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Economic Review of the Financial Regulation Agenda
Chapters 5 to 7

Accompanying the document

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

A reformed financial sector for Europe

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CHAPTER 5: THE COMPLEMENTARITY OF REFORMS

This chapter builds on chapter 4 to further highlight the overall coherence of the financial reform agenda and to summarise how different reform measures complement each other and work together to meet the overall aim of building a well-functioning financial system that is conducive to sustainable economic growth.

Many of the reform measures contribute to delivering on more than one key objective of the reform, and the objectives themselves interact to achieve a well-functioning financial system. What follows should not be interpreted as a fully exhaustive list. Rather, the chapter aims to illustrate why the different reform measures are overall coherent and complementary in achieving the reform objectives and also to highlight some aspects that were not covered in the analysis in chapter 4.

5.1 COMPLEMENTARITIES IN ACHIEVING A GIVEN OBJECTIVE

No single reform measure would have been capable of tackling the different underlying failures revealed by the financial crisis and achieving the wider reform objectives. Different rules are required to meet different objectives, and even the rules that aim at the same objective are necessary to the extent that they address different underlying problems in the market and/or reinforce each other in achieving the desired objective. The EU, in close cooperation with its international partners in the G20, therefore opted for a comprehensive set of measures to address the different failures.

In the banking sector, a large number of measures were needed to be taken to increase the stability and resilience of EU banks. Some may argue that higher capital requirements for banks are an all-encompassing solution to most financial stability considerations. However, given the number and severity of failures observed in the financial crisis, it is difficult to see how capital could be such a powerful tool. While capital can be used ex post to absorb losses of a bank when failure occurs, it does not tackle the different underlying incentive problems that can give rise to failure ex ante. Higher capital requirements enhance the resilience of individual banks, but are not sufficient to enhance the stability in the market as a whole. Moreover, given the size and leverage of bank balance sheets, the levels of additional capital that would need to be raised to address the different underlying problems could be so high that they would have disruptive effects on the ability of banks to support real economic activity, at least in the transition phase (see also chapter 6). In general, even if capital charges were capable of achieving the desired effects, the required capital levels would need to be set so high that the negative consequences would most likely outweigh the stability benefits. Thus, complementing capital requirements with further measures helps achieve the stability objectives while limiting disruptive effects. That is, **the combination of different measures allows achieving the stability objective not only more effectively but also at lower cost**.

Structural reform as a complement to other bank sector reforms

Bank structural reform provides a good example of how reform measures can complement each other in achieving a given objective (in this case, greater stability

and resilience of banks). As discussed in section 4.2.6, various bank sector reforms are needed to address the problem of too-big-to-fail banks. Higher capital requirements (Basel III, as implemented in the CRD IV package in the EU) and the availability of bank recovery and resolution tools (under BRRD) are necessary to reduce this problem. However, they are not sufficient in particular for the large European banking groups which are universal banks and typically combine retail/commercial banking activities and wholesale/investment banking activities in one corporate entity, or in a combination of interconnected entities. Thus, to complement existing reforms, structural measures have been proposed by the European Commission in January 2014 to reduce the probability and impact of failure of TBTF banks.

Structural bank reforms, which seek to require separation of significant high-risk trading activities from other activities within the banking group, can **complement the reforms related to capital requirements** as follows:

- Addressing TBTF problems by higher capital requirements only would not address the fundamental inconsistency of, on the one hand, "taxing" systemic risk and trading activities with capital requirements while at the same time allowing these activities to be performed by entities that enjoy explicit and implicit subsidies through coverage of their activities by public safety nets. Structural bank reform addresses the inconsistency and can eliminate undue implicit subsidies of activities that contribute to systemic risk and excessive trading, in full alignment with the prudential capital requirement framework;

- Irrespective of the changes to the capital requirements that increase the amount of capital required for market risk, banks could still have significant incentives for engaging in trading activities given the particularly substantial profits of such activities.[1] This has induced a broad-based shift towards these activities, at the expense of traditional activities, with an increase in systemic risk being the consequence. As shown in section 4.2.1, the ratio of risk weighted assets to total assets is significantly lower for TBTF banks, which typically have an important trading book, than for other banks.[2] In addition, the capital requirements for market risk that are based on value-at risk ("VaR") model calculations can still be small compared to the size of trading assets.[3] Standard setters at both international and European level are currently critically assessing the consistency and accuracy of the risk-weighted asset approach;[4]

- Whereas a (non-risk weighted) leverage ratio helps addressing TBTF risks, it is a blunt tool that helps as a backstop against RWA manipulation, but does not adequately tackle risk-taking incentives. It would have to be set at a high

[1] See for example Boot and Ratnovski (2012).

[2] *"The ratio of risk-weighted assets to total assets differs significantly between banks. It is remarkable that the banks with the highest amount of trading assets, notional derivatives, etc. (i.e. banks that are least "traditional") tend to have the lowest ratio*." Report of the High-level expert group on bank structural reform (2012).

[3] "*[…] for a sample of 16 large EU banks, the capital requirements for market risks vary between close to 0 % to just over 2 % of the total value of trading assets, the average being close to 1 %.*" Report of the HLEG, p. 48. This explains why some measures have been taken, e.g. the use of stressed VaR as part of Basel II.5's revisions to the market risk framework.

[4] See European Banking Authority (2013) and BCBS (2013).

level to fully off-set the remaining incentives in favour of trading. Given the current size of the banks under consideration, ensuring that sufficient capital is funding the activities may pose difficulties. Structural reform complements capital adequacy regulation and may avoid such difficulties;

- The prudential framework for banks is complex. This complexity also stems from the increased variety and complexity of bank activities that have been regulated via complex capital standards (Hoenig and Morris (2011)). These complex standards are difficult to monitor and understand for banks, supervisors, and the market. Structural reform may help to simplify supervision and enforcement of capital requirement regulation;

- Capital requirements do not address potential conflicts of interest between banks and their customers and misalignments between a commercial banking and an investment banking culture within a single "unstructured" banking group;

- Structural reform facilitates market monitoring, as envisaged in Pillar 3 of the capital adequacy framework, by providing more transparent group structures that match the main business lines, and by providing more disclosure of the data of the segregated business entities. This also allows a more effective and transparent tailoring of capital requirements to the different legal entities. A structural separation would entail different entities holding separate capital and liquidity buffers, aligning the prudential requirements more closely with the risk. This promotes market discipline.

Structural bank reforms can also **complement the reforms related to bank recovery and resolution** in a number of ways:[5]

- Structural bank reform is an ex-ante tool to address a broader set of objectives beyond facilitating the orderly recovery and resolution of a banking group. Structural reform also aims at reducing the complexity, interconnectedness, cultural problems and conflicts of interest between the different banking entities within a given group, and aims at reducing the excessive growth of bank balance sheets by constraining the coverage of the public safety nets to specific activities only;

- As regards impact of failure, implementation of the BRRD will pave the way for the orderly resolution of average EU banks and thus will significantly reduce the impact of failure of such banks on public finances. However, the resolution powers may be challenging to exercise for TBTF banks, given their particularly large, complex and integrated balance sheets and corporate structures. Structural reform will increase the options available to authorities

[5] Structural reforms could also complement Banking Union. Banking Union is meant to reduce the inappropriate links between sovereigns and their banks. However, by shifting the risk to the supranational level, implicit subsidies and the corresponding problems of moral hazard, aggressive balance sheet expansion, and competition distortions become even more prominent. As a result, Member States may be reluctant to mutualise (future) risks through Banking Union, in the absence of structural reform and credible orderly resolution mechanisms. Targeting the safety net to those core banking activities that deserve subsidisation and protection because they address a market failure reduces the scope of the public safety net.

when dealing with failing banking groups, because the banking group balance sheet will be better structured into more distinct and autonomous building blocks. By increasing the resolvability of a bank, it will also increase the credibility of bank resolution, leading to improved market discipline and bank balance sheet dynamics. Also, structural reform could limit the scale of the task on an entity basis and thereby make it more feasible to apply the different resolution tools. This could also allow a swifter resolution process, as it would be easier to identify problems and apply targeted solutions. The resolution planning offers a vehicle to address potential impediments to resolution. In the absence of a more clearly structured corporate group structure, it might be difficult for a resolution authority to exercise its discretionary judgment and impose, for example, a divestment of a part of a large and complex diversified banking group. All this may explain market perceptions of remaining implicit subsidies and calls for further clarity as regards structural measures;[6]

- Structural reform can potentially curtail contagion by clearly mapping and controlling intra-financial sector exposures. If left uncontrolled, bail-in may give rise to undue contagion (as bail-in related losses may create losses and distress at other linked financial institutions), although the BRRD provides for tools to avoid widespread contagion when bail-in is applied. Structural reform may enhance the effectiveness of the bail-in tool to the extent that it further curtails contagion.

Other complementarities in achieving a given objective

Examples of complementarities in the rules also exist in relation to other objectives. For instance, as regards consumer protection, the reforms are based on a cross-sectoral approach to ensure that consumers can access financial markets on fair grounds and benefit from the required protection irrespective of whether they consume banking, insurance or investment products and services. Hence, among other consumer protection legislation, the reforms introduce standards for better information and better financial advice in relation to all main retail financial products and services – e.g. mortgage loans (MCD), bank deposits (DGS), payment accounts (payment accounts package), investment services and funds (MiFID II, PRIIPs and UCITS) and insurance products (IMD II).

As regards efficiency in financial services, the access provisions contained in MiFID II, EMIR and the CSDR reduce existing barriers to access to trading venues, CCPs and CSDs, respectively, and thereby enhance competition along the whole securities trading chain. Combined with the other efficiency enhancing measures (see also section 4.8), the three pieces of legislation together seek to improve the structure and transparency along the trading chain and jointly contribute to further reducing the barriers and costs to trading and post-trading in Europe.

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[6] See e.g. Moody's (2013) assessment of the BRRD: "*Taken at face value, the draft is credit-negative for senior unsecured creditors of the roughly two-thirds of EU banks whose ratings incorporate some level of systemic support uplift. It is unlikely we would remove all systemic support from every EU bank's rating in the foreseeable future, but a change to our assumptions would imply lower ratings for some or all banks. However, there are a number of important areas in which we need greater clarity before we can take a definitive view on the implications for EU bank ratings. For example, to be able to assess the Directive's impact we would ideally want to understand […] the plans for broader structural changes in the EU banking industry*"

Without going into the detail presented in chapter 4, Table 5.1.1 provides an overview of the main reform measures and how they complement each other in reaching the relevant reform objectives.

