one exists. However, a trade repository may not maintain all the information regulators need or it may not be able to provide these data due to data privacy issues.

The problem of market participants is almost identical. As stated earlier, a market participant in principle always knows its own exposure to its counterparties. What it does not know, however, is what the exposure of any of its counterparties is to other market participants including, most importantly, its other counterparties. In other words, a market participant knows the direct, but not the indirect exposure that is created when it enters into an OTC derivative contract. This is known as counterparty risk externality. As the counterparties to an OTC derivative contract know only the direct exposures to one another, the collateral set aside to secure their individual exposure cannot adequately cover for the aggregate counterparty risk of their trading party. The financial crisis clearly demonstrated that under distressed market conditions such lack of transparency can generate mistrust among market participants and lead to a drying up of liquidity in the market.

4.3.4.2 Excessive counterparty risk

Derivative contracts bind counterparties for the duration of the contract, which ranges from a few days to several decades, depending on product type and the market segment. During this period, counterparties build up claims against each other, as their rights and obligations evolve in response to changes in the price of the underlying asset. This gives rise to counterparty credit risk, i.e. the risk that the counterparty may not honour its obligations under the contract when they become due. Clearing is the function by which this risk is managed over time. It can be carried out centrally (i.e. through a CCP) or bilaterally. Although both types of clearing are used in the OTC derivatives space, bilateral clearing is the most used form of the two.

The provision of collateral is the most frequently used method to mitigate counterparty credit risk in the OTC derivatives space. However, collateral only offers effective protection against credit exposure if:

(i) Exposure is calculated frequently and accurately;

(ii) Collateral is effectively exchanged in a timely manner;

(iii) Collateral offers comprehensive coverage against overall potential counterparty credit exposure;

(iv) Collateral arrangements are legally enforceable in the event of the counterparty's default.

Bilateral clearing is associated with a number of potential weaknesses in at least three of these aspects. First, while daily valuation and exchange of collateral is the norm for the major dealers, the frequency falls substantially as one moves down to second and third tier institutions. Weekly and even monthly valuation and exchange of collateral continues to be an existing market practice. Second, bilateral clearing fundamentally relies on each party's own assessments of the current value of a particular OTC derivative, which depends on the quality of the risk model used.

The crisis has revealed that risk models used by banks were less robust than previously thought. Finally, the majority of bilateral collateral arrangements only provide for the exchange of variation margin (but no initial margin) and the level of collateral required often depends on the credit quality of the counterparty[139].

There are several consequences arising from the issues listed above. First and foremost, the amount of collateral is generally too low for the level of counterparty credit risk associated with OTC derivatives exposures. The ISDA estimates that some $1.1 trillion to $1.8 of the total gross credit exposure in OTC derivatives remain uncollateralised[140]. Second, infrequent valuation of exposures and exchange of collateral may lead to large margin calls in case of abrupt price movements between calculation dates, which may impose undue stress on the counterparty concerned and may even lead to default, if it lacks the liquidity to meet the call. The same reasoning can be applied to situations where the amount of collateral that needs to be posted depends on the credit quality of the counterparty. Finally, the differences in risk models lead to frequent disputes between counterparties as regards the mark-to-market value of a particular contract and the corresponding collateral obligation it gives rise to. This leads to unwelcome delays to the collateralisation process. The AIG case provides a clear illustration of both the impact of credit downgrade on collateral calls and the uncertainties surrounding valuation of derivatives.

4.3.4.3 Excessive operational risk

The OTC derivatives market allows for a high degree of flexibility in defining the economic and legal terms of contracts. Highly bespoke and complex contracts require significant manual intervention in many stages of the processing. This becomes particularly problematic once the transaction volumes start to increase rapidly. Indeed, the rapid expansion of the OTC derivatives market volumes led to significant processing backlogs of unconfirmed trades, as the development of post-trading processes could not catch up with the rising volumes and increasing complexity of derivatives trades. In spite of the progress made in the past few years, especially in the area of credit derivatives, the problem has temporarily resurfaced during the crisis. Consequently, more needs to be done to foster standardisation. An additional issue concerning standardisation is the impact on liquidity. In general, the more bespoke the product, the less liquid it is (and hence the more difficult it is to sell or replace it, even more so in distressed market conditions).

Low levels of standardisation increase operational risk, i.e. the risk of loss resulting from inadequate or failed internal processes, people and systems. This, in turn, may lead to higher legal risk, it limits transparency and it may even lead to an increase in counterparty credit risk[141]. As indicated earlier, low levels of standardisation also limit the level of adoption of centralised market solutions (i.e. trade repositories and CCPs). One can distinguish between three different types of standardisation, with respect to:

[139] Typically, counterparty with a high credit rating will be asked to post less collateral than one with a lower credit rating. In cases where one of the two counterparties is a non-financial institution or a government-related institution (e.g. the debt management office), the norm appears to be not to ask the latter to post any collateral.

[140] ISDA (2012b).

[141] For example, failure to confirm a transaction may jeopardise its enforceability or the ability to net it against other transactions. Furthermore, to the extent that it allows errors in recording transactions to go undetected, an unconfirmed transaction may cause incorrect measurement and potential underestimation of market or counterparty credit risks.

- **Contract**: e.g. standard legal relationships, confirmation agreements, documentation, market conventions on event handling;
- **Product**: e.g. standard valuations, payment structures, dates; and
- **Process**: e.g. straight-through processing, matching, confirmation and settlement.

As clearly stated in its October 2009 Communication, the Commission decided to focus on the first and third type of standardisation, because high levels of contract and process standardisation are compatible both with the ability of market participants to hedge specific risks and the possibility to adopt centralised solutions (trade repositories and CCPs). Conversely, high levels of product standardisation, while compatible with the adoption of centralised solutions, are not necessarily compatible with the hedging requirements of market participants.

Overall, as substantiated in the previous sections, the Commission focused its regulatory actions in the OTC derivatives domain on reducing counterparty and operational risk, increasing transparency and enhancing market integrity and oversight. Table 4.3.2 below summarises the regulatory objectives pursued in this respect:

Table 4.3.2 **EU regulatory objectives as regards OTC derivatives markets**

Policy goals	*Regulatory objectives*	*EU legal framework*
Reducing counterparty risk	Common safety, regulatory and operational standards for CCPs	EMIR
	Better collateralisation of bilaterally-cleared OTC derivatives contracts	EMIR
	Substantially higher capital charges for bilaterally-cleared OTC derivatives contracts, as compared to centrally-cleared transactions	Capital Requirements Directive (CRD)
	Mandating CCP-clearing for standardised contracts	EMIR
Reducing operational risk	Promoting standardisation of contracts and processing	EMIR
Increasing transparency	Mandating market participants to record positions and all transactions not cleared by a CCP in trade repositories	EMIR
	Regulating and supervising trade repositories	EMIR
	Mandating the trading of standardised OTC derivatives on exchanges and other organised trading venues	Markets in Financial Instruments Directive (MiFID)
	Increasing trading transparency in all derivatives markets, including commodity derivatives	MiFID
Enhancing market integrity and oversight	Extending the scope of market manipulation legislation to OTC derivatives	Market Abuse Regulation (MAR)
	Giving regulators the option to set position limits	MiFID

4.3.5 G20 commitments

In September 2009, G20 Leaders agreed in Pittsburgh that all standardised OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through CCPs by the end of 2012 at the latest. OTC derivative contracts should also be reported to trade repositories, whilst non-centrally cleared contracts should be subject to higher capital requirements. Building on these Pittsburgh commitments, the G20 Leaders committed at the subsequent Toronto Summit to accelerate the implementation of strong measures to improve transparency and regulatory oversight of OTC derivatives in an internationally consistent and non-discriminatory way.

In its October 2010 report on Implementing OTC Derivatives Market Reforms, the Financial Stability Board (FSB) made 21 recommendations, addressing practical issues that authorities may encounter in implementing the G20 Leaders' commitments. The main thrust of the 21 recommendation referred to above is summarised below:

- **Standardisation**: the proportion of the market that is standardised should be substantially increased, including through introducing incentives for market participants and, where appropriate, regulation.

- **Central clearing**: authorities should identify factors that should be taken into account when determining whether a derivative contract is standardised and therefore suitable for clearing. They should also address the requirements as regards mandatory clearing and risk management, the remaining non-centrally cleared markets, as well as supervision and regulation of CCPs.

- **Reporting to trade repositories**: authorities must have a global view of the OTC derivatives markets, through full and timely access to the data needed to carry out their respective mandates. Trade repository data must be comprehensive, uniform and reliable, as well as in a form that facilitates aggregation on a global scale.

Given the global nature of the OTC derivatives markets, the FSB has called for continued international cooperation to achieve consistency. Furthermore, given the continuous innovation in the OTC derivatives markets, market monitoring also needs to continue and exploration of additional measures is recommended[142].

4.4 EU REGULATORY AGENDA

4.4.1 European Markets Infrastructure Regulation (EMIR)

As already mentioned in Chapter 2 of this report, 2012 was marked by the entry into force of the EU Regulation No 648/2012 on OTC derivatives, CCPs and trade repositories – also known as EMIR, covering financial market infrastructures related to OTC derivatives. It is the key

[142] Such monitoring is indeed justified, as shown by anecdotal evidence. For example, the CME Group launched a new futures contract in December 2012, with an OTC swap as the underlying asset. This combination provides investors with an exchange-traded product that has economic characteristics of an OTC product.

component of the post-crisis financial sector regulatory agenda as regards the EU OTC derivatives markets, with the objective to ensure more stability, transparency and efficiency.

The Regulation introduces a reporting obligation on OTC derivatives transactions to trade repositories, a clearing obligation through CCPs for eligible (standardised) OTC derivatives contracts, as well as measures to reduce counterparty credit risk and operational risk for bilaterally cleared OTC derivatives (e.g. as regards margining requirements). The regulation also establishes harmonised rules for CCPs, including as regards their interoperability and organisational, business conduct and prudential requirements. Common rules for trade repositories are also established. Last but not least, the regulation mandates supervisory authorities to have access to the reported data, so as to give them and policymakers full transparency on current market developments.

On 19 December 2012, the European Commission adopted nine regulatory and implementing technical standards to complement the obligations defined under the Regulation on OTC derivatives, CCPs and trade repositories. Their adoption completes the requirements for mandatory clearing and reporting of transactions in OTC derivatives. These standards were drafted by the European Supervisory Authorities and have been endorsed by the European Commission without modification.

Among other things, they cover: criteria for OTC derivatives to be considered eligible for central clearing; margining requirements for non-centrally cleared trades; prudential requirements for CCPs; and the type of data to be reported to trade repositories. In the course of 2013, CCPs will have to apply for authorisation or recognition as part of the new EMIR framework. Once the EU regulators will have verified their safety and soundness, the first decisions imposing clearing obligations will be adopted and enforced.