Table 5.1.1: **Complementarities in achieving the objectives**

Primary objective	**And how it is reached**
A stable financial system	
Avert bank runs	• CRD IV package (increased loss absorbency; better liquidity management; improved internal governance) • DGS (strengthening the safety net for depositors in case of bank failures) • BRRD (orderly resolution, depositor preference)
Prevent the build-up of systemic (macro-prudential) risks	• Establishment of the ESRB • Macro-prudential elements in CRD IV package (e.g. systemic risk buffer) • EMIR (central clearing; conservative margin requirements and haircut policies; prudential requirements for CCPs) • increased disclosure requirements (e.g. MiFID II, SSR, CRD IV package, AIFMD)
Reduce pro-cyclicality	• ESRB • Macro-prudential elements in CRD IV package (e.g. countercyclical capital buffer) • CRA regulations (reduced mechanistic reliance of investors on external ratings) • EMIR (stable margin requirements and haircut policies through the cycle)
Reduce interconnectedness	• Banking sector: Structural reform proposal; CRD IV package; BRRD (ensures resolvability of banks) • Securities markets: EMIR (mitigation of counterparty risk); MiFID (circuit breakers); SSR (restrict short selling in extraordinary circumstances, ban on uncovered short sales) • Asset management: AIFMD (regulation and supervision of previously unregulated actors); MMF Regulation • Business environment: CRA regulations (improved quality of ratings); audit reform (ensure high-quality audit reports)
Prevent regulatory arbitrage and close regulatory loopholes	• Globally consistent rules for main reforms (e.g. EMIR, CRD IV package, BRRD, MiFID II) • Regulation of previously unregulated sectors (e.g. AIFMD, shadow banking) • • Overall increased transparency vis-à-vis supervisors and market participants
Ensure resolvability	• BRRD, SRM for Euro area+ and those joining voluntarily • Bank structural reform • *Forthcoming: proposal for resolution of non-banks, in particular CCPs*
Address too-big-to-fail	• Banking sector: CRD IV package; BRRD; SRM; Structural reform • EMIR (by shifting risks from the banking sector to CCPs) • *Forthcoming: proposal for resolution of non-banks, in particular CCPs*
Align incentives	• Cross-sectoral policy elements (e.g. sanctions, securitisation, governance incl. remuneration) • Central clearing of derivatives transactions; trading on organised, transparent venues (EMIR, CRD IV package, MiFID II)

	• Requirements for investments in securitisation positions (CRD, AIFMD, Solvency II) • Internal governance and remuneration (CRD IV package, MiFID II, UCITS, AIFMD, benchmarks) • Sanctioning regimes (e.g. CRD IV package, MIFID II, AIFMD, UCITS) • Reduce conflicts of interests: CRA regulations; audit reform; MiFID II (trading platforms; investment advice) • *Forthcoming: review of the Shareholders Right Directive*
Stable and resilient financial market infrastructures	• MiFID II • EMIR • CSDR
A stable shadow banking sector	• CRD IV package; Solvency II • AIFMD • MMF regulation • Transparency of securities financing transactions
A stable and resilient insurance sector	• Solvency II; Omnibus • Establishment of EIOPA
Financial integration	
A reinforced single market facilitating the financing of the economy	• Single rule book • EuVECAs, EuSEFs, EuLTIFs
Enhanced supervision and enforcement	• Strengthening the powers of competent authorities (e.g. CRD IV package; MiFID II) • Establishment of the ESFS • Ensure appropriate supervision of all actors (e.g. CRA regulations, audit reforms, AIFMD, MMF regulation) • Horizontal approach on sanctioning regimes • SRM, SSM for Euro area+ Member States and those joining voluntarily
Breaking the adverse feedback loop between banks and sovereigns	• SRM, SSM for Euro area+ Member States and those joining voluntarily
Market Integrity and confidence	
Countering market abuse	• MAR/CSMAD • Proposal on benchmarks/financial indices
Protection of consumers and retail investors	• EU-wide creditworthiness assessment and responsible lending standards (MCD) • Standards for better information about financial products and services and higher standards for financial advice (MiFID, PRIIPs, IMD II, MCD, UCITS, PAD) • Better protection of the assets of consumers (DGS, ICS, rules on asset safekeeping in UCITS and AIFMD) • More secure alternative payment methods (PSD II) • Prohibition of surcharges (MIF regulation) • Streamlined switching processes and ensuring access to basic payment accounts (PAD)
Enhancing the reliability of financial information and credit ratings	• CRA regulations • Audit reform • Accounting reforms
Countering money laundering and terrorist financing	• AML framework
Efficiency	
Reducing the implicit subsidy for TBTF banks	• CRD IV package • Bank structural reform

	• BRRD, SRM
Securing more risk-reflective pricing	• CRD IV package • Solvency II • EMIR
Enhancing competition and efficiency	• CRAs (facilitating market entry) • MiFID II, EMIR, CSDR (opening access to market infrastructures) • BRRD (facilitating market exit)
Reducing information asymmetries	• EMIR • MiFID II, PRIIPs, IMD II, DGS, MCD • SSR • AIFMD • Prospectus Directive
A financial framework reactive to financial innovation and technological development	• ESMA/EBA/EIOPA (powers to temporarily prohibit certain products or practices) • MiFID II (safeguards for algorithmic and high frequency trading; OTF); reinforced by MAR • Transparency Directive (to cover Contracts for Difference) • Payments package
Ensuring access to finance	• Reducing the administrative burden and reporting requirements for SMEs (e.g. Prospectus Directive, Transparency Directive, Accounting Directive, MAR) • Creating a dedicated trading platform to make SME markets more liquid and visible (MiFID II) • Addressing SME risk-weighting in the bank capital framework (CRD IV package) • Introducing new EU frameworks for investment in venture capital (EuVECAs) and in social entrepreneurship funds (EuSEFs)

Source: Commission Services

5.2 COMPLEMENTARITIES BETWEEN OBJECTIVES

Many of the reform measures contribute to delivering more than one of the four main objectives of the EU financial regulation agenda. Moreover, the objectives themselves interact and only in combination achieve a well-functioning financial system.

Financial stability is of little benefit to the economy if this is achieved by unduly hindering the efficient functioning of the financial system. This is why **the reform agenda is focused on correcting market failures**. As already set out in chapter 4.8, a number of measures contribute to both financial stability and efficiency:

- A transparent financial system allows better monitoring of transactions and market developments by supervisors as well as proper market analysis and monitoring by investors. Enhanced disclosure and reporting requirements (e.g. the flagging of short sales, reporting obligations to trade repositories, the improved disclosure regime for issues in the Prospectus Directive, the increased transparency on algorithmic trading activities and trading in commodity derivatives markets) will reduce information asymmetries and thereby enhance both the stability and efficiency of the financial system (and also contribute to its integrity). Stricter disclosure requirements to supervisors (e.g. AIFMD, MiFID II, SSR) will facilitate monitoring of exposures and enable supervisory authorities to identify and assess emerging risks at an early

stage. Transparency will also be beneficial for financial institutions and will contribute to better internal risk management practices and lead to better-informed decisions by investors and consumers. Again, this benefits both stability and efficiency in the system by providing better control and market discipline in order to avoid excessive risk-taking and instead ensure that risk is properly taken into account by all market participants.

- The package of reforms aimed at correcting the TBTF problem in the banking sector (in particular CRD IV package, BRRD and structural reform) contributes to financial stability because a reduction in the implicit subsidy for TBTF banks reduces incentives for excessive risk-taking. At the same time, the reform package enhances efficiency by reducing distortions in competition between banks that benefit from an implicit subsidy. It also helps redirect resources to more productive uses from a societal point of view as opposed to simply maximising bank returns.

- Similarly, the improved prudential framework for banks as well as the new risk-based capital requirements for insurers in Solvency II, combined with improved risk management standards, will induce financial institutions to internalise the risk of their activities. This will not only improve stability (by reducing incentives for excessive risk-taking) but also contribute to efficiency (by promoting efficient, risk-reflective pricing).

As regards the objective of market integrity and consumer confidence, this also interacts with and reinforces financial stability (as well as the efficiency and integration objectives). For example, the different reform measures to reduce abusive market practices and better protect consumers and investors will enhance their trust and confidence in the financial system, which in turn is a pre-condition for the system to function in a stable (and efficient) manner.

The market integrity and the efficiency objectives are similarly and strongly related. For example, the audit reforms mandate the rotation of auditors. This aims at increasing auditor independence by tackling the risk of conflicts of interest due to familiarity, thereby enhancing integrity in the audit market. This also has the positive effect of bringing more dynamics in the concentrated audit market, which potentially can open the market to more audit service providers in some segments. Similarly, the black list of prohibited non-audit services is tackling the potential risk of conflict of interest, and at the same time it provides market access to provide those services to other providers than audit firms (in the current market situation the provision of audit services is often used by audit firms as an access to the client, allowing afterwards the provision of even more lucrative non-audit services). Therefore, to the extent that they target the underlying market failures (namely, conflicts of interest due to asymmetric information and lack of competition), the reforms are expected to bring about benefits in terms of both greater integrity and enhanced competition (efficiency) in the audit market. A similar point can be made in relation to the new CRA regulations.

As another example, the various transparency and disclosure requirements in retail financial services aim to reduce the informational disadvantages of consumers and thereby put them in a stronger position vis-à-vis the providers of financial services. This is likely to not only improve the competitive functioning of the market (i.e.

benefiting efficiency) but also reduces the risk of unfair and abusive market practices (i.e. benefiting market integrity and consumer protection).

Finally, financial integration needs to go hand in hand with the financial stability objective. As the crisis experience has shown, financial integration needs to be complemented by a strong regulatory and supervisory framework to avoid that cross-border capital flows become a source of financial instability (see also chapter 3.3 and chapter 4.6). The reforms of the institutional framework to strengthen the single market and the functioning of monetary union (single rulebook, ESFS, Banking Union) therefore target both financial integration and stability.

The potential frictions between financial integration and stability, in the absence of an appropriate regulatory and supervisory framework, extend to the global level. Given the global nature of many financial services markets, regulation and supervision cannot stop at national level. Rather, there is a need for **globally consistent rules** in markets that are global in scope. The EU is closely cooperating with its international partners – both at multilateral level (G20, FSB) and also bilaterally (e.g. regular financial market regulatory dialogues with major jurisdictions) to encourage jurisdictions and regulators to defer to each other – when it is justified by the quality of their respective regimes - in order to avoid extra-territorial applications and duplications of rules. The financial reforms also aim at overcoming the existing barriers to entry for third country (i.e. non-EU) market participants and to ensure a level-playing field by introducing third-country equivalence regimes in various pieces of legislation (e.g. MiFID II, EMIR, AIFMD, CRA, benchmark regulation). The system based on the concept of equivalence has been significantly refined in recent years, and should be further improved in the future.

While significant progress has been made toward a global framework (e.g. implementation of Basel III, OTC derivatives), work is still ongoing in several policy areas (e.g. shadow banking, too big to fail, resolution) as well as to ensure effective, convergent and consistent implementation of the agreed reforms. The latter is particularly important to avoid regulatory arbitrage and overlapping and inefficient cross-border regulatory regimes (see chapter 7.9).

5.3 COMPLEMENTARITIES BETWEEN SECTORS

Most regulatory reforms target a specific sector and seek to enhance the functioning of that sector by making it more stable, responsible and efficient. Different sectors are highly interlinked and connected: banks and insurers offer their services and provide finance to each other; banks raise short-term funding from shadow banks; financial markets and infrastructures facilitate the issuance and trading of financial instruments by financial institutions; and so on. Thus, reforms that are targeted at increasing the stability, integrity or efficiency in one sector will indirectly benefit those sectors that have a claim on or customer relationship with it.

A particularly relevant example relates to how large banking groups are intertwined with shadow banking entities and activities through their asset and liability side, both on and off balance sheets. As already noted in chapter 4.4, shadow banks provide up to 7 % of banks' total liabilities in the EU, and banks hold up to 10 % of the assets issued by the shadow banking system (ESRB, 2014). Measures to enhance the

stability of the shadow banking sector will therefore also contribute to a more stable banking sector. For large European banks made losses linked to their MMF activities amounting to hundreds of millions of euro.[7] In this respect, the MMF regulation will reduce the contagion links between MMFs and their sponsors, both by strengthening the liquidity and capital standards and by introducing rules on external support.

Similarly, the proposed measures to enhance the reporting and transparency of securities financing transactions will shed light and allow better control of a key source of contagion for banks (and other financial institutions engaged in such transactions) via the shadow banking sector.

The banking sector is also closely connected with the insurance sector, including in the provision of finance to each other. There is evidence that insurers' understanding of the complexity and risks of banks reduced their willingness to hold bank equity and debt, especially since the start of the crisis. In this regard, the reforms that ensure safer and more transparent banks may enhance the willingness of insurers to invest in banks.[8]

Financial markets and infrastructures are critical for many transactions within the financial sector itself (and with the wider economy). More resilient (and efficient) infrastructures are beneficial for other financial institutions in their role as traders, investors or issuers of financial instruments.

More generally, the financial regulation agenda seeks to strengthen the overall resilience of the financial system both by making individual sectors more stable (e.g. capital requirements for banks) and by reducing risks of contagion between sectors (e.g. transparency requirements for OTC derivatives and securities financing transactions). Given the interlinkages in the financial system, strengthening one part of the system generally also reduces risk in other parts of the system (also because the reforms seek to avoid that risks are merely shifted from one part of the system to another).

These interlinkages are also relevant when it comes to market integrity and confidence. As seen during the financial crisis, evaporation of trust quickly spills over from one sector to the next and can adversely affect the whole financial system. Reform measures to enhance confidence and trust in one sector help building confidence in the financial system as a whole.

5.4 CROSS-SECTORAL SYNERGIES BETWEEN REFORMS

Given the links between sectors, the financial regulation agenda is based on a cross-sectoral approach that aims at consistent rules and a common supervisory and enforcement framework across sectors. Also, some reforms that target specific sectors have been drafted to create synergies with reforms in other sectors. Reforms with significant cross-sectoral synergies include the following:

[7] See the impact assessment of the proposal for a regulation on MMFs, SWD(2013) 315 final.

[8] Potential negative interactions between bank reforms and Solvency II for insurers are separately discussed in chapter 6.

- There are synergies between the CRD IV package in banking and the EMIR reform of derivatives markets. The former imposes higher capital and collateral requirements on banks for derivatives that are not cleared centrally. This will encourage a critical mass of contracts clearing via CCPs. In turn, this increases the probability that CCP clearing can effectively mitigate counterparty risk, as intended by EMIR.[9]

- The legislative framework on CRAs ensures better supervision of CRAs, improves the quality and transparency of credit ratings and strengthens market discipline. The new CRA regulations are reinforced by measures to reduce mechanistic reliance on ratings in all EU sectoral legislation (e.g. AIFMD, CRD IV package, EMIR, UCITS, Solvency II). These measures combined contribute to reducing pro-cyclicality.

- The reforms introduce cross-sectoral requirements for risk retention, due diligence and monitoring for investments in securitisation positions. These were introduced in CRD III and consequently extended in a consistent manner to Solvency II, AIFMD and UCITS. The provisions contribute to align the interests of originators and investors. The cross-sectoral approach reduces the scope for circumventing the requirements by shifting exposures to less regulated sectors. The resilience of the securitisation market has been further enhanced by the regulation of CRAs when rating structured finance products and greater transparency for securitisations.

The interactions between reforms and the resulting synergies are difficult to quantify. However, any such complementarities imply that the total benefits of the financial reforms taken together are likely to exceed the sum of the benefits of each individual reform.

5.5 COMPLEMENTARITIES THROUGH IMPROVED SUPERVISION AND ENFORCEMENT AND BETTER GOVERNANCE

The effectiveness of the financial reform agenda critically depends on the effective supervision and enforcement of the new rules. As discussed in section 4.6, the ESFS, and in particular the three European supervisory authorities (EBA, ESMA and EIOPA), are instrumental for ensuring consistent supervision and appropriate coordination among national supervisory authorities. The new supervisory framework is therefore a critical complement to all the EU reform measures taken.

In response to the gaps identified in the course of the financial crisis, the reforms are ensuring more appropriate supervision of all market participants (e.g. CRAs; AIFMs, auditors, MMFs), markets and infrastructures (e.g. CCPs, CSDs, other trading facilities) and instruments (e.g. OTC derivatives, structured products). The new comprehensive, internationally coordinated framework closes regulatory gaps and loopholes and reduces opportunities for regulatory arbitrage.

Also, the supervision of financial conglomerates has been strengthened through the first revision of the Financial Conglomerates Directive (FICOD I), which was

[9] See ZEW (2011), study for EP.

proposed in August 2010 and adopted in November 2011. FICOD I amends the sector-specific directives to enable supervisors to perform consolidated banking supervision and insurance group supervision at the level of the ultimate parent entity, even where that entity is a mixed financial holding company.[10] It is expected to enhance the effectiveness of supplementary supervision and, among other benefits, reinforce the risk management of financial conglomerates.

In addition, enforcement of rules has been strengthened by a new approach to sanctioning regimes. Efficient and sufficiently converged **sanctioning regimes** are the corollary to the new supervisory regime. Sanctions provide a deterrent and act as a catalyst to ensure that EU legislation is complied with. They can help ensure better enforcement of EU financial services rules. The assessment of the coherence, equivalence and actual use of sanctioning powers in the Member States by the Commission in 2009/10 revealed a significant degree of inconsistency and divergences across Member States. In its Communication "Reinforcing sanctioning regimes in the financial services sector" of December 2010, the Commission presented areas for potential improvement.[11] The new horizontal approach on sanctioning regimes aims to ensure minimum standards at European level to ensure effective, proportionate and deterrent sanctioning regimes. A sanctioning regime has been systematically introduced in EU legislative acts across the whole financial services spectrum (e.g. CRD, MiFID II, Solvency II, MAR/CSMAD, UCITS, CSDR) while taking sector-specific issues into account. Key elements of these minimum standards include: appropriate types of administrative sanctions, publication of sanctions, a sufficiently high level of administrative fines, the criteria for applying sanctions, and appropriate mechanisms supporting the effective application of sanctions.

Stricter rules, combined with improved supervision and enforcement, can only go some way in improving market behaviour and outcomes. The EU financial regulation agenda is therefore complemented with requirements to improve the internal risk management and governance of financial institutions. **Effective risk management and governance practices are essential to achieving and maintaining public trust and confidence in the financial system**.[12] The financial crisis has revealed significant weaknesses in the risk management and governance of financial institutions, which contributed to excessive risk-taking, failures and a loss of confidence in the financial system. In order to address these shortcomings, a horizontal approach has been taken to improve the corporate governance framework, aiming at ensuring cross-sectoral consistency and limiting the scope for regulatory arbitrage. To that end, similar provisions have been introduced in various pieces of legislation (e.g. CRD IV package, MiFID II, AIFMD, UCITS), covering amongst others remuneration policies, improved oversight of risks by boards and enhanced authority and independence of the risk management function.

[10] FICOD I also revises the rules for the identification of conglomerates, introduces a transparency requirement for the legal and operational structures of groups, and brings alternative investment fund managers within the scope of supplementary supervision in the same way as asset management companies. The revision also gives the ESAs powers to draft regulatory technical standards and the European Commission to adopt them.
[11] COM(2010) 716 final
[12] See BIS (2010).

The legislative proposal on non-financial reporting[13] presented by the Commission in 2013 and approved by the European Parliament in April 2014 after agreement between the co-legislators, complements these measures and will improve the quality of corporate governance reports. In addition, the upcoming review of the shareholder rights directive will further add to improved corporate governance by strengthening shareholder rights and long-term engagement (e.g. by improved transparency on remuneration and granting shareholders the right to vote on remuneration policies and the remuneration report) and by encouraging proper interaction between companies, their shareholders and other stakeholders. Taken together, these measures will significantly strengthen the risk management and governance of financial institutions across all sectors, thereby complementing the regulatory and supervisory framework.

[13] COM(2013) 207 final.

CHAPTER 6: THE POTENTIAL COSTS OF THE REFORMS

The broad scope and significance of the regulatory reform agenda raises questions about the costs arising from the reform initiatives, both as individual initiatives and in their combination. Given the inherent complexity and special nature of financial institutions and markets, as well as the fact that many costs are dynamic in nature, no quantitative model exists that can reliably, precisely and comprehensively estimate all such costs.

This chapter reviews the available evidence and draws from the economic literature to provide insights into some of the main areas of concern. There are necessarily limitations to what can be covered in this document. In particular, it is beyond the scope of this study to consider all costs and impacts arising to specific stakeholders, so the study takes a wider approach and covers the main themes at a general level. The chapter shows that while the reforms impose costs, these are often costs to financial intermediaries (and their shareholders and employees) that arise in the transition to a more stable financial system and are offset by wider societal benefits. The reform agenda has been mindful of minimising costs by allowing longer phasing-in and observation periods and adjusting rules where significant costs are anticipated.

6.1 COSTS TO FINANCIAL INTERMEDIARIES VERSUS WIDER SOCIETAL COSTS

When analysing the impact of regulation, it is important to distinguish "private" (i.e. stakeholder-specific) costs from the wider "societal" costs (i.e. costs for society as a whole). Whereas private costs cover the impact on financial intermediaries (and their shareholders and employees), societal costs are broader in scope and encompass a more general measure of total or aggregate welfare by incorporating the impact on all stakeholders in society, including customers (e.g. depositors, borrowers and consumers of financial services), creditors, and taxpayers (i.e. the public finances of governments).