4.4.2 The main legal requirements

EMIR applies to both financial and non-financial counterparties. Financial counterparties include: investment firms and credit institutions, insurance and reinsurance undertakings, alternative investment funds and undertakings for collective investment in transferable securities (UCITS), as well as pension funds. However, pension funds are currently exempt from mandatory clearing (see section 4.4.3). Only those non-financial counterparties are covered whose positions in OTC derivatives do not exceed a specific threshold are exempt from the central clearing requirement. The thresholds are established for each asset class separately, as follows:

Table 4.4.1 **EMIR thresholds for central clearing by non-financial counterparties**

OTC derivatives by asset class	*Clearing threshold*
Interest rate, FX and commodity derivatives	€3bn each
Credit and equity derivatives	€1bn each

It should be noted that once one threshold is exceed, the central clearing obligation applies to all asset classes of OTC derivatives. The obligations imposed by EMIR include the following:

- Procedures and arrangements in place for timely **trade confirmation**;

- Agreed processes for regular **portfolio reconciliation** between counterparties;
- Processes for **portfolio compression** in case the number of contracts with a counterparty exceed 499;
- Agreed procedures for identification, reporting, monitoring and **resolution of disputes**;
- **Reporting** of all OTC and exchange-traded derivative transactions to recognised trade repositories or to the European Securities Markets Authority (ESMA).

Non-financial counterparties that exceed the clearing threshold must notify their competent authority. They also fall into the same obligation category as financial counterparties, implying shorter confirmation deadlines, more frequent portfolio reconciliation, daily valuations, established procedures for the exchange of collateral, additional reporting on exposure value and collateral, as well as clearing obligation as regards OTC derivatives with a central clearing mandate. The reporting obligations under EMIR apply to all financial derivatives with no exceptions, with more than 60 data fields on counterparties and transactions. There is also an obligation to backload all data from the moment of the entry into force of EMIR – i.e. 16 August 2012.

4.4.3 Clearing scenarios and exemptions

The central clearing obligation under EMIR applies only to standardised OTC derivatives contracts. Standardisation factors include liquidity, availability of pricing information and ability of a CCP to handle a given volume of contracts. In consultation with the European Systemic Risk Board (ESRB), ESMA is responsible for identifying the contracts that fall under the central clearing obligation.

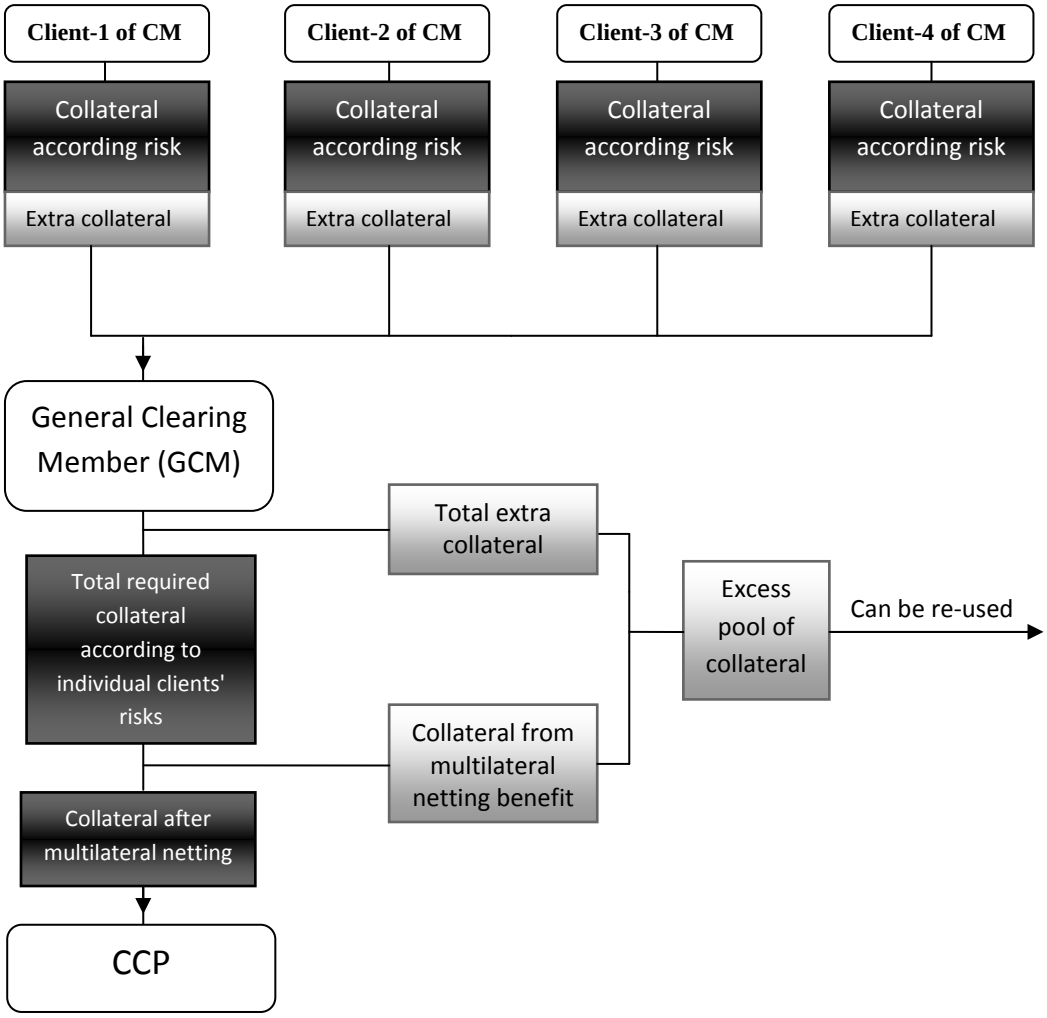
The ability to become a clearing member of a CCP is restricted, because some parties may not be able to fulfil the membership requirements. For example, clearing members have to contribute towards the risk management system of a CCP ("risk waterfall"), which includes access requirements, margin requirements and a default fund. CCPs also stipulate robust capital requirements, which vary according to the asset class cleared. For example, clearing of equities requires a much lower level of capital than IRS clearing. Overall, market participants would need to consider whether it is more efficient for them to become a direct clearing member or a client of a General Clearing Member (GCM), if they are to continue trading centrally cleared OTC derivatives. Thus, the mandatory use of CCPs for clearing eligible derivatives creates business opportunities for GCMs. The latter can be expected to compete strongly for new clients and this may theoretically drive down their risk management standards. Close monitoring is, therefore, necessary to protect the overall effectiveness of the system.

The EMIR technical standards adopted in December 2012 call for indirect clearing arrangements to be established, so as to ensure that indirect clients can obtain an equivalent level of protection as direct clients in a default scenario. In case of a clearing member's failure, indirect clients should be part of the transfer of client positions to an alternative clearing member. Appropriate safeguards against client failure should also exist.

GCMs are in a good position to exploit the pools of collateral they control on behalf of their clients. As illustrated in Chart 4.4.1 below, clients overcollateralise their individual derivatives

positions to cover present and future obligations, usually on a gross margin basis. This provides the GCM with a significant pool of collateral that they may be able to use. In addition, the GCM can benefit from multilateral netting: the GCMs call collateral from clients on a gross margin basis, whereas CCPs only call collateral from GCMs on a net margin basis. This significantly increases the potential pool of collateral available to GCMs even further. As the collateral is normally transferred to the GCM on a title transfer basis, it belongs to the GCM, which can operate with it as it sees fit. This effectively supplies GCMs with prime collateral, extending the chain of collateral claims.

Chart 4.4.1 **Overcollateralisation via a General Clearing Member**



Some Pension Scheme Arrangements (PSAs) make extensive use of OTC derivatives to hedge their liabilities against inflation, currency and interest rate risk. Pension scheme operators have the objective of minimising their cash positions to maximise the efficiency and long-term returns, holding higher yielding investments such as securities instead. The fact that CCPs accept only cash for variation margin purposes could necessitate that pension funds set aside additional cash reserves. This involves opportunity costs for PSAs because of the low level of interest that is earned on cash collateral. To avoid the potential negative impact of the central clearing

requirement on retirement income, it has been agreed to exempt PSAs from the central clearing obligation under EMIR as regards OTC derivatives contracts that are objectively measurable as contributing to lower investment risks. In other words, only trades that are done for hedging purposes are exempted and the PSA must be recognised as an eligible pension type under EU legislation. This exemption is currently valid for a period of three years, with a possible extension for another three years. During this period, OTC derivative contracts entered into by PSAs for hedging purposes will be subject to reporting and bilateral collateralisation requirements.

Intragroup transactions in OTC derivatives contracts are not subject to the clearing obligation either. Such transactions occur between two subsidiaries of the same parent company or between the parent and a subsidiary for risk management reasons or because of regulatory restrictions. Since imposition of the central clearing obligation may limit the efficiency of such intragroup risk management processes, these OTC derivatives contracts will be exempt subject to specific requirements.

Finally, it should be mentioned that bilaterally cleared OTC derivatives contracts will be subject to higher capital requirements and must be managed with appropriate procedures and arrangements in place to measure, monitor and mitigate operational risk and counterparty credit risk. For example, the initial margin calculations will be based on a longer close-out period than for centrally cleared trades. Article 11(3) of EMIR stipulates that counterparties entering into non-standard or complex OTC derivatives contracts may need to implement tools that enable timely trade confirmation. Compliance with these stringent requirements will effectively make such trades more expensive, reducing their potential cost advantage over centrally cleared trades.

4.5 COMPLETING THE REGULATORY AGENDA

Overall, the European Commission is developing several policy initiatives to reinforce financial stability and strengthen financial integration in the EU. Chapter 2 provides an extensive summary of measures adopted and currently being developed by the Commission. The following sections are meant to exemplify them by presenting the financial benchmark and collateral themes, which cut across several work streams of the Commission services.

4.5.1 Ensuring a level playing field

Benchmarks are a statistical measure, calculated from a representative set of underlying data, typically used as a reference price for financial or other contracts. A wide variety of them are currently produced for different purposes. They differ in the underlying data analysed, the methods employed to collect it, how the indexes are calculated and their ultimate use. Financial benchmarks are currently not supervised or regulated. They are, nevertheless, widely used as an indicator of liquidity in the financial system and to price contracts globally. In this regard, the alleged manipulation of interest rate benchmarks (such as LIBOR, EURIBOR and TIBOR) that has been taking place even prior to the crisis has highlighted both their importance and vulnerabilities.