Private costs to financial intermediaries may in fact not present a cost to the wider economy. Indeed, an increase in these costs may indicate a sign of the effectiveness of the reforms. For example, a number of reforms in the banking sector are aimed at reducing the implicit subsidy that too-big-to-fail banks enjoy given the expectation or market perception of the possibility of tax-payer bail-out. A reduction in the implicit subsidy will undoubtedly increase the funding cost of the affected banks, which is a private cost. But this cost is offset by tax-payer savings and wider financial stability benefits, as described in section 4.2.

Similarly, the reforms induce a re-pricing of risks which again creates costs, but these are matched by the benefits of avoiding excessive risk-taking due to underpriced risks in the market. For example, in the pre-crisis securitisation boom, the financial system was producing CDOs in increasing quantities simply because the private cost did not fully reflect the associated risks (and related societal cost). The underpricing of risks contributed towards the build-up of systemic risk which was not included (i.e. internalised) in the pricing of such CDO products. Had this been the case, banks would not have produced such large volumes of CDOs. More generally, the financial system grew and certain activities expanded in a way that would not have been

possible if risks had been properly priced in the market. A re-pricing of risks, even if it brings costs to certain market participants, can therefore not be considered a net cost to the economy as a whole because it is matched by societal benefits.

It follows that **costs should not be examined in isolation from benefits**. A number of studies only focus on the costs of regulation to the financial services industry and often measure these costs with respect to pre-crisis market conditions. However, this fails to appreciate that **pre-crisis conditions cannot serve as the relevant benchmark**, as the system was increasingly fragile, overleveraged and about to implode.

Since regulation serves society as a whole, regulators necessarily have to focus on wider societal costs and not on the impact on financial intermediaries (and their shareholders and employees). In particular, the costs of regulation that really matter are the wider costs that may arise if the regulations impede the ability of the financial system to fulfil its key economic functions (financial intermediation, payment services, risk transformation and insurance, as discussed in chapter 2) and if they detract from the overall objective of having a stable, responsible and efficient financial system.

This chapter presents estimates of the costs to financial intermediaries, but for the above reasons focuses it focuses on the wider societal impacts of the reforms. It argues that many of the costs incurred by financial intermediaries do not translate into societal costs and that, overall, the costs are expected to be outweighed by the benefits of the reforms. Also, even if financial intermediaries pass on some of the cost increase to their clients, governments can always avoid this by explicitly, directly and transparently subsidising certain activities or instruments, instead of indirectly subsidising excessively leveraged banks or other parts of the financial system.

This chapter also seeks to **argue against a number of frequently made claims**, which are not always fact-based and can be countered. Evidence shows that a larger and more profitable financial sector does not automatically lead to higher long-term growth (see Box 6.1.1). The crisis demonstrated that credit provision can be excessive and contribute to over-indebtedness and misallocation of resources. Sustainable economic growth over the long-term depends on a resilient and stable financial system that is able to fulfil efficiently its essential economic functions at all times. Substantial part of the pre-crisis balance sheet expansion was intra-financial sector business and a reflection of increased complexity, interconnectedness and asset inventories built up by the universal banks engaged in capital market activity. At the end of 2013, loans of euro area banks to households and non-financial corporations (NFCs) made up 31.4 % of their aggregate balance sheet. Large European banks expanded and leveraged up rapidly in the run-up to the crisis, including by effectively intermediating between US savers and US borrowers (see Shin (2012)). Therefore, scaling back of their international transaction-based banking activities, for example, must not in any way impede their ability to continue providing finance to the EU economy. Thus, **it is not appropriate to maintain that bank deleveraging can only be achieved at the expense of real economy lending** and reduced economic growth. See section 6.4.1 for a more detailed discussion.

A related claim is that higher capital and capital requirements imply less lending. This claim is not justified. On the contrary, **better capitalised banks with stronger**

balance sheet seem to have a greater ability to support the economy (see chart 6.4.7). However, raising capital can indeed be difficult and costly in the transition period to higher capital levels, especially for banks with a debt overhang and weak balance sheet. See section 6.4.2 for a more detailed discussion.

Finally, critics often defend the idea that liquidity generating activities, such as trading, are always beneficial. However, such activities are only beneficial up to a point. Whilst delivering private benefits to intermediaries engaged in such activities, it is not proven that more trading always implies societal benefits. The position-taking and speculation in some markets can even be harmful and produce destabilising effects. Much of the pre-crisis liquidity can, in fact, be considered 'artificial' and a reflection of rapidly expanding bank balance sheets that contributed to the boom-bust cycle. As such, the **pre-crisis liquidity conditions in the market are not the relevant benchmark**, as they characterised an over-leveraged system that ultimately collapsed. See section 6.5.2 for a more detailed discussion.

Box 6.1.1: The relationship between financial sector size and economic growth

The financial sector serves the economy by intermediating funds between savers and borrowers, providing payment services, and allowing effective management of risks. A resilient and stable financial sector is a pre-condition to fulfil these essential functions and to allow for sustainable economic growth. There is substantial empirical evidence on the positive relationship between financial development and long-term economic growth (e.g. Fisman et al (2007)). Among other things, financial deepening alleviates financing constraints at the company level and supports creative destruction (e.g. Brown et al (2009)).

However, there does not seem to be a uniformly positive effect on economic growth at all levels of financial intermediation. Several recent studies actually find that the positive relationship breaks down, once the financial sector has grown beyond a threshold in the range of 40-150% of GDP (see OECD (2014), BIS (2014), Cecchetti et al (2012), Arcand et al (2012)). Furthermore, OECD (2014) finds a causal link from more financial intermediation to lower GDP growth. BIS (2014) also identify a threshold of 95 % for the turnover ratio, expressed as the value of total shares traded to average market capitalisation.

OECD (2014) lists several possible channels to explain this negative association. Implicit or explicit public guarantees or oligopolistic competitive conditions in the financial sector can create rents, which can divert resources to financial activities away from the rest of the economy (see also Bolton et al (2012)). This could lead to inefficiently high lending by banks and borrowing by households. Excessively high financial-sector earnings could also attract highly-skilled individuals at the expense of other sectors, even though returns from their work at the whole economy level may be higher in other occupations. Many bank employees have strong science or engineering backgrounds. They are perfect candidates to support manufacturing, information technology or other high-tech start-ups of the kind that Europe needs (see also Cecchetti and Kharroubi (2012), Baumol (1990), Murphy, Shleifer and Vishny (1991), Philippon (2013)). An overly large financial sector may also be conducive to growth-reducing boom-and-bust cycles. Arcand et al (2012) advance the hypothesis that excessively large financial systems reduce economic growth because of the increased probability of a misallocation of resources, the increased probability of large economic crashes, 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. In addition, more finance may disproportionately benefit collateral-rich but low-productivity activities (such as construction), at the expense of high-productivity projects (especially in sectors with high R&D intensity) where future returns are uncertain and collateral is scarce.

These findings are compatible with empirical evidence showing that banking sector expansion exerts a positive influence on economic growth at earlier economic development stages. Whilst OECD (2014) suggests that it is the overall level of financial development rather than the debt structure that explains these economic outcomes, particularly in OECD countries, bank lending is associated with poorer economic performance than other forms of credit (see also BIS (2014)), with housing-related credit

having a particularly strong negative link with economic growth. Furthermore, Kaserer et al (2014) provide new evidence that increased capital market size positively impacts economic growth in Europe, especially as regards equity markets. Demirguc-Kunt et al (2013) conclude that banks provide different services to the economy than those provided by capital markets. Banks have a comparative advantage in financing standardised, shorter-term, lower-risk and well-collateralised transactions. As the economy develops, its sensitivity to the banking sector decreases, whilst its sensitivity to the capital markets increases. Overall, the study finds that deviations in the economy's actual financial structure from its estimated optimum are associated with a reduction in economic output.

6.2 TRANSITION TO A MORE STABLE, RESPONSIBLE AND EFFICIENT FINANCIAL SYSTEM

The transition to a more stable, responsible and efficient financial system requires adjustments, which inevitably impose costs: banks need to improve their capital and liquidity positions and enhance their risk management practices; insurers need to implement new solvency standards; retail financial intermediaries need to meet new consumer protection rules; large banking groups need to introduce more transparency and order in their legal and operational structures; and so on. These adjustments are intended and the associated costs to financial intermediaries are inevitable, although efforts have been taken to facilitate the transition.

It is important to differentiate potential short-term transition costs and one-off costs from the expected long-term effects of the rules. Moreover, costs that stem from current market conditions and the poor state of the EU economy cannot be used as a valid reason not to implement rules that would bring about social benefits in the form of a more stable financial system in the longer-term. As is further discussed below, **the ongoing difficulties in the market and wider economy cannot be attributed to the regulatory reforms**. Instead, they are directly related to the problems that built up before the crisis and the crisis' consequences (e.g. evaporation of trust in the market and related liquidity squeezes, weak bank balance sheets, high private and public debt levels, low interest rates, the recession and weak growth prospects).

Moreover, financial intermediaries do not just face pressure from regulation and current market conditions. The **need to adjust to a number of wider economic, societal and technological changes** may profoundly affect the financial intermediation business model. This includes, for example, demographic changes (population ageing) that may affect customer demands, technological developments that are predicted to change the world of retail financial services (mobile banking, big data, crowd-funding), or the growth of banks from China or other BRIC countries, which are increasingly competing in some of the international markets served by European banks.[14]

In other words, the many changes to come for financial intermediaries are more far-reaching and comprehensive than what may follow from the regulatory reforms. It would, therefore, be quite **disproportionate to attribute the main changes and adjustment costs solely to financial reform**. However, this is not always evident from current policy debates. Whilst one should not downplay the significance of the impact of the reform agenda on the financial sector, one needs to put it into

[14] For example, a recent study by EY discussed this and seven other big themes that are predicted to drive bank business models as far out as 2030, none of which directly relate to regulation. See EY (2013).

perspective. Also, where possible, efforts have been made to minimise costs (for financial intermediaries and the wider economy), particularly through measures to reduce frictions and costs in the transition to a more stable, responsible and efficient financial system.

- **Longer phasing-in periods** have been granted in the transition phase to minimise costs and potential disruptions during the transition (although the market itself often require tighter standards ahead of regulatory deadlines).

- Where significant adverse effects were anticipated, the **rules have been adjusted** (e.g. trade finance in the CRD IV package, long-term guarantee package in Solvency II) or **exemptions have been applied** (e.g. pension funds and non-financial corporates in EMIR, SME growth markets established in CSDR).

- Where rules entered uncharted waters, **observation periods** have been applied (e.g. leverage ratio, liquidity ratio).

- **Review clauses** have been introduced in all major pieces of legislation (see annex 3) to allow adjustments where deemed necessary.

In addition, costs for financial intermediaries have been further lightened by:

- Developing a **common European approach** to financial reforms in response to diverging national initiatives, **with a single rulebook** to avoid multiple and overlapping requirements especially for cross-border business and unlevel playing field concerns; and, for the same reason,

- Striving for **international regulatory convergence** both in terms of high-level commitments and detailed implementation (see also section 7.9).

6.3 ASSESSING COSTS TO FINANCIAL INTERMEDIARIES

The financial regulation agenda has a significant impact on financial intermediaries. The reforms require adjustments in the way they conduct business, which triggers both one-off costs to adjust to the new requirements and recurrent costs of complying with the new standards on capital, liquidity, risk management, disclosure, and so on. Although some of these costs seem large in absolute amounts, they should be viewed against the size of the financial system. Moreover, the level of costs to meet regulatory requirements appears to be far less than the costs incurred by industry as a result of fines and redress costs related to market manipulation and other past wrong-doings (see Box 6.3.1).

Box 6.3.1: **Redress costs for past wrong-doings exceed regulatory compliance costs**

Post-crisis redress costs and associated fines represent one of the biggest, if not the biggest private cost that the industry is currently facing. Pre-crisis misconduct has resulted in increasing amounts of actual and potential redress costs and settlement payments made by financial intermediaries, substantially affecting balance sheet provisions and profitability. In October 2013, 40 % of respondents to an EBA

bank survey had already paid out amounts in excess of EUR 100m, whilst 16 % had paid out amounts in excess of EUR 1 billion[15].

According to KBW (2013), this has cost the global investment banks some EUR 33 billion since 2012, and possible civil redress in the three cases of LIBOR/EURIBOR, foreign exchange market manipulation and the US Federal Housing Finance Agency (FHFA) could cost them another EUR 73 billion over the next decade. See section 4.7.1 for a description of some of these cases. Hence, when looking at the pre-crisis return on equity in the financial sector, one has to adjust the pre-crisis profit figures by these redress costs and fines as a minimum, let alone the legacy losses on toxic assets and non-performing loans[16]. An alternative way would be to deduct these costs when assessing banks' current profitability. Table 6.1 below provides a non-exhaustive[17] overview of estimates for selected EU banks.

Table 6.1: **Past fines and estimated future redress costs at selected EU banks**

Regulator fines (€bn)	Deutsche	Barclays	BNPP	SocGen	HSBC	RBS
LIBOR/EURIBOR (main regulators)	0.4	0.4				0.5
LIBOR/EURIBOR (EC)	0.7			0.4	*pending*	0.4
Estimated civil redress (€bn)						
US FHFA	1.3	0.5		0.2	0.6	2.8
LIBOR/EURIBOR	2.6	3.2	2.2	0.7	0.8	3.0
FX market manipulation	3.0	2.0	0.5	0.3	1.4	1.1
Total redress and fines (€bn)	7.9	6.0	2.6	1.6	2.8	7.7
Provisions 2013-2015 (€bn)						
Redress costs and legal reserves	4.3	6.3			4.3	8.7

Note: Barclays avoided a EUR 690m fine in the LIBOR/EURIBOR case due to a leniency programme.
Source: KBW (2013), JPMorgan, Commission Services

The Commission Services' impact assessments on the individual legislative measures contain an assessment of the cost implications for financial intermediaries, along with the potential implications for the EU economy. Without unduly repeating the results, in order to give an illustration, the following lists estimates of compliance cost resulting from some of the main legislative measures in the area of financial markets:

- ***European Markets Infrastructure Regulation (EMIR)[18]***

  ESMA estimated that the costs of establishing new trade repositories and of upgrading existing ones would be in the range of EUR 9m to EUR 15m for one-off investments and EUR 2.2m to EUR 6m in recurrent costs. These costs include connection costs and fees to trade repositories, as well as the costs of hiring additional staff to handle the reporting process. This cost impact is expected to be

[15] Joint Committee report of the European supervisory authorities on risks and vulnerabilities in the EU financial system, March 2014

[16] Moreover, the taxable portion of such litigation costs represents a direct social cost on top of the harm that was subject to the litigation itself, where such litigation costs are tax deductible. Fines should have an element of punishment and a deterrent character, which is undermined by tax deductibility. Hence, tax deductibility of cartel fines imposed by the Commission is considered contrary to EU law. But even if fines themselves may not be tax deductible, legal fees most certainly are.

[17] Notably, the pending regulatory investigation in foreign exchange manipulation is not included. Analysts estimate that Deutsche Bank, UBS, RBS, Barclays and HSBC will together have to set aside EUR 8.5 billion to EUR 10.6 billion for litigation costs (including fines and penalties) in 2014 and 2015, in addition to the EUR 16.4 billion already provisioned up to the end of 2013.

[18] See impact assessment, SEC(2010) 1058/2

mitigated significantly, especially for smaller market participants, through delegation of the reporting to their counterparties – in most cases, the bigger institutions with whom they usually enter into OTC derivative contracts. Where these bigger institutions already voluntarily report their contracts, the marginal cost of reporting on behalf of their counterparties would be close to zero.

The costs of CCP clearing include fees, margin payments and costs linked to the segregation of clients' accounts. As part of its regulatory technical standards, ESMA estimated the additional initial margin requirement to be in the range of EUR 6.3 billion to EUR 8.3 billion, implying one-off costs in the range of EUR 252m to EUR 332m and recurrent costs in the range of EUR 441m to EUR 582m. At the same time, the expected cost of the additional collateral will depend on the final market structure of the CCP clearing industry and the magnitude of netting effects. Finally, the more rigorous bilateral clearing requirements could also lead to increased costs for market participants due to collateral funding.

- ***Markets in Financial Instruments Directive review (MiFID II)***[19]

The Commission estimated that the MiFID review would impose one-off compliance costs of between EUR 512m and EUR 732m, as well as recurrent costs iof between EUR 312m and EUR 586m, representing 0.10 % to 0.15 % and 0.06 % to 0.12 % of the total operating costs of the EU banking sector, respectively, as set out in the below table.

Consolidated overview of compliance costs (€ millions)	**TOTAL INCREMENTAL COSTS**			
	one-off		**on-going**	
	low	**high**	**low**	**high**
Market structures	10	31	9	21
New trading technologies ("automate trading")	1	1	1	1
Pre and post-trade transparency and data consolidation	38	41	12	18
Reinforce regulatory powers	8	13	10	20
Transparency to regulators	65	84	3	5
Commodity derivatives markets	2	3	4	4
Broaden the scope of regulation	46	74	9	15
Strengthening of conduct of business rules	281	351	196	369
Organizational requirements for investment firms	61	134	69	133
TOTAL MiFID REVIEW COSTS	**512**	**732**	**312**	**586**
Total operating costs of investment firms	500.000	500.000	500.000	500.000
Total MiFID review costs as a % of total operating costs	**0,10%**	**0,15%**	**0,06%**	**0,12%**

- ***Market Abuse Regulation and Directive (MAR/CSMAD)***[20]

The annual costs of implementing the package have been estimated at EUR 300m, in addition to EUR 320m of one-off costs in the first year to comply with the information obligations. At the same time, the MAR/CSMAD proposals are expected to generate net benefits of an estimated EUR 2.7 billion per year.

- ***Regulation on indices used as benchmarks in financial instruments and contracts***[21]

The estimated compliance costs for EU benchmark administrators consist of one-time costs of about EUR 49m (EUR 98 000 per administrator) and recurring costs

[19] See impact assessment, SEC(2011) 1226 final
[20] See impact assessment, SEC(2011) 1217 final
[21] See impact assessment, SWD(2013) 336 final

of about EUR 17m (EUR 34 000 per administrator per year). The estimated compliance costs for benchmark contributors consist of one-off costs of EUR 13m (EUR 26 000 per contributor) and recurring costs of about EUR 3.5m (EUR 7 000 per contributor per year). These costs only apply to contributors that are regulated entities, which are predominantly large sized financial institutions.

- ***Short-selling Regulation***[22]

One-off compliance costs related to notification of the short positions (including CDS) were estimated at approximately EUR 137m. They concern mainly the requirement for banks and investment firms to make one-off investments in information technology and information systems (IT/IS) development, training and compliance procedures. The recurrent compliance costs were estimated at approximately EUR 15.8m per year, including the annual costs to maintain IT/IS of EUR 13.7m and disclosure costs of short positions in shares of approximately EUR 2.1m per year. The one-off compliance costs to implement the sovereign bond position disclosure requirement were estimated at EUR 34.2m. The recurrent EU-wide compliance costs for disclosure of sovereign bond positions were estimated at EUR 5m per year, including the annual costs to maintain IT/IS of EUR 3.4m and the disclosure costs of sovereign bond positions, estimated at EUR 1.6m per year.

Furthermore, a number of industry reports have been prepared that seek to estimate the cumulative costs resulting from the combination of rules, especially in the banking sector. Box 6.3.2 below provides an illustration of such estimates compiled by KPMG. Annex 1 presents a summary of the main cost quantification studies in the banking sector and their results.

Box 6.3.2: **Examples of industry estimates of regulatory compliance costs**

KPMG has performed several bank surveys at national level to gauge the regulatory compliance costs for banks[23]. The methodology employed focuses on costs in the transition period. Also, it does not appear to distinguish between compliance costs that merely reflect a good business practice (with benefits to banks themselves) from those that represent true incremental costs that can be attributed to regulation alone. The estimates appear to include costs of regulations that banks would have had to bear anyway, e.g. as a result of lessons learned from the crisis and market pressure. The studies focus on costs to financial intermediaries and do not take into account wider societal costs and benefits.

1. A KPMG survey of 20 German banks representing 60 % of the total banking sector by assets revealed progress in improving financial stability through a reduction in the scale of high-risk business activities and through higher capital and liquidity reserves. Banks were asked to identify direct costs of regulation as part of 2010-2015 project budgets along with the related administration expenditure in fields such as risk management, IT and organisation, compliance, accounting and internal audit. Extrapolating the survey results to the entire banking sector, KPMG estimated regulatory costs to the German banking industry of EUR 8.6 billion (i.e. EUR 1.4 billion p.a.).