Manipulation of benchmarks can cause significant losses to consumers and investors and distort the real economy. Even the risk of manipulation or doubts about their integrity can undermine market confidence and cause significant disruptions in the proper functioning, stability and

confidence of financial markets. Because of this, regulators across the world have taken steps to restore market confidence and address possible criminal behaviour:

- In March 2012, the US Securities and Exchange Commission (SEC), CFTC and the Department of Justice, together with the UK's FSA and the Japanese Financial Supervisory Agency first announced their on-going investigation to determine whether some banks had submitted inaccurate data to LIBOR for their own benefit. In parallel, the Commission is also investigating possible cartel abuses in relation to EURIBOR and LIBOR.
- In June 2012, the IOSCO Board Level Task Force on Financial Market Benchmarks published a report and will issue recommendations in 2013, following a request by the Financial Stability Board (FSB).
- In July 2012, the European Commission proposed to amend its existing proposals for Market Abuse Regulation (MAR)[143] and Criminal Sanctions for Market Abuse Directive (CSMAD)[144] to clarify that benchmark manipulations are clearly and unequivocally illegal and can be subject to administrative or criminal sanctions.
- Also in July, the Chancellor of the Exchequer of the UK commissioned a review of the structure and governance of LIBOR and the corresponding criminal sanctions regime to Martin Wheatley, which was published in September 2012. It includes a 10-point plan for comprehensive reform of LIBOR which is now part of the upcoming Financial Services Bill.
- In September 2012, the European Commission launched a public consultation on a possible framework to regulate the production and use of indices serving as benchmarks in financial and other contracts. Changing the sanctioning regime, as proposed in July, was not considered sufficient to improve how benchmarks are produced and used. For this reason, the consultation addressed key issues and shortcomings in the production and use of benchmarks to assess and ensure their future integrity.
- Finally, also in September the Economic Consultative Committee of central banks governors set up a senior officials group to study benchmark issues and consult the market in order to provide input for further discussions at FSB and G20 level.

In this, as in several other instances, there is a need to reinforce regulatory practice to address instances when financial stability and competition policy are both at stake.

4.5.2 Collateral ownership and securities law

The requirements for OTC derivatives mandated by EMIR can be expected to increase the overall demand for collateral in the EU's financial markets. Hence, this section focuses on the role of collateral in the financial system with significant implications for ownership rights. Following the Lehman bankruptcy, the resulting collapse of trust in counterparty creditworthiness increased the demand for high quality collateral as the market shifted to a higher proportion of secured funding. Thus, collateral has become essential for market participants to obtain access to liquidity. EMIR

[143] See European Commission (2012a).
[144] See European Commission (2012b).

will induce a considerable portion of the OTC derivatives markets to move to CCPs where counterparties will have to secure their trades by posting collateral either in the form of cash or high quality government bonds for the initial margin, whilst only cash is accepted as the variation margin. EMIR mandates the CCPs to accept highly liquid collateral only, with minimal credit and market risk.

The crisis has shown that, in case of a default somewhere in the collateral chain, exposures are no longer sufficiently covered. Moreover, it was often unclear who owns which securities. As a result, market participants are now more inclined to hoard high quality collateral and less willing to grant others the right of reuse. The relative scarcity of high quality collateral is driving the demand for collateral management services. In addition to meeting the new regulatory requirements in the OTC derivatives trading space, collateral management generates cost savings and enables market participants to manage their funding needs. Next to custodians and prime brokers, CSDs are the main intermediaries providing collateral services. International Central Securities Depositories (CSDs) settle trades in international securities and in various domestic securities, usually through direct or indirect links to local CSDs. EU CSDs held securities of €42tn in their accounts and settled 340 million securities transactions worth some €995tn in 2011.

The more stringent collateralisation requirements may impact on the liquidity of market participants and are likely to increase demand for high quality collateral.[145] While the demand has been on the rise, the supply of eligible collateral is declining, partly also due to sovereign credit rating downgrades. In addition to decreasing quantities, the velocity of collateral reuse is also decreasing.[146] Rehypothecation accounted for some €2.8tn in globally available collateral in 2011, enabling higher liquidity in the financial markets.[147] However, it can also increase the interlinkages by shifting the legal and economic risks in an already complex and opaque financial system, as the ownership of securities changes hands on an intra-day basis. Such interconnections can act as systemic risk channels. In other words, rehypothecation can be an important source of liquidity, but it is also capable of creating systemic instability by putting client assets at risk.

If a client transfers full ownership of the securities to the securities account provider under a Title Transfer Collateral Arrangement (TTCA), these assets are not subject to any client protection rules and the client only retains the right to have equivalent securities returned. Thus, every collateral taker in the chain becomes the respective owner of the securities and can use them freely. A Security Interest Collateral Arrangement (SICA) is different: the collateral provider keeps its property rights, but the legal distinction between a title transfer and a security interest is blurred once the account provider chooses to exercise its rehypothecation right. Legal uncertainty arises as to whether the client's proprietary interests are wiped out or not, since the client's ownership right is replaced with a contractual right to return equivalent securities.

[145] According to ISDA (2012b), some 80% of the collateral delivered globally against bilaterally cleared OTC transactions in 2011 was in the form of cash, whilst about 17% was provided in government bonds (7.4% in EU government bonds). The remaining collateral consisted of equities, corporate bonds and other assets.

[146] In other words, the same collateral is used to support a smaller number of trades. For example, when the velocity of reuse is 2, the same collateral is used to support two different deals. The velocity of reuse is estimated in IMF (2013).

[147] Rehypothecation implies repeated use of securities collateral, whereas reuse is a specific instance of rehypothecation granted under a Security Interest Collateral Arrangement (SICA). Combining data provided by investment banks with IMF estimates implies that a total of €1.8tn worth of collateral was subject to rehypothecation globally in 2011. Based on the velocity of reuse of 2.58 as estimated by the IMF, the total pool of globally available collateral reached €4.6tn.

Generally, rehypothecation works well until a bankruptcy occurs. When the account provider defaults, a client with a mere contractual claim becomes an unsecured creditor, meaning the client's assets are, as a rule, tied in the insolvency estate and it is obliged to line up with all the other unsecured creditors to receive its assets back. Moreover, in cases where the recording of the two transaction sides is not done simultaneously, the same securities may effectively end up credited to two different accounts, with the risk of distorting the property law system. If account providers do not debit their clients' accounts when they use their clients' securities, several clients will have the same securities credited to their accounts at the same time. This hinders ownership identification and creates hidden leverage allowing the entities involved to hide their existing debts. Reuse under SICA carries greater risk to the financial system, because in case of default multiple counterparties may end up competing for the same collateral in so-called 'priority contests'. When a collateral chain crosses borders, things become even more complicated.[148] Different laws are applicable to the same securities, yet the relevant laws of EU member states are usually incompatible. As a result, legal uncertainty about the EU cross-border securities holdings arises.

Another problem relates to the risk of unauthorised use of client's securities. Securities of one client can easily be used by the account provider to the benefit of another client, e.g. for settlement purposes. On the one hand, this practice greatly enhances settlement efficiency, whilst on the other, clients are exposed to the custodian's insolvency risk during this short-term period without even knowing it. Lack of transparency as regards collateral arrangements threatens not only individual creditors, but the financial system as a whole. Automated collateral optimisation systems carry the risk that collateral takers cannot keep track of the posted collateral in real time, relying instead on tri-party systems to ensure that bookkeeping records match the balance sheet. This can lead to unintentional short-selling whereby collateral takers engage in selling off securities that they do not any longer hold.

From the regulatory point of view, the main problems associated with collateral management services are insufficient client protection and the general lack of transparency as regards the use of clients' assets. As explained above, collateral transformation practices create longer and more complex collateral chains and it is important that collateral is used in a transparent manner. The Giovanni Reports considered legal certainty as one of the three principal difficulties in the post-trading sector already at the beginning of this millennium. In 2004, the Commission set out a roadmap for action to enhance the safety and efficiency of post-trading arrangements in the EU. The work of Commission services in the field of EU securities law has focussed on the enhancement of legal certainty as regards:

- Holding and disposal of securities held in securities accounts;
- Exercise of investor's rights in cases of securities that flow through a chain of intermediaries, in particular, in cross-border situations; and
- General safekeeping and administration of securities.

[148] Cross-border investment was about 30% of outstanding EU securities in 2010, i.e. €9tn (IMF, Coordinated Investment Portfolio Survey, ECB and own calculations).

4.6 CONCLUSIONS

Now that the legal framework provided by EMIR is in place, particular attention will need to be paid to its full and effective implementation. In addition, adoption of other related initiatives is still required to complete the overarching agenda as regards the OTC derivatives market reforms. For example, the Markets in Financial Instruments Directive (MiFID) review seeks to limit the scope of derivatives that can be traded OTC strictly to the bespoke and illiquid ones. It would also bring all organised trading in financial instruments under comprehensive pre- and post-trade transparency rules.

Further work is also needed on securities law, as explained above. Ownership chains of securities can become very complicated, especially when they cross borders of the EU member states. The growing use of collateral management services may complicate the network of bilateral exposures and generate new opportunities for market participants to move the risk around the financial system. The Commission services intend to carry out continuous monitoring of financial market developments to keep pace with their evolution and to take appropriate preventive and corrective regulatory actions, as and if necessary.

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ANNEX I. EXAMPLES OF OTC DERIVATIVES CONTRACTS

The four main types of **OTC interest rate derivative** products are:

- Interest rate swaps, whereby two income streams are swapped, usually a fixed rate and a floating rate.
- Interest rate caps or floors in the form of an option written on the reference rate.
- 'Swaptions' that grant the holder the option to enter into a swap at some future date.
- Forward rate agreements that lock in a future interest rate at a specified level.

The main types of **OTC commodity derivatives** are:

- Commodity forwards are contractual agreements to trade in a specific commodity at maturity and at a price that is agreed upfront. Although commodity forwards are commonly settled physically (i.e. the commodity is actually delivered at maturity from the seller to the buyer), they can also be settled in cash.
- Single commodity swaps are agreements to exchange cash flows based on future price developments of a specific commodity.
- Commodity index swaps are similar to single commodity swaps, except that they are linked to a commodity index instead of a single commodity.
- Commodity options usually have a futures contract on that commodity as the underlying asset instead of the commodity itself.
- Commodity-linked medium-term notes (MTNs) are linked either to the price of a single commodity, to a basket of commodities or to a commodity index. These are structured products designed by investment banks for clients who seek commodity exposure, but prefer the fixed income form of assets. The MTNs provide investors with coupon payments and principal repayment at maturity, mimicking a traditional fixed income product.