Overall, banks estimated the negative impact on their return on equity (ROE) to be 2.4 percentage points, with the capital and liquidity requirements of Basel III playing the most prominent role. Based on the average ROE figure of 7.1 % in the 2010-2012 period, KPMG estimated the full cost of regulation at EUR 8.4 billion p.a. (not including the German bank levy). At the same time, the estimates made by respondents varied greatly, depending on the size and business model of banks surveyed. The estimates by smaller credit institutions were much more moderate and hardly any influence was expected by those with a conservative business model. This underlines the point that

[22] See impact assessment, SWD(2012) 198 final
[23] See KPMG (2013, 2014).

regulatory reform is achieving its intended objectives by reducing the riskiness of the most risky banks, with a corresponding decrease in their ROE, as the risk-return trade-off would predict.

2. Local banks in the Netherlands and Belgium identified the CRD IV package, Financial Transaction Tax, bail-in debt and the pre-funding of deposit guarantee schemes as the four most significant regulations likely to have the greatest impact on banks. Quantitative analysis of the impact of these four regulations on banks' capital, leverage and liquidity ratios, and the impact on net income, profitability and cost-income ratios also assessed the extent to which banks could mitigate the impact of these regulations by taking management actions, such as reducing costs, re-pricing loans, issuing new capital, retaining profits by not paying dividends, changing the structure of assets (holding more high quality liquid assets) and liabilities (raising long-term wholesale funding), and reducing the size of their balance sheets. KPMG conclude that banks could not both meet all the minimum regulatory requirements and achieve an 8 percent return on equity by cost reductions alone. In the central scenario, this would require the following set of management actions:

- A 9 percent reduction in the size of the balance sheet;
- An increase in the price of loans by 80–90 basis points;
- No payment of dividends;
- A 5 percent reduction in costs; and
- Replacing the equivalent of 2.5 percent of total liabilities with long-term wholesale funding.

KPMG conclude that such a set of management actions would have implications for customers of the banks and for the financing of the wider economy, in particular through less and more expensive credit and the provision of fewer risk management products and services.

Even though these costs are an important element of any impact assessment, private costs on specific financial intermediaries should not be the main metric from a public policy perspective. As explained above, what really matters is whether the reform delivers net societal benefits and results in a more stable, responsible and efficient financial system as a whole. The direct (compliance) costs are typically concentrated on a few (the financial industry) and are comparatively easy to quantify, whereas most of the benefits are dispersed (e.g. taxpayers, consumers of financial services) and are often less tangible and more difficult to quantify. This often tilts the balance in the current policy debate.

Estimates of private costs of financial reforms require careful interpretation, as there is a risk that such costs may be overemphasised and overestimated. First, many of the costs are one-off transition costs, which are amortised over many years and which should be distinguished from recurring costs that financial intermediaries would incur on a regular basis to meet the stricter regulatory requirements. As noted above, the transition to the new system clearly presents disruptions and adjustment challenges, especially given current market conditions, which is why longer phasing-in periods have been granted to reduce the burden on industry.

Second, many compliance requirements (e.g. investments in better data processing and risk management systems) also provide private benefits to the management of financial institutions by giving them a more detailed understanding of their own positions and risks and allowing greater access to funding sources as a result of the greater transparency offered to potential investors. Thus, **costs are often attributed to regulation when instead they are just reinstating good business practice**.

Identifying the true incremental impact of regulation on financial intermediaries is challenging. For example, banks decide on their target capital and liquidity levels based on a number of factors, and not just regulatory requirements. Other factors include their own economic risk models and the demands of rating agencies,

counterparties and financial markets. Since the start of the crisis, banks have adjusted their own economic risk models to reflect substantially higher risk perceptions. Rating agencies have become more conservative and now demand higher safety margins if banks are to maintain their credit rating. Finally, counterparties, financial markets and customers are more risk-aware (and risk averse) and themselves demand higher capital and liquidity or collateral to back up their exposures. Therefore, **any observed increase in capital and liquidity levels since the start of the crisis cannot solely be attributed to regulatory changes**. Doing so would risk unfairly attributing costs to regulatory changes that would have been incurred anyway.

The required adjustments can increase costs or reduce revenues for financial intermediaries, thereby reducing profits. However, as noted above, reduced profitability can also reflect reduced riskiness and the reduction of inappropriate and distortionary implicit subsidies.

Higher costs to financial intermediaries can be passed on to customers of the financial services and products provided, e.g. in the form of higher prices or restricted supply. However, **the cost pass-through (and hence the transmission of the financial intermediary costs to the wider economy) is far from straightforward**. It depends on the general macroeconomic environment and the competitive conditions in the market. It will also depend on the intermediaries' own actions in response to the increase in costs. Below is a selection of possible actions, using banks and other credit providers as an example, but similar possibilities would apply to other intermediaries[24]. The below list of potential responses suggests that there are ways to adapt without damaging customer interests:

- ***Cutting costs***

  The most obvious way to offset the cumulative impact of regulatory reforms would be to cut operational costs elsewhere. This could include greater efficiency of processes and data management through investment in IT systems; branch closure and staff reductions; simplified legal entity and operating structures; outsourcing and specialisation;[25] and reductions in salaries and bonus payments.[26]

- ***Lowering returns to shareholders***

  Since the regulatory reforms aim to make banks more resilient and safer, investors should be willing to accept a lower return as long as the risk-return trade-off has not deteriorated. Indeed, a number of industry reports are highlighting an emerging downward trend in bank equity costs, often referring to a new equilibrium range of 8-10 %, because of the combined impact of reduced bank

[24] See Elliot et al. (2012).

[25] On average, large euro area banks' cost-to-income ratios remain elevated compared with their pre-crisis levels, and even showed an increase between 2010 and 2012. However, for the euro banking sector as a whole, the median cost-to-income ratio period 2008-2012 declined from 70 % to 62 %. During 2012, euro area banks' cost-to-income ratios remained stable, on average, as banks' cost-cutting efforts were insufficient to offset lower revenues. See ECB (2013) for more details.

[26] Bonuses in the banking industry typically make up more than a substantial portion of an employee's pay, sometimes more than 75 percent of the total (as fixed salary can be relatively low). See SEC(2010) 671.

asset risk and reduced leverage[27]. Historically, UK evidence shows that the average ROE of UK banks was 7.0 % p.a. in the period 1920-1970 and increased to 20.4 % p.a. in the period 1970-2007, with significantly greater volatility (i.e. risk) (6.9 % vs. 2 %, respectively)[28]. This suggests that reduced shareholder profitability to more sustainable levels is not abnormal from a historical perspective and that a reduced profitability need not be a concern when analysed in a risk-return framework.

- ***Adjusting product supply***

Banks may respond to higher costs by restricting products and services supplied. This may not necessarily result in a societal cost. For example, banks may choose to eliminate overly complex (and hence costly) products and services. They may also tighten their credit standards or simply charge more for their loans or other products. To the extent that the product mix was overly complex prior to the crisis, and credit risk was underpriced and credit standards too lax, this change should not be interpreted as a cost to the economy. Rather, the pre-crisis credit growth and the proliferation in product supply cannot be a relevant benchmark.

From a public policy point of view, regulatory impacts on financial intermediaries are of relevance to the extent that the reforms impede their ability to perform their key economic functions and **serve the economy in a sustainable and responsible manner**. Therefore, the following sections review the financial regulation agenda with respect to its potential adverse social consequences on:[29]

- Bank lending to the economy (section 6.4);
- The provision of other (non-bank) finance to the economy (i.e. impact on other intermediation channels) (section 6.5); and
- The provision of insurance and hedging in derivatives markets (section 6.6).

6.4 IMPACT ON BANK LENDING

It is often argued that regulation has gone too far and that the overall package of reforms is having a major adverse impact on the provision of finance to the economy, with adverse consequences on growth and employment. These concerns have been raised in particular in the context of banking sector reforms and their impact on flow of bank credit to the economy, in particular to SMEs which are particularly dependent on bank finance.

The first part of this section reports on the ongoing bank deleveraging and the changes in bank lending since the onset of the crisis and shows that **regulatory reform has**

[27] See for example PwC (2013).
[28] See Alessandri and Haldane (2009).
[29] The discussion focuses on the impact of the rules on those key economic functions for which the main negative impacts have been noted in the current policy debate. The discussion therefore does not cover the impact on the payment function nor on the function of "pricing of risks/creation of markets" (although, broadly speaking, the "creation of markets" is discussed in the context of the impact of rules on hedging through derivatives markets).

not been the only, nor indeed the main driver of bank deleveraging. The remainder of the section then examines the potential impact of different rules on bank lending, focusing on:

- Higher capital requirements as per CRD IV package;
- Liquidity requirements as per CRD IV package;
- Bail-in provisions and depositor preference as per BRRD;
- The interplay of different rules, in particular CRD IV package, BRRD and Solvency II.

6.4.1 Bank deleveraging and reduced credit supply

Since the onset of the crisis, the EU banking sector has started a process of deleveraging and downsizing its balance sheets. From a microprudential perspective, this is clearly desirable in order to enhance the resilience and stability of the banking sector. However, from a macroprudential perspective and as emphasised by those arguing against stricter microprudential requirements, the collective deleveraging process may tighten credit conditions, thereby reinforcing the recession or hindering economic recovery. **The collective bank deleveraging process that has occurred in Europe has to a large extent been driven by changes in bank strategies and de-risking and by the difficulties for banks to obtain funding in the market, and not so much by regulation.** It is worth bearing in mind that a disorderly deleveraging process has also been avoided through ongoing state aid and central bank support.

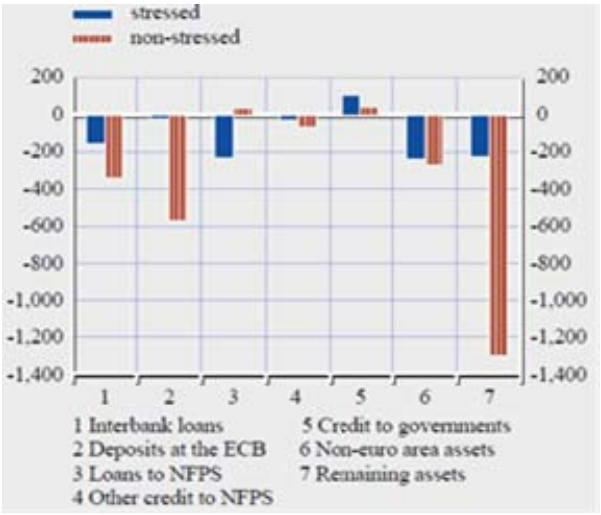
Irrespective of the underlying reasons, the more important point is that **deleveraging does not have to involve reduced flows of lending to the economy**. 'Good' deleveraging entails banks cleaning up their balance sheets by writing down the troubled assets that were accumulated before the crisis and reducing excessive interconnectedness and complexity. If the size of banks' balance sheets shrinks because losses are recognised and accounting values are adjusted downwards, this adjustment may better support the economy from a medium-term perspective. Not recognising the losses from non-performing assets may actually prolong the period of stagnation and give rise to debt overhang problems and the ever-greening of bad loans.[30] Widespread forbearance poses the risk that banks will devote scarce resources for lending to unhealthy corporates, crowding out lending to healthier and more productive firms. Also, when a universal bank with extensive investment and wholesale banking activities decides to de-risk away from market activities, the balance sheet will shrink. But again, the impact on lending may be limited, and the shrinking of the balance sheet may deliver de-risking benefits.

A number of **policy actions have been taken to ensure that mainly 'good' deleveraging takes place**. For example, the new risk-based capital framework (the CRD IV package) provides for higher capital charges against market risk and trading book exposures, which gives incentives to focus deleveraging on these more risky assets that contributed to the build-up of vulnerabilities in banks' balance sheets prior

[30] Japan is usually referred to as an example of the negative consequences of forbearance. See Caballero et al (2008).

to the crisis. Also, the ECB and other central bank liquidity operations performed since the crisis alleviated pressures on bank funding and helped banks to continue granting credit to the economy. Another example is the EBA recapitalisation exercise in 2012 which required banks to form a capital buffer to sustain systemic risk arising from the sovereign debt crisis and which provided detailed guidance to prevent banks from simply curtailing lending. As a final example, the Vienna 2.0 initiative seeks to limit the impact of deleveraging in Central, Eastern and South Eastern Europe where EU cross-border banks may otherwise be induced to withdraw or cut back lending in the region.

Chart 6.4.1: **Bank deleveraging, changes in assets of euro area MFIs since May 2012**



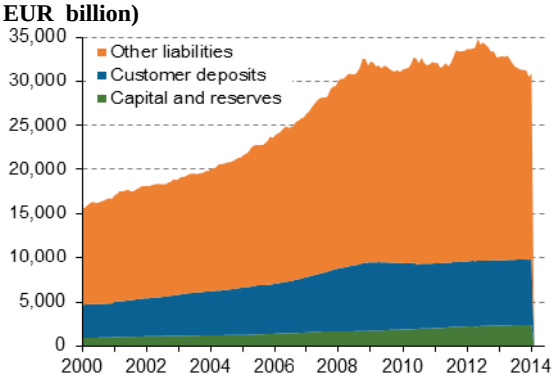
Source: ECB Financial Stability Review, 2013

Notes: NFPS refers to non-financial private sector. Monetary financial institutions (MFIs) are split between stressed and non-stressed countries.

As analysed in the ECB's Financial Stability report of November 2013, the total assets of monetary financial institutions located in the euro area have fallen by 10 % (EUR 3.5 trillion) on aggregate since May 2012 (chart 6.4.1). Only a relatively small part of this can be accounted for by reductions in loans to the real economy. Indeed, while such loans declined significantly in the stressed countries of the euro area, banks in non-stressed countries recorded an increase in loans to the economy. The largest driver in the balance sheet decline is accounted for by 'remaining assets', which mainly reflects a fall in the market value of derivatives. Banks also reduced their deposits with the Eurosystem (which reflects repayments of funds obtained from ECB long-term refinancing operations), interbank loans and non-euro area assets (which, of course, may include loans to the real economy).

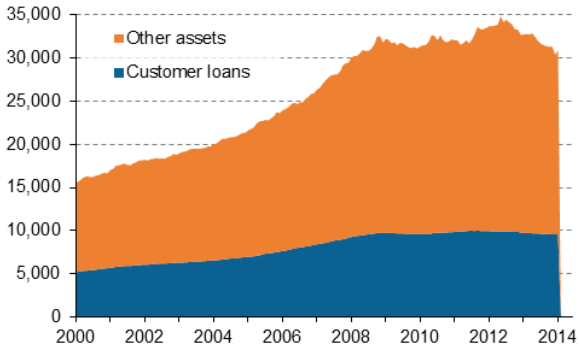
Prior to the crisis, aggregate bank balance sheets in Europe grew more rapidly than customer deposits in banks (on the liabilities side) or customer loans (on the asset side), as is shown in charts 6.4.2 and 6.4.3. As noted above, part of this balance sheet expansion can be attributed to increased intra-financial business and the building up of asset inventories by banks in relation to their trading activities. At the end of 2013, **loans of euro area monetary financial institutions (MFIs) to households and non-financial corporations made up only 31.4 % of their aggregate balance sheet**.

Chart 6.4.2: **Evolution of liabilities of MFIs (euro area, EUR billion)**



Source: ECB data.

Chart 6.4.3: **Evolution of assets of MFIs (euro area, EUR billion)**

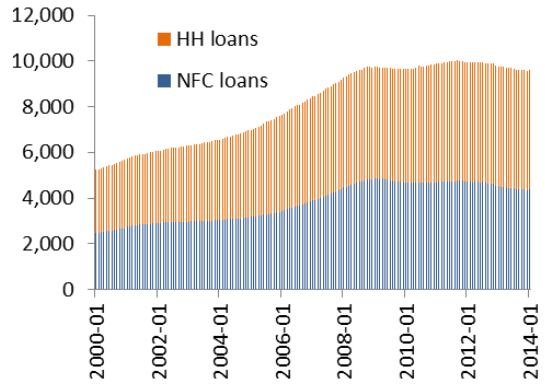


Notes: Customer loans include all loans to households and non-financial corporations.
Source: ECB data.

Thus, **there is no one-to-one relationship between changes in the size of banks' balance sheets and the provision of loans to the economy**, let alone sustainable economic growth. Put differently, balance sheet reductions and deleveraging can be achieved without reducing real economy lending – for example through reductions in intra-financial system exposures and by cutting lengthy intermediation chains.

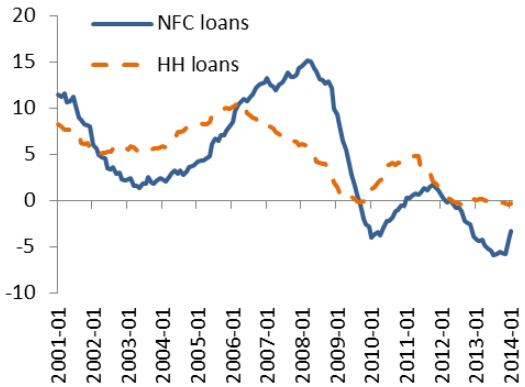
This is not to say that the crisis did not put a break on the aggregate credit flows to the economy. Charts 6.4.4 and 6.4.5 show the development of loans to households and non-financial corporates of MFIs in the euro area, both in terms of the level and the percentage change on the previous year. With the onset of the crisis, the growth in bank loans observed prior to the crisis stopped markedly, with a particularly sharp reversal in the trend observed for lending to non-financial corporations.

Chart 6.4.4: **Loans of MFIs to non-financial private sector (euro area, EUR billion)**



Notes: Shows stock of loans of euro area MFIs to households (HH) and non-financial corporations (NFC).
Source: ECB data.

Chart 6.4.5: **Loans of MFIs to non-financial private sector (euro area, % change on previous year)**



Notes: Shows percentage change in loans compared to previous year.
Source: ECB data.

The change in aggregate bank credit patterns partly reflects corrections of pre-crisis excesses. As explained in chapters 3 and 4, prior to the crisis, banks were operating with levels of capital and liquidity resources that were insufficient to absorb solvency and liquidity shocks. There was a general mispricing of risks in the market. Credit seemed abundant, but this abundance turned out to be unsustainable, and it contributed to the crisis and ultimately resulted in banks and other parts of the

financial system not being able to carry out their critical economic functions. This is what really constrained credit intermediation and growth, not regulation. Therefore, pre-crisis credit provision cannot serve as the relevant benchmark, since credit at that time was often excessive and built on a system that was unsustainable and which ultimately collapsed.

The lack of credit noted since the onset of the crisis, especially in the stressed economies, reflects the interplay between:

- **Constrained credit supply**, because bank balance sheets are still weak, suffering from excessive leverage (debt overhang), legacy assets and high levels of non-performing loans (see charts 3.3.5 in chapter 3), and because raising significant amounts of bank equity in primary markets (rather than through bank profit retention) can be difficult under the current circumstances; and

- **Weak credit demand**, which stems from excessive indebtedness of firms[31] and households (see charts 3.3.3 and 3.3.4), as well as from generally weak economic conditions and growth expectations.

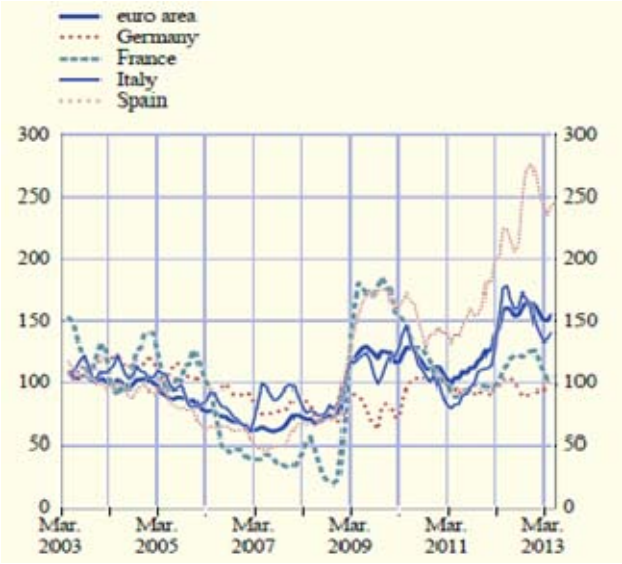
While banks have tightened credit conditions since the start of the crisis (with some improvements recently), reductions in credit have also been significantly driven by lower demand. **Europe's economy is highly indebted** (see chapter 3.3). Public and private sector debt is high and, in many cases, excessively high and unsustainable.

Credit demand is also held back because of weak economic activity, low investment, borrowers' risk and persistently high levels of economic uncertainty. Recent ECB bank lending surveys all suggest that these demand factors significantly weigh on credit.

There is **no general credit shortage in Europe** (also due to large-scale public intervention and central bank liquidity support). In fact, nominal and real interest rates are extraordinarily low, and financing is very cheap in many parts of Europe. Nonetheless, there are some important areas of concern in credit supply: the first is **access to finance for SMEs**, which tend to be particularly dependent on bank finance and less able to tap alternative funding sources (and which also tend to face higher lending rates, see chart 6.4.6). Consumers, and in particular more vulnerable ones, face similar problem of access to credit. In short-term and low value lending, the financial institutions, which do not have the status of credit institutions and thus are not subject to prudential regulation, often fill up the gap of credit supply. However, this usually implies a higher cost of lending and may also result in consumers potentially being exposed to unfair commercial practices. Much of the underlying problem in SME finance is asymmetric information where potential providers of finance find it difficult to assess the quality of the borrower and where acquiring such information is costly.