The main types of **OTC equity derivatives** are:

- Single name stock options give holders the right to trade in the underlying stock at or before maturity at a pre-specified (strike) price.
- Stock index options are structured much like their single name counterpart, except that these are written on stock indices or Exchange-Traded Funds (ETFs) related to major stock indices. They are usually cash-settled, relatively easy to standardise and very liquid.
- Equity swaps include total return swaps (TRS), variance and volatility swaps, as well as correlation and dividend swaps. TRS are contracts whereby both the realised dividends and capital gains (hence – 'total return') on specific equities are exchanged for either a fixed or floating interest rate. TRS represent the largest portion of the OTC equity derivatives market and they are typically referenced to single stocks, custom baskets or stock indices, on the one hand, and LIBOR or the US Federal Funds rate, on the other. In

a volatility swap, one party pays to the other a fixed (pre-agreed) volatility in exchange for realised volatility. Both are multiplied by the same notional. Variance

- Contracts for Differences (CFDs) are cash-settled contracts based on the evolution of specific stock prices, allowing investors to gain exposure to stock price movements without holding the underlying asset.
- Other equity derivatives include customised derivatives, such as structured products and exotic equity derivatives, which have tailored features based on an underlying equity.

The main types of **OTC foreign exchange (FX) derivatives** are:

- FX deliverable forwards are contracts on a future foreign exchange transaction for a fixed amount of a specified currency at a pre-determined exchange rate (known as the forward price).
- FX non-deliverable forwards (NDFs) are short-term, cash-settled forward contracts that do not involve actual exchange of the respective currencies at maturity. Instead, they are settled on an agreed notional amount based on the difference between the contracted NDF rate and the prevailing future spot rate.
- FX swaps are short-term contracts, whereby a specific currency is lent in exchange for simultaneous borrowing in another. Thus, FX swaps involve exchange of the two currencies on a specified date and a reverse exchange of the same at maturity based on a pre-determined exchange rate, which is generally different from the rate applied to the initial transaction. Both spot-forward and forward-forward swaps are possible. Thus, FX swaps can effectively be viewed as a bundle of either spot and forward, or two forward contracts.
- Currency swaps imply exchange of interest payment streams in different currencies for an agreed period of time. At maturity, they usually also involve exchange of the principal amounts themselves at a pre-agreed exchange rate. Currency swaps can be used to obtain cheaper funding and to hedge against exchange rate risk.
- FX options give the holder the right to exchange a fixed amount of one currency for another at a pre-agreed exchange rate (the strike price) at or before maturity.

Finally, examples of **OTC credit derivatives** include credit default swaps (CDS), total return swaps and asset swaps. Insofar as structured products (e.g. synthetic collateralised debt obligations) are constructed using CDS instruments, they also share some of the features of OTC credit derivatives.

Source: Hull (2009)

CHAPTER 5: SME'S CREDIT ASSESSMENT INDUSTRY, CONTRIBUTION TO STABILITY AND GROWTH

5.1 INTRODUCTION

More than 99% of all European businesses are small and medium-sized enterprises (SMEs). Combined, they provide two out of three private sector jobs, contribute to more than half of the total value-added created by businesses and are crucial for wealth and economic growth in the European Union (EU).

Nevertheless, Mid-Caps and SMEs[149] have historically faced significant difficulties to access funding. The main reason is the lack of verifiable public information about them, which implies high costs and uncertainty to evaluate their credit worthiness for potential providers of funds. When lenders cannot assess the risk profile of borrowers adequately, they typically respond to this information asymmetry by increasing interest rates on the loans. This causes the *adverse selection* problem: higher interest rates drive low risk borrowers out of the market, while more high risk borrowers step in. Moreover, borrowers are incentivised to invest in riskier projects to compensate for the higher interest rates (an instance of *moral hazard).* In addition, some borrowers may not repay their debts, as in the absence of information about their credit worthiness they could still obtain loans from other lenders (another instance of *moral hazard*). As Stigliz (1981, 2002) and others have pointed out, the presence of asymmetric information can ultimately lead to credit restrictions, even in competitive markets.

The scant availability of public information about the creditworthiness of SMEs in Europe is one reason why these firms have to rely strongly on bank financing, more than in other advanced economies. Insufficient information sharing and the monopoly of information exercised by banks on borrowers, allows them to extract rents even in relation to high quality borrowers. Bank loans and other advances accounted for 85% of total non-financial corporate debt outstanding in the Euro area and in the UK in 2011, while non-financial corporate bonds accounted for only 15% (Llewellyn 2012). In the USA, by contrast, the proportion between bank loans and corporate bonds was 53% to 47%. While in Europe non-financial corporates – especially mid-caps and SMEs – are highly dependent on the banking sector, loans to non-financial corporates and households represent about 1/3 of banks' total assets, reflecting the asymmetric dependency between non-financial corporates and the financial sector.[150] One of the main reasons for the difference between the EU and the US is the disclosure culture and practice on the two sides of the Atlantic.

The financial crisis has aggravated funding for SMEs, due to the fact that different sources of short and long term financing have been affected by endogenous liquidity problems in the banking

[149] The current EU definition of SME is given in the Recommendation 2003/361/EC. Under article 2 the Commission categorizes micro, small and medium size entities (SMEs) as those enterprises which employ fewer than 250 employees and which either have a turnover not exceeding EUR 50 m or an annual balance sheet not exceeding EUR 43 m. Mid-cap describes a publicly-traded company with medium amount in market capitalization. Depending on exchanges, the range for medium market capitalisation differs between EUR 250 and 1.000 m and between EUR 500 and 5.000 m.

[150] This structural bias is highlighted in the recent report of the High-level Expert Group on reforming the structure of the EU banking sector. See http://ec.europa.eu/internal_market/bank/docs/high-level_expert_group/liikanen-report/final_report_en.pdf.

sector[151]. Moreover, SMEs' businesses in southern European countries are impacted by both the credit crunch of the sectors they belong to and the sovereign crisis, with the public sector delaying payments to suppliers. Moreover, in crisis-ridden countries they have also had to bear the higher interest rate spreads reflecting perceived sovereign risks. Thus they are disadvantaged in relation to their peers in the rest of the EU.

In order to facilitate credit outreach to SMEs and their growth, it is paramount that these companies are able to enhance their visibility in relation to their business model and franchise and their credit worthiness. In this regard, the "Doing Business 2013" report of the World Bank emphasises the crucial role that credit information plays to exchange goods and services.[152] In particular, the enterprise survey of the World Bank shows that in most European countries working capital and new investments are at about 55%-70% financed through internal sources (retained earnings), 20-28% through bank loans and 12-25% through alternative sources of finance, especially trade credit and leasing, (World Bank 2010).

Thus, given the importance that alternative financing has, information sharing beyond banks remains key. It reduces information asymmetry by countering adverse selection (Jappelli and Pagano, 1993 and 2003), moral hazard (Padilla and Pagano 2000), breaking the information monopoly a lender has on its borrowers (Padilla and Pagano 1997), and, eventually, reducing the overall over-indebtedness in the economy, as highly indebted firms receive less credit (Bennardo, Pagano and Piccolo 2009).

In this regard, the business information and credit scoring (BI & Scoring) industry has a longstanding tradition in providing this sort of information. For many corporates, services offered by the BI & Scoring industry are already an integral part of its business practices and routines. Their services are regularly used in commercial relationships between companies and financial planning.

This is particularly true in the supply chain industry, where companies need up-to-date information on the credit worthiness of their debtors. Financial institutions are not the only ones that can provide credit: suppliers usually have to provide prolonged payments periods or loans to business partners, depending on their credit worthiness. Studies show that in the short term, suppliers are very important creditors. In this regard, the services that the BI & Scoring industry offers are essential.

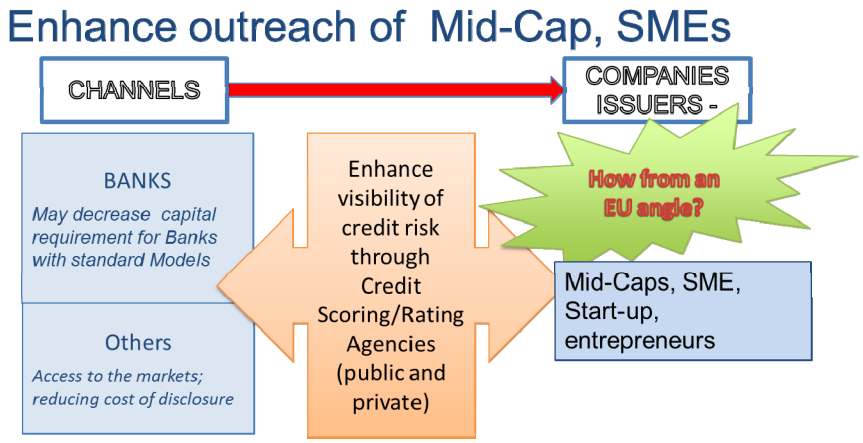
Moreover, the industry has developed tools that have traditionally been useful instruments for SMEs to access funding, optimize their credit risk assessment, facilitate decision-making processes and reduce uncertainties in the supply chain.

Finally, those firms with a rating licence consider the growth potential in this segment very high, as there are constantly new initiatives being raised to incentivize alternative financing of SMEs apart from bank lending.

[151] See also chapter 1.4.5.

[152] The survey of the World Bank also covers and investigates availability of credit information, such as (1) distributing data on loans below 1% of income per capita, (2) distributing both positive and negative credit information, and (3) distributing credit information from retailers, trade creditors or utilities as well as financial institutions.

Chart 5.1.1: **Role of the Business Intelligence and Credit Scoring industry**.



Source: Commission Services.

Given the role that SMEs play in economy, the difficulties that they experience in the current economic environment, and the role that information plays for their business, DG Internal Market has examined the landscape of external information providers, i.e. the BI & Scoring industry in Europe. The aim of this exercise is to better understand the role of this industry and consider whether policy measures are needed to support and strengthen their activities, which in turn would help SMEs to develop their business and accelerate growth. This exercise is part of a broad initiative and policy debate that the EU Commission has started to reinstall confidence and put the EU back on the path of smart and sustainable growth.[153] Facilitating access to finance for SMEs is one of the important issues in this respect.

In this context, DG Internal Market has submitted late 2012 a questionnaire to thirteen BI & Scoring firms[154], in ten Member States. This chapter draws on written replies and on the subsequent bilateral interviews with most of the firms. It provides stylized facts about the BI & Scoring industry in the EU, considering historical aspects and taking countries' specific characteristics into account. In the meantime eight of the firms in the sample become registered CRAs and provide now ratings for mid-caps and medium-sized companies. This business line is relatively new and thus needs time to develop. It has however a significant potential for providing rating to a market segment that is not covered by the big three large dominating CRAs. Further on, this chapter gives some insights on the market structure of the BI & Scoring industry and the potential barriers to market entry. It describes the most representative business models in the EU and the role that the industry plays for SMEs. Finally, it concludes by putting for discussion possible policy responses that might be worth considering at a later stage.

This exercise is complementary to the current study that the Commission (DG ENTR) is running on the evaluation of the effectiveness of market practices and policies with regards to the banks' rating systems for SMEs, particularly to the use of qualitative ratings. The results of the study are

[153] See chapter 2 and the green paper on long-term financing of the European economy. http://ec.europa.eu/internal_market/consultations/2013/long-term-financing/

[154] The firms that participated in the survey end 2012 are: Axesor, BCRA - Credit Rating Agency, Bisnode Business Information, Cerved Group, Coface Services, Companhia Portuguesa de Rating /CPR, Creditreform, CRIF, Equifax, ICAP, Informa D&B, KSV1870, Scope Credit Rating.

expected by the end of the year and will be used to accurately implement the Commission Action Plan on SMEs assess to finance[155].

5.2 BUSINESS INFORMATION AND CREDIT SCORING INDUSTRY

In the following, the BI & Scoring Industry is described first from the demand and then from the supply side perspective. The analysis also takes into account their financial returns.

What is the demand in the BI & Scoring industry?

Non-financial corporates (NFC) are the earliest and prime group of clients in this industry, having used scores traditionally in commercial relationships with their business partners[156]. Today, depending on their size and capacity, corporates demand different services:

- Micro and small companies that do not have sophisticated risk management use BI & Scoring to manage the risk inherent in their commercial relationships.
- Medium size companies use additional services for cash management and to monitor and manage outstanding exposure. Some of them use these services to optimize their credit risk management through early warning tools and credit limits. Corporates that use scoring in this segment see a clear advantage in the trade-off between the costs they carry and the solutions offered to monitor and manage potential losses (e.g. through a drop in the delinquencies of their customers).
- Large companies use raw data and business information as input in their own risk management systems to produce early warning indicators and solvency reports on their customer base.

The second main group of clients are financial institutions. Banks use services of BI & scoring firms in different ways. First, they use raw information as input to their internal credit risk models. Secondly, they use scores to backtest the credit risk assessment resulting from their internal Rating Based Approach (IRBA). Furthermore, in some countries, they use credit scores of a firm that has been recognised as an ECAI by the competent supervisory authority[157] in the standardised approach within the Basel 2 framework. This has made credit-decisions on SMEs more systematic, objective and time efficient. Note that firms that became registered Credit Rating Agencies (CRAs) are not automatically acknowledged as ECAI, i.e. banks might apply their ratings for capital requirement purposes. The registration to become an ECAI is done separately, in accordance with national laws.

Insurance undertakings are also a very important customer group of BI & Scoring companies. They use business information issued by specialised providers in order to assess the creditworthiness of their portfolios.

[155] Communication for the COM: an action plan to improve access to finance for SMEs (2011). http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:DKEY=628868:EN:NOT

[156] Many of the countries participating in the questionnaire (AT, DE, FR and PR) have over a century of tradition on business information.

[157] ECAI (External Credit Assessment Institution) is a firm whose credit assessments may be used by credit institutions for the determination of risk weight exposures according to the CRD.

What does the BI & Scoring industry offer?

The supply of BI & Scoring industry includes raw data information services providers, business information providers and forecasting information providers for corporates and consumers. This study focuses on the importance of the industry for SMEs, rather than the consumer-part of business.

Raw data, such as balance sheets and registry information, is usually available at public business registers and public credit registers. They have been originally created to provide information on credit exposure of an individual or a firm for financial regulators and central banks. Most public registers have information only on supervised institutions, and exclude non-supervised ones such as telecommunications and micro-finance institutions. The data is however accessible to lenders that use the information to evaluate the credit worthiness of their borrowers.

Business information, i.e. collecting and verifying financial data, legal and regulatory information, are aggregating and framing the gathered information in standardised credit reports. Providers mainly include credit reporting agencies, info/data providers and credit bureaus. The latter offer more detailed information than credit registers, including information on utility payments, credit card debts and credit history (OECD 2010, World Bank 2013b). Data is collected from public sources (public register, Chambers of Commerce (trade register), national public institutes, local courts, official journals, etc.) as well as private sources (annual accounts, credit bureau, networks, etc.).

Forecasting information providers offer scores, and lately ratings, as well as credit management solutions and decision-making tools. Providing assessment of a company's creditworthiness is a natural evolution of providing simple business information, as reliable scoring requires large amounts of information, which business information providers usually have available. Therefore, many of the scoring service providers in this category are the same as in the business information sector.

- **Scoring** gives a ranking about the creditworthiness level of a company, resulting from estimations of pure mathematical/statistical models, based on financial data and other – mainly quantitative – company information.[158] Scoring is paid from clients/investors (unsolicited) and the results are not disclosed to the public. The BI & Scoring industry is not regulated and there are no legal or regulatory requirements to issue scores.
- **Rating** gives a ranking about the creditworthiness level of a company, but it is based not only on mathematical/statistical validations, but also on qualified judgements of credit rating analysts. In contrast to the traditional scoring, which is mostly automatized A rating is "individual" in the sense that here evaluations take into account both quantitative as well as qualitative information (soft-facts). Rating is elaborated and proposed by credit rating analysts and approved by a head analyst or by a Rating Committee (according to specific CRA internal protocols). It is usually paid by the rated firm (solicited) and it is disclosed to the public. A European firm can only issue ratings if it is registered at the

[158] The new regulation on credit rating agencies (CRA III) which has been agreed by the European Parliament and will enter into force in the course of 2013, includes a definition of credit scores, in order to clarify the distinction between both entities. Article 3 (y) of the newly agreed regulation of credit ratings defines "credit scores" as a measure of creditworthiness derived from summarising and expressing data based only on a pre-established statistical system or model, without any additional substantial rating-specific analytical input from a rating analyst.

European Securities and Markets Authority (ESMA) as a CRA. They have to comply whith the quality standards of the CRA regulation (1060/2009) and are subject to oversight by the European Securities and Markets Authority (ESMA).

- **Credit management solutions** and **decision-making tools** are offered to mid-size and mid-cap companies in addition to scores/ratings. They include tools and software that enable a company to interactively monitor credit risk (incl. the likelihood of default) of single counterparties, analyse risks inherent in a portfolio of customers and/or suppliers and early warning systems. In addition, some BI & Scoring firms provide tools to optimize credit risk management systems of companies and to facilitate their decision-making in business.

The above description of services is neither complete, nor exhaustive. Other services that firms from our sample offer are analysis of economic sectors, regions and portfolios, as well as debt collection services. Less significant services in terms of generated revenues are lending support, insurance services and business outsourcing.

Where is the revenue generated from?

In the traditional BI & Scoring business, up to 80% of its total revenues are generated by business information, credit scoring, credit management solution and decision-making tools designed for special client needs. The last two have increasingly become more important, as pure business information (financial, delinquency and mercantile information) generates low revenues. Especially in the last ten years, with the development of internet and social media that enable information/data gathering for free, prices that clients are willing to pay for pure information have dropped. On the other hand, costs for buying raw information (e.g. companies' financial data from public registers or credit bureaus) have remained relatively stable. Therefore, the majority of firms in this industry need to offer not only credit reports and scores, but also risk management systems and decision-making tools tailored for clients' needs.

However, depending on the origin/history of a BI & Scoring firm, some part of its business might be more important. For instance, firms that own a credit bureau, generate up to 40% of their revenues by this service. Services, such as marketing and real estate information, generate a smaller part of revenues (10-15%), while revenues from debt collection business that are offered from some firms count for less than 5% of total revenues.

For firms that obtained a rating licence, revenues arising from this service are still relatively small. This is a new business line for most of the firms and it needs time to develop. At present, the number of companies covered by ratings is small, because of the high requirements for individual assessments. However, this might change in the future, due to opportunities for financing mid-caps and large medium-sized companies in capital markets, which in turn need to be rated.

5.3 MAIN SAMPLE FEATURES AND SCOPE OF THE STUDY

The sample consists of thirteen selected firms, based in ten Members States, covering most of the business models and almost 80% of the market share in the EU. Table 5.3.1 shows the sample distribution in terms of services offered and geography. Four of the respondents offer only credit rating services for mid-cap and mid-sized companies. They are relatively new in the market and

small-sized, rate less than one hundred mid-cap companies and have a turnover below 10m €. These three firms have not been analysed in detail, as the focus of this study is set on the role of credit assessment of SMEs for their business development and growth.

The other nine respondents, - four of which have recently received a CRA licence from ESMA, - have a long experience (three of them for over 100 years) in BI & Scoring. Three of the firms in the sample had ECAIs-status from the EBA, two of which are already CRAs.

Most of the firms have a strong presence in their home markets and some of them have expanded their activities in many Member States too. For example, three firms offer their business in up to fifteen Member States and only four firms from the sample are concentrated exclusively in their national markets. However, the level of penetration between home and abroad is very different among firms: while in their home countries some respondents cover over half of the market in terms of revenues, in most foreign countries their coverage ratio is below 10% (see also section 5.5).

Table 5.3.1: **Services distribution of participants and location**

Services offered	No. of firms participating in the questionnaire	Headquarter location
BI & Scoring	5	At, ES, FR, SE, UK
BI & Scoring & Rating (CRA licence)	4	DE,ES, IT
Rating (CRA licence)	4	BG, DE, GR, PT

Source: Respondent data

Two of the respondents offer business information for almost all (limited/not-limited) companies in their home country (6 to 7.5m firms); the other respondents offer BI & Scores for 3m firms on average.[159] However, the number of scores depends on the size of the economy of Member States. In terms of rating services, the number of rated companies from respondents that have a CRA licence is very small, ranging between 15 and 150 mid-caps and large medium-sized companies, except for one of them, where the number of credit ratings was reported for thousands of firms[160]. It is important to be aware that respondents do not consider that scoring business competes with ratings. They are seen as different business lines that serve different market segments/clients and are based on different methods and payments modalities.

Chart 5.3.1 illustrates the distribution of companies in an average economy. The number of companies in each segment differs from Member States to Member States, depending especially on the maturity of economy. However, for all countries the majority of firms (numbering between 2m and 4m) have micro-business coverage with a yearly turnover of less than 2m €. They are followed by 1m to 2m SMEs with a turnover between 2m and 5m € for small firms and from 5m to 50m € for medium-sized ones. The amount of mid-cap companies with turnover between 50m and 150m € reaches some thousands. On the top of the pyramid, there is a small number of large companies with a turnover of over 150m €.

The big three credit rating agencies provide ratings for listed large companies, among which only a few hundred are non-financials. For example in 2011, 320 non-financial firms were rated in

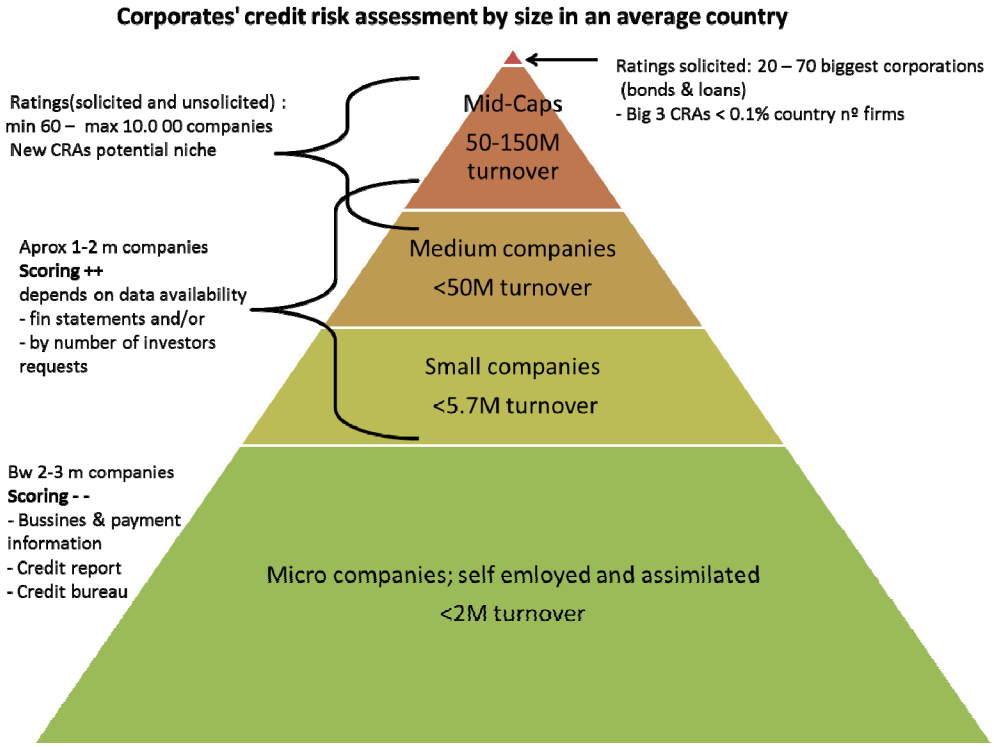
[159] For one participant the number of scored companies is reported to be around 9td.

[160] In this case, investors pay the rating, in contrast to other CRAs among respondents, where the rated company carries the costs.

France and around 500 in Europe. Mid-caps and medium-sized companies are usually scored but not rated. Respondents stated that the main reason is the high rating-costs[161], for which a client might consider that it does not add much more value compared to its scoring. This is due to the fact that scores in this market segment consider both, evaluation of granular data, as well as soft facts and credit analyst's opinions (so called scoring ++). Nevertheless, considering the growing importance of alternative forms of financing beside bank credit (e.g. corporate bond markets), respondents see opportunities for issuing ratings for companies with turnover of 100m € or more. The number of these companies is relatively small, e.g. around 4.000 firms in FR and around 2.400 firms in ES.

The bulk of scored companies are SMEs (the bottom of the pyramid), where the score of the company is a result of a pure mathematical/statistical model with no individual judgement involved. In terms of sectors, the biggest part of companies is in manufacturing and services.

Chart 5.3.1: **Distribution of non-financial corporate firms in a representative OECD country by size.**



Source: own illustration drawn from respondents' data.

All respondents reported that in most Member States there is still a considerable number of companies not scored yet. Their share is quite different from country to country, depending on maturity of markets, availability of data, as well as experience of scoring firms operating in these countries. All firms uniformly reported that the sector for small and micro-firms is the least penetrated. On average, around 25% of all companies in a country (approx. 700 td firms) and around 75% of self-employed companies (1.5 to 1.8 m firms) are not scored. One reason for this might be that roughly 2/3 of all micro-companies' financial results are not obtainable, because

[161] Respondents reported that only the first rating of a company would cost between 15td and 70td €, depending on the size of company, complexity of its business and the available information.

they are not made open to the public (thus only the tax authorities have insight, however they are not allowed to disseminate the received data).

5.4. DIVERSITY OF BUSINESS MODELS

Business models of respondents are diverse, depending on external and internal factors.

- The **availability and accuracy of data** is a key external factor. It includes public information (e.g. credit register) that is linked to national law and regulation, and private information, such as credit bureaus. The maturity of markets in which BI & Scoring firms operate is another external factor; meaning whether and to what extent a company culture exists, where business information (about markets, creditors/debtors) is naturally integrated into the company's business decisions and risk assessment.
- One of the most important internal factors is the **origin/history** of a BI & Scoring firm. Depending of its origin (e.g. credit insurer business, public companies, private credit bureaus, or private investors/ex-bankers), certain traditional business lines dominate, remaining the major source of earnings.
- The history of a firm is naturally linked to the second internal factor, which is the type of **customer** (companies, banks, insurers, public entities, etc.). Firms that originate from banking obtained already, or intend to obtain a CRA licence; historically they have an ECAI-status. Some of the firms applied for being a rating tool in the Eurosystem credit assessment framework (ECAF)[162] regulation of ECB, but so far only one respondent has been recognized as a rating tool from the ECB.

Impact of the financial crisis

Financial crisis and the current economic downturn have a dual impact on the credit scoring industry:

- In countries that were hit hard by the crisis, many traditional customers have closed down their businesses (e.g. 81.000 companies between 2008 and 2012 in Spain). Thus the total pool of potential customers shrunk. Respondents reported that in difficult times, the budget for buying information and scoring is reduced, affecting their sales and turnover. This is especially the case for those financial institutions, on which the crisis has put pressure on prices and terms of payments for information. The reasons are twofold: first, credit volumes and credit origination shrunk; secondly, the profitability of banks declined. Additional factors, such as restructuring in the banking system (e.g. saving banks in Spain), negatively affect the number of clients.
- On the other hand, remaining corporates consume more of BI & Scoring services during crisis times, as the numbers of delinquencies and uncertainty in the markets have increased. Moreover, the increased sensitivity of banks on appropriate risk management tools and processes has incentivised some reengineering and update of credit information services and IT-infrastructure in the BI & Scoring industry. Respondents reported that crisis has spurred innovative tools to support companies in their decision-making and/or to automatize financial processes (credit, investment and insurance risk assessments).

[162] Being recognized as rating tool from the ECB means that in the assessment of the credit standard of eligible assets, the Eurosystem takes into account credit assessment information from credit assessment systems belonging to the firm. See also http://www.ecb.int/mopo/assets/risk/ecaf/html/index.en.html

The overall effect of the crises is therefore mixed: a reduced number of customers and pressure on prices and sales for BI & Scoring services has been compensated by additional demand, because of high market uncertainty. Bottom line, the turnover of many respondents has remained relatively stable or even increased in the last years.

Overall, the crisis demonstrated that the diversity of business models in the BI & Scoring industry and the manifold of services offered have made this business stable and less pro-cyclical.

Business perspectives

The majority of respondents were positive on their future business developments, with some of them expecting annual growth rates between 4% and 7%. Those firms that have a rating licence consider the growth potential in this segment to be even higher, as there are new initiatives to incentivize alternative financing of SMEs apart from bank lending.

5.5. MARKET ENTRY AND STRUCTURE

Market size

Market size of the BI & Scoring industry varies considerably between Member States, depending on the size of countries' economy, and maturity of markets. In some Member States (e.g. DE and FR) these firms operate in mature markets with over a century of tradition in business information, being an integral part of companies' business decisions and risk assessment. In other countries (e.g. ES) scoring and credit assessment have been developed only in the recent decades (e.g. last 30 years in ES), while in new Member States these services are relatively new. The turnover of the credit scoring industry varies considerably between countries, but it remains significantly below EUR 1 billion per year per country. For example, in 2011 the annual turnover of the BI & Scoring resulting from their corporate business was around 144m € in ES, 750m € in IT and 200m € in FR. The turnover of BI & Scoring Industry in Europe is approximately EUR 2 billion per year.

Market concentration

The BI & Scoring industry has seen in the last ten years several mergers between the major competitors. There is a strong ongoing concentration in many Member States, with two or three large companies possessing over 90% of the market share. For example, the three key players are Coface Services, Altares and Creditsafe in FR, Cerved and CRIF in IT, Creditreform and Bürgel in DE, with Creditreform forming between 65% and 70% of market share as of end 2010 (Charts 5.2.1-5.2.9). In Scandinavian countries the concentration is similarly high. From countries quizzed in this questionnaire, UK was reported to have the highest competition.

Respondents stated that they face competition to a different degree for several business lines (pure business information, scoring, credit bureaus and rating business).

- For scoring services, global competitors are international companies operating in different countries through local acquisitions, although their market share is relatively small. Private credit bureaus that offer scoring as an additional service count in competitors too. In addition, some respondents stated that new "low-cost" companies with pure online business are emerging as strong competitors. These companies have built up their business

from the scratch using advanced IT technology (e.g. CreditSafe). To begin, they served a niche market segment that has not been closed to traditional scoring companies, which are offering online services to very small businesses for a comfortable price. Now, they have expanded their business and serve a wider group of clients in different countries. Information that these companies gather is synthetically merged and automatically processed; scoring is derived from pure mathematical/statistical models. This is different from other traditional BI & Scoring firms that use – at least for medium-sized companies – some qualitative information and analysis/judgement.

- In the pure information segment, local firms face additional competition from some consultancy, local analytical firms, or university spinoffs that offer similar services. Internet services as Google and Yahoo offer business information too. Some of the respondent stated that because of the high competition in the business information services, the prices have significantly dropped, and for those firms that have also financial institutions in their clientele, the prices often do not reflect the complexity of projects that derive from Basel 2 requirements.
- Public companies that offer raw information do not directly compete with credit scoring business, but they are competitors for private credit bureaus and networks.
- Respondents that have a CRA licence and offer credit ratings in addition to scorings, face only a limited competition from the big three international rating agencies, as they operate in different market segments (the big three CRAs serve large multinationals, while the others serve mid-caps and large mid-size companies) under different modalities.

Market entry barriers

In terms of requirements for market entry, there is no licence system and no legal constraints on the scoring market. Respondents stated however that there are considerable entry barriers to build up a "greenfield" credit scoring business through. Due to the proprietary nature of information, there are large initial investment costs to build exhaustive SMEs' databases with sufficiently detailed historical information. Setting up a BI & Scoring business requires progressive IT, highly skilled and specialized staff that can also offer integration of information with customers' systems and software, extensive sales network and experience in customers' acquisitions. Costs arise from complex production processes and quality controls, as the credibility of services is key factor in this business.

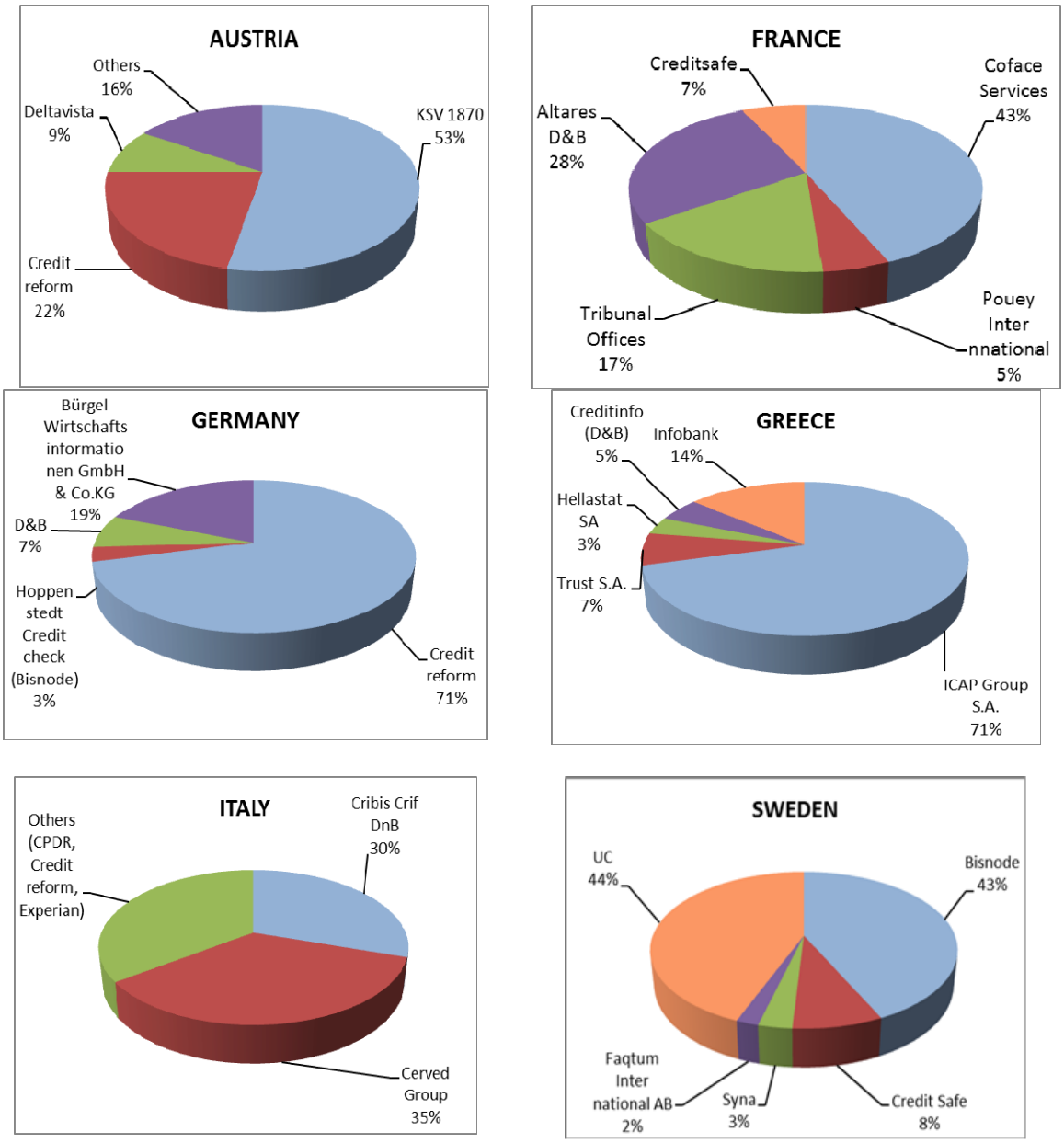
In some countries, costs for financial information from public sources (e.g. credit register) are relatively high and are thus considered as a barrier to market entry. Moreover, the IT of public entities that offer raw data is not up-to-date, so that data processing becomes costly. Reputation risk and time requirement to build up a brand play also a role in market entry considerations. All respondents participating in this survey entered new markets through acquisitions, or they have historically grown from other businesses, such as credit insurance or private credit registers.

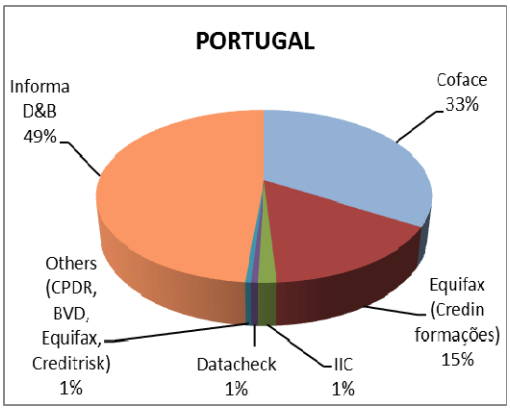
For resellers of business information, the barriers to market entry are significantly lower, but include availability of data, development of database storage and delivery channel infrastructure.

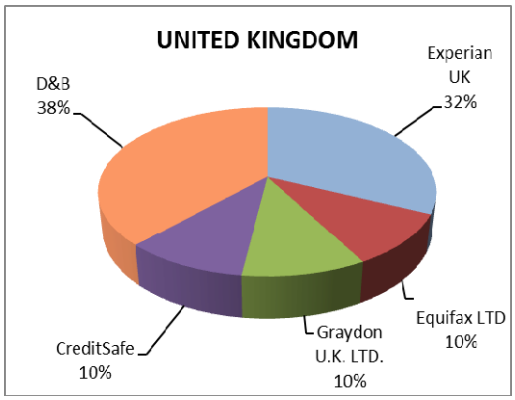
Some respondents of the survey that have a rating license considered the complexity of requirements to obtain a CRA-licence, which are primarily designed for big rating agencies (e.g. rotation of analysts), as a potential hurdle in their consideration to enter the market. However, they consider credit rating business for mid-cap and mid-sized companies as an attractive market

segment that has not been exploited yet, as it is not on the focus of the big three CRAs). The newly agreed European credit rating platform operated by ESMA will publish online all available credit ratings (except those who are provided based on a fee), enhancing comparability of credit ratings and improving the visibility of new credit rating agencies.

Chart 5.5.1-5.5.8 **Market shares of Business Intelligence and Scoring firms in different Member States**

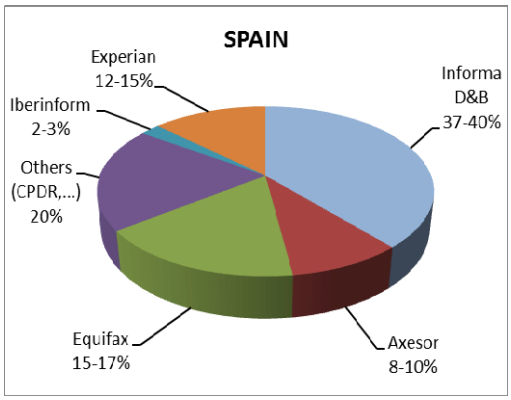






Source: Synthesis FEBIS Study 2010
Note that the market share for CreditSafe in France is approximated. According to responses, there are not significant changes in market share until End 2012

Chart 5.5.9 **Market share of Business Intelligence and Scoring firms**. Spain 2011



Source: Respondent's data.

5.6. CONTRIBUTION TO SME GROWTH

Research on SMEs is costly and time consuming, while potential customers are often not inclined to pay for it. Provisions should be implemented to make existing research and ratings information available to a wider set of potential investors and thus help reduce information asymmetries associated with smaller companies. In some countries, such as the US and UK, the SME market is sustained by a market maker model where the market makers offer information platforms for SMEs based on firms' spreads. However, some market participants believe that the market maker model does not propose enough transparency (ESMA 2012).

In order to facilitate outreach of SMEs, their visibility can be increased through evaluations and improved information provided by BI & Scoring firms (see Annex 5.9). BI & Scoring industry contributes to business development and growth of SMEs in different ways:

Supply chain management. Agile supply chain is critical to companies' success. Many SMEs suffer under liquidity squeeze and thin capital cover, however to foster sales they are compelled to grant trade credit to their customers. BI & Scoring is a key tool for evaluating the financial and operational performance of customer. Information about the credit worthiness forms the basis for a decision whether to take the risk of granting a loan. A badly scored company will of course hardly receive a loan or overdraft facility from its supplier.

Manage credit risk and own finances of SMEs. Respondents reported that the number of companies with a credit risk policy implemented inside their commercial process has increased in the last years. Scoring is one of the major tools in companies' credit decisions making process. A company uses business information to evaluate its capacity to fulfil its commitments and to minimise financial losses incurred by commercial business partners, who are unable or unwilling to pay their debts.

Improve access to finance. SMEs use their own scoring to assess finance and/or re-negotiate financing conditions. Knowing their own score and understanding how it has been estimated may help SMEs to negotiate with their banks or other financing solutions. Respondents reported that BI & Scoring industry has significantly improved banks' credit processes, which in turn have improved SMEs access to finance in different aspects as listed below.

- Use of objective information. Raw data and credit bureau data, used in SME's credit processes, contribute to reduce the lack of information on the segment and widen the availability of credit to the so called "non-clients", as well as reduce response time.
- Use of scoring systems in the standardized approach. This has made credit-decisions on SMEs systematic, objective and time efficient. Models developed from several respondents are widespread not only among financial institutions, but also corporates.
- Outsourcing of application processes and scoring. Applying sophisticated risk management and credit-decision tools developed by BI & Scoring firms for small and mid-tier banks that cannot afford large investments, supports accurate assessment of SMEs' creditworthiness. Moreover, the crisis has increased the pressure on margins and depreciation caused by insolvencies has increased. Therefore smaller banks have outsourced different processes to BI & Scoring firms, such as the inquiry of qualitative factors within the internal credit and rating methodologies. Moreover, banks are increasingly using external scorings as a second opinion to the internal rating results.

Trends towards disintermediation

Non-financial corporates in Europe depend on banks for most of their debt finance. The share of the banking sector in Member States is large by international comparison, reflecting the European economy's greater dependency on bank intermediation.

However, many banks have started to de-risk their business in order to adjust to pressures in their funding through deleveraging their balance sheets (by increasing equity capital and/or disposing of assets) as well as changes in funding structures. While deleveraging after the crisis is necessary, this process may last for several years, with the consequence that credit might become less available and more costly, changing the attractiveness of different types of investments and altering the feasibility of some banks' business models (MGI 2011).[163] One of the reasons why deleveraging has been relatively slow is due to the interventions of governments and the ECB to provide swift and abundant liquidity. As these interventions are for a limited period of time, the impact of deleveraging on investments and lending might be more noticeable afterwards.

[163] The past experience shows that deleveraging episodes last six to seven years on average and reduce the ratio of debt to GDP by 25 percent. See McKinsey Global Institute (2011).

The ECB bank lending survey October 2012 reports that net tightening of credit standards by Euro area banks for loans or credit lines to enterprises increased (15% in net terms, compared to 10% in the second quarter of 2012). The responding banks expected a further tightening of standards for the near future.[164] Main reasons were the negative economic outlook, as well as the actual bank capital positions and the related ongoing need for balance sheet adjustments named. In terms of company type, the tightening of credit standards has applied more for loans to small and medium-sized enterprises (SMEs) than to large ones, while in terms of maturity, the tightening of credit standards increased for both short- and long-term loans. Unless corporates have access to alternative sources of finance, any decline in bank lending is likely to have an adverse impact on corporates' ability to finance operations and investment especially for SMEs which are highly dependent on banking sector.

Market-based funding

European non-financial companies finance their investment largely through bank loans, but since the onset of the crisis they have relied more on market-based funding, including different financial instruments, such as equity, debt securities, inter-company loans and trade credit. In terms of firms' capital structure, equities are still the most important source of financing, counting for about 48% of external financing sources, followed by inter-company loans (around 20%) and trade credit (around 10%) during the crisis period (Q3 2008 – Q2 2012) according to the European Financial Stability Report (ECB 2012). For the total amount of non-financial companies including SMEs, debt securities play a minor role. However, for large corporates they are an increasingly important source of funding. In contrast to the tight bank credit conditions, debt markets have shown more positive development in the last year. Based on the balance sheet information for 161 European firms, Fitch (2011) reported how bank debt has decreased since 2008, while the role of bonds has increased over recent years. However, although EU corporate bond markets have developed in the recent years, the non-financial corporate bonds account still only for 15% of non-financial corporate debt (compared to 47% in the US).

Increasing reliance on alternative market-based funding will intensify the demand for external credit worthiness evaluation, as in some countries midsized companies have to reorient themselves towards capital markets. Respondents reported that in ES, IT and FR governments are keen to establish a fixed income market for medium-sized companies. In DE the infrastructure is provided by (currently five) regional exchanges, a segment that is slowly, but continuously growing. One respondent expects that in the medium-term 15-20% of bank lending will move to alternative sources of financing in their home country.

It should be noted that the review of the Regulation on CRAs (CRA III) includes measures aimed at reducing overreliance on external credit ratings.[165] Financial institutions[166] shall make their own credit risk assessment and shall not solely or mechanistically rely on credit ratings for assessing the credit worthiness of any entity. In consequence business wishing to attract qualified investors

[164] See chapter 1 for more information on bank lending.

[165] Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EC) No 1060/2009 on credit rating, COM (2011) 747 final.

[166] Credit institutions, investment firms, insurance and reinsurance undertakings, institutions for occupational retirement provisions, management and investment companies, alternative investment fund managers and central counterparties.

will be required to make available reliable and regular financial information anyway. This will make risk assessment more effective and help mid-caps and SMEs to better assess market-based funding.

Developing harmonised "Minimum Technical Standards" on external evaluation for SMEs could facilitate their access to market-based financing.

5.7. EXPERIENCE WITH THE SINGLE MARKET

Respondents consider that it is difficult to expand their business in other Member States, because of strong local competitors. Therefore, they cover these markets in two ways: (i) by building networks and (ii) by establishing strategic partnerships:

Networks: several BI & Scoring providers in Europe are organised in networks in order to exchange information in an integrated fashion, using explicit identification for each company. Scores – which usually differ between BI & Scoring providers in different countries – are mapped, so that collaboration in a network allows a member to receive information for a specific enterprise from all member countries in a seamless and comparable fashion. There are currently two big networks in Europe, BigNet and D&B[167].

Strategic arrangements and partnerships: for respondents that have not joined a network, strategic partnerships with similar entities operating in foreign markets are essential and remain the way forward to expand their business in the future. However, in doing so, they encounter numerous difficulties.

Difficulties for cross-border expansion arise from differences among scores and risk assessment of the individual BI & Scoring firms (e.g. definition of defaults, type and amount of information used) and from differences between countries on the availability and quality of data. One reason of the difference stems from the differences in privacy law and data protection rules of the Member States. Most of the respondents reported that the Commission initiative "bureaucracy reduction/discharge for smaller enterprises" that releases micro entities from the obligation to set up annual accounts might have unintended negative consequences, as it could potentially negatively affect the amount and quality of data they receive, thus lowering the quality of scores. Low quality scores could however impede SME's access to finance, thus their business developments and growth in the medium-term.

Respondents reported different measures that might help to facilitate their cross-border expansion and increase integration of the single market. They are as follows:

- introduce a certain degree of harmonisation of methodology and data requirements;
- secure sufficient publicly available data to facilitate credit-worthiness assessments;
- create a European database for defaults, giving more transparency of the BI & scoring industry in the EU market;

[167] D&B (Dun and Bradstreet Worldwide Network) is the world leader in business information, covering 200 countries and 200 million companies, giving online information. BigNet was the European answer to D&B. In the last years, both firms have opened their circle for the members of the other network.

- promote ‘Scoring Technical Standards’ and a registration status, in order to ensure a standard quality across the industry;
- establish a unique register of European companies;
- support a common definition of financial reporting standards;
- support in the long-term common European accounting standards (IFRS) for all companies;
- standardisation of NPL criteria;
- introduce common bankruptcy laws that would promote a harmonized default definition;
- support strategic arrangements both within and outside EU.

On the relatively new rating business, two of the respondents see opportunities for a greater collaboration with other European companies in order to provide ratings at European level. They consider this also to be an important step towards establishing an alternative European agency to the traditional rating companies (S&P, Moody´s and Fitch). However, high fixed costs in rating business are considered as a difficulty for cross-border expansion.

5.8 CONCLUSION

The BI & Scoring industry may play a crucial role for business development and growth of SMEs. Their services are already an integral part of the supply chain and of the companies' working capital management[168]. Their services may improve SMEs’ access to finance in both the banking industry and in the alternative sources of finance industry (e.g. corporate bond markets). They also establish risk awareness within the firm through progressive credit risk management systems and facilitating business decision-making.

However, roughly 25% of European SMEs are not scored, mainly due to insufficient or inappropriate data. Data availability is an important element to access a company’s credit risks and to enhance its transparency and visibility towards clients and the business community. It is well known that micro and small companies are often exposed to insolvency due to their insufficient financial resources. Data on financial statements and their payments’ records would help to increase transparency and build confidence with respect to their business partners.

Moreover, disclosure and accessibility of business information is a key factor to access finance. The broader information on SMEs and public disclosure in the US compared to the EU is one of the reasons for more developed and diverse financing opportunities in the US. Here, not only legislation, but also differences in culture play a role. In contrast to the EU, many companies in the US are more willing to disclose business information. Therefore, initiatives to encourage European companies to disclose more about their financial status might help.

There is a high concentration in the BI & Scoring industry, but the business models of the firms are quite diverse, ensuring stability and less pro-cyclicality in the EU-market. However, penetrating foreign markets within the EU is rendered difficult by several factors. The most

[168] The goal of working capital management is to ensure that a firm is able to continue its operations and that it has sufficient ability to satisfy both maturing short-term debt and upcoming operational expenses.

important are: strong local competitors, differences in availability and quality of data (which relates often to privacy and data protection law), as well as disparities in risk assessments (e.g. definition of defaults, type and amount of information used). Market integration is revealed in networks and strategic arrangements.

BI & Scoring is not a regulated industry, which is one of the reasons for the variety in the quality of scores. Given the importance of scoring for the SMEs financing and credit risk assessment, it is worth considering whether “minimum requirements” or “technical standards” or a “special regime” for the BI & Scoring industry would help to ensure a common ground for quality. Developing harmonised minimum quality standards on external credit scoring for SMEs would facilitate (cross-border) financing of their investments and deepen market integration. Options in this regard are also discussed in the recent Green Paper of the European Commission on the long term financing of the real economy.

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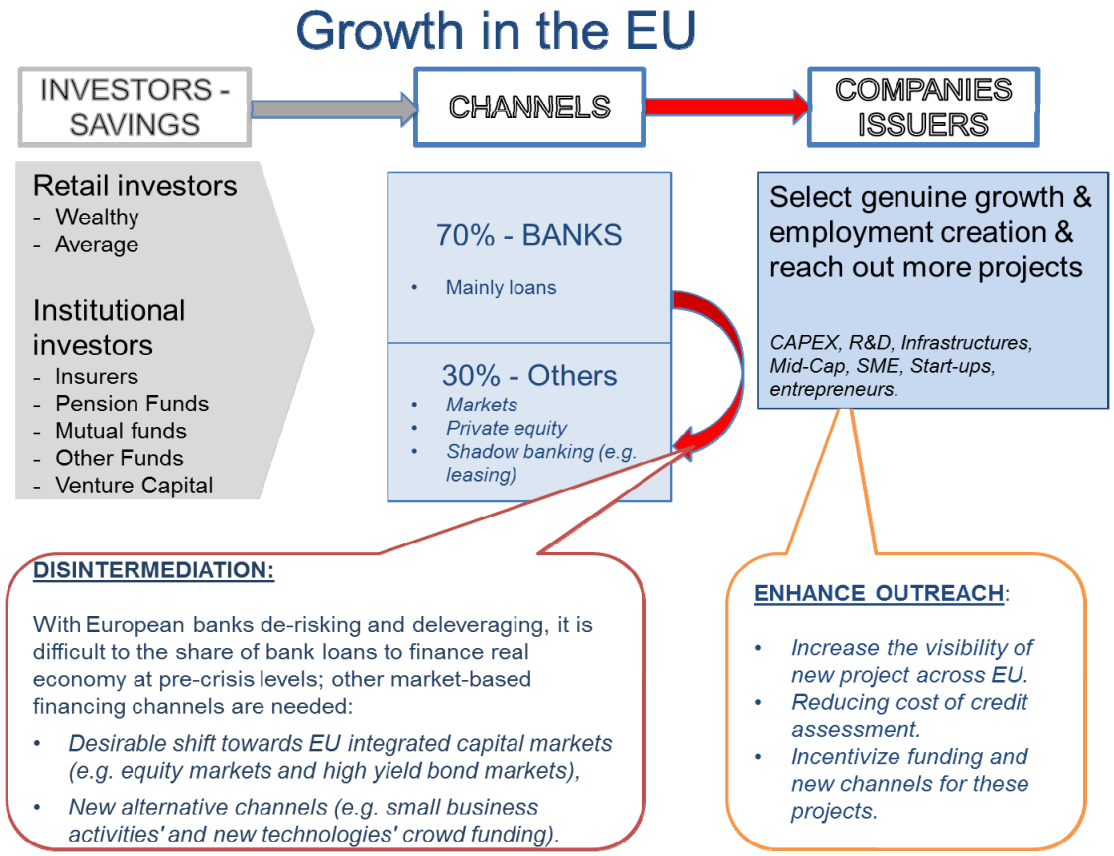
5.10 ANNEX

Chart 5.9.1 **Market Rationale of the study.**



Source: Commission Services.

5.11 LIST OF ABBREVIATIONS

BI & Scoring	Business information and scoring
CRA	Credit Rating Agency
EBA	European Banking Authority
ECAF	Eurosystem credit assessment framework
ECAI	External Credit Assessment Institution
ECB	European Central Bank
ESMA	European Securities and Market Authority
SME	Small and medium enterprises

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