[31] Although not part of the financial regulation agenda, it should be noted that in order to address the corporate debt overhang problem the European Commission has issued a Recommendation for a new approach to business failure and insolvency, setting out best practice principles to enable the early restructuring of viable enterprises and to allow bankrupt entrepreneurs to have a second chance (C(2014) 1500).

Chart 6.4.6: **Spread between lending rates on small and large loans in the euro area (bps, 3-month moving averages)**



Source: ECB
Note: small loans are below EUR 1m, large – above.

The second area of concern is that **costs and access to finance differs significantly across the EU** and within the euro area in particular (chart 6.4.5). This reflects the ongoing challenges of adverse feedback loops between the banking sector, sovereign debt and the real economy in the stressed countries of the euro area. While sovereign debt problems have eased somewhat, significant challenges remain.

In the stressed countries, **weak banks with thin buffers and relatively high funding costs have been exacerbating the problems in the real economy** by tightening credit conditions, rationing credit and increasing interest rates on new loans (see chart 3.3.6 in chapter 3). At the same time, weaknesses in the real economy have exacerbated the problems of weak banks. The corporate sector (and in some countries the household sector) is heavily indebted, and this high leverage has interacted with weak profitability to create debt-servicing difficulties. This, in turn, has led to an increase in non-performing loans, worsening the assets on bank balance sheets. Banks with weak balance sheets will be less able and willing to recognise losses and so will become more likely to forbear on loans.[32] Widespread forbearance poses the risk that banks will devote scarce resources to unhealthy corporates ('zombie' firm lending), crowding out lending to healthier and more productive firms.

Breaking this vicious feedback loop **requires tackling both the weak bank balance sheets and the debt overhang in the economy**. The required orderly deleveraging will take time and presents significant transition challenges. As already noted above, this is why many rules are phased in over time and why continuous monitoring is required to address any unintended consequences, given the on-going adverse market conditions.

The above discussion illustrates that the observed **evolution of bank lending since the start of the crisis is not only (or even mainly) driven by regulation**. To say otherwise – as is often done by some in an attempt to lobby against tighter rules – is misleading. The next sections focus on the potential incremental impact that the regulatory reforms may have on bank funding costs and bank lending to the economy (i.e. the incremental impact over and above the other influencing factors).

[32] See analysis of the interaction between weak banks and weak corporates in IMF Global Financial Stability Report 2013.

6.4.2 The impact of higher capital requirements on credit supply

The banking sector routinely stresses the impact of EU regulatory reform initiatives on their ability to support the economy. In particular, it is argued that higher capital requirements will result in higher funding costs, because "equity is more costly than debt" as a funding source; as a result, this higher cost will either be passed on to clients, or banks will respond by lowering the quantity of credit provided.

Higher capital could particularly harm low margin business such as **global transaction banking**, which is of particular importance for trade. Eight of the world's top ten trade finance banks are categorised as globally systemically important financial institutions, requiring them to add a specific capital buffer on top of the general capital requirement (see section 4.2.4). The reforms recognise this and reduce the capital charge by calibrating the credit conversion factors for medium-to-low risk and medium risk trade finance products at 20 % and 50 %, respectively.

Also, specific concerns have been raised about the impact on bank lending to SMEs. As already noted in chapter 4.8, policy efforts are being taken to fill the funding gap for SMEs and ensure an appropriate flow of bank credit. As regards bank capital rules, the CRD IV package provides for specific treatments for bank exposures to SMEs, through lower risk weights and capital relief, to allow banks to increase lending to SMEs. Thus, rules have been adjusted to mitigate potential costs and to **strike the balance between strengthening prudential requirements to ensure financial stability and allowing the financial sector to provide a sustainable flow of finance to the economy**.

It is important to recall that bank capital levels were far too low in the run-up to the crisis (see section 4.2). EUR 1.5 trillion of EU state aid provided to banks (Box 3.4.1). Contingent taxpayer support, in terms of total parliamentary approved aid (as opposed to aid actually used) was higher and reached EUR 5.1 trillion, representing some 13.8 % of total EU banking assets. As such, the regulatory capital requirements and total loss absorption capacity demanded from banks under the new capital adequacy rules (and the bail-in provision of BRRD) are below the contingent public support provided to banks during the crisis.

A number of leading academics and policymakers have made the case for higher capital requirements.[33] Some have even called for capital requirements that are higher than the Basel III requirements implemented in the EU through the CRD IV package. They also argue against the claim that issuing more equity would lead to a higher cost of capital to banks and result in less lending to the economy, on the following grounds.

[33] See for example Admati et al (2013), Haldane (2011), Miles et al (2011), Tarullo (2008) and Vickers (2012). Similar points were made prior to the crisis by Harrison (2004) and Brealey (2006), who also conclude that there are no compelling arguments supporting the claim that bank equity has a social cost. Turner (2010) and Goodhart (2010) have argued that a significant increase in equity requirements is the most important step regulators should take at this point. See also a letter signed by 20 academics - "Healthy Banking System is the Goal, Not Profitable Banks," Financial Times, November 9, 2010. Among the signatories are J. Cochrane, E. Fama, C. Goodhart, S. Ross, and W. Sharpe. The text and links to other commentary are available at http://www.gsb.stanford.edu/news/research/admatiopen.html.

First, the required return on equity and on issued debt should decline when more equity is used to fund bank activities. In line with the Modigliani-Miller (MM) theorem,[34] **an increase in capital should lead to a decline in the equity risk premium**, because the same risk (assuming no change on the asset side of the balance sheet) is distributed over a larger equity base. Moreover, increased equity funding also lowers the required rate of return for holders of debt instruments. Under the MM theorem, the impact of higher equity on the banks' weighted overall cost of capital should, in principle, be zero, under certain conditions (i.e. in the absence of taxes, subsidies, etc.). Any argument or analysis that holds the required return on equity and debt fixed when evaluating changes in equity capital requirements is therefore flawed and goes against the basics of financial economics.

Second, capital is not set aside and thus is not unavailable for lending. Rather it is a source of funding, and the **funds can be freely used in financing any asset**. That is, higher capital requirements by themselves do not limit banks' activities. However, banks at risk of failure may indeed prefer to forego lending opportunities funded with equity, because equity issuance would improve the position of existing creditors and it may also be interpreted as a negative signal on the bank's health. Moreover, undercapitalised banks have incentives to "gamble for resurrection" by issuing even more debt and increasing their riskiness, because the equity holders face all the upside in the event that the bank recovers, whereas they have little to lose in the event that the bank fails because losses will primarily be borne by taxpayers in the absence of credible and effective resolution frameworks. Thus, debt overhang problems can only be tackled decisively if regulators require the recapitalisation of undercapitalised banks. Well-capitalised banks make better lending and investment decisions because they face less balance sheet constraints and thus have fewer incentives to take excessive risk.

Third, just because financial institutions choose to fund themselves primarily with debt, and have high levels of leverage, does not mean that this form of financing is optimal from a societal point of view. Instead, the observed funding decisions are partly driven by tax incentives and the implicit subsidy from public safety net coverage, as previously discussed. It is also related to frictions related to conflicts of interest between shareholders, debt holders and bank managers (i.e. the so-called agency costs). The annual return on equity has long been an industry-wide metric for the variable part of management compensation (i.e. bonus schemes). The easiest way to boost short-term return on equity is by increasing risk either through investment in riskier assets or by increasing bank leverage (see chapter 4.2).

Fourth, the return on equity is itself a performance metric that does not correct for the underlying riskiness of bank activities. Consequently, when leverage and hence risk is high, the required return on equity is high, whilst it is lower at lower leverage and risk levels. The risk-adjusted return on equity may be similar for both instances. Thus, the change in return on equity is commensurate with the change in the risk borne by

[34] According to the Modigliani-Miller (MM) theorem, which is one of the core principles of modern corporate finance, there is no such thing as an optimal level of equity (capital) because the value of a firm is independent of its capital structure. The value of a firm is determined by its investments and operational activities (i.e. asset side of the balance sheet), not the proportion of debt to equity (i.e. liability side of the balance sheet). Thus, the overall funding cost of a bank is also determined by the risks on the asset side of its balance sheet independently of the way it structures its liabilities.

equity holders and does not mean that shareholder value is lost or gained, because the risk-adjusted return on equity remains constant. There is no free lunch: shareholders cannot boost return on equity without taking additional risk (unless of course they can shift the downside risk to taxpayers, in which case it is privately optimal for managers and shareholders to leverage up).

Finally, there are theoretical models that show that short-term debt can sometimes play a disciplining role on bank managers. However, arguments against higher capital requirements based on this notion are very weak given the recent financial crisis experience. High leverage actually creates many frictions and systemic risk. In particular, it creates incentives for banks to take excessive risk. Any purported benefits produced by debt in disciplining managers must be measured against the frictions created by short-term debt. Moreover, the notion that debt plays a disciplining role is contradicted by the events of the last decade, which include both a dramatic increase in bank leverage (and risk) and interconnectedness through a short term debt surge, culminating in an unprecedented financial crisis. There is **little or no evidence that banks' debt holders provided any significant discipline** during this period. Also, the supposed discipline provided by debt generally relies on a fragile capital structure funded by short term debt that must be frequently renewed. Reduced fragility, which is a key goal of capital regulation, would be at odds with the functioning of this purported disciplining mechanism.

At the same time, it is true that the MM theorem only holds perfectly in the absence of frictions, such as taxes and implicit subsidies. The favourable fiscal treatment of debt over equity (interest is tax deductible, whereas dividends are not) allows banks to reap certain benefits from substituting equity for debt. Debt financing is hence subsidised through taxes. More importantly, implicit guarantees originating from public safety net coverage also favour debt over equity financing (see Box 4.2.2 for a quantification of the implicit subsidies). As explained, the reforms seek to reduce these subsidies. Miller (1995)[35] has also acknowledged that raising equity can be expensive, especially for smaller banks, if only due to the flotation and underwriting costs that are involved. The MM propositions are propositions that are concerned with *having equity*, as opposed to *raising equity*. Furthermore, stock offerings usually come at a discount, mainly due to the asymmetric information faced by the potential investors who do not know the real state of the bank as well as its management does.[36] In addition, there is a limit to the funds available for investment in bank stocks over a specific period of time, possibly requiring an even deeper discount to attract investors.

The post-crisis market conditions may make it particularly challenging for raising substantial amounts of bank equity, especially for the banks with weak balance sheets or subject to major litigation risks. Hence, higher capital requirements could raise the overall cost of banks' capital, especially in the transition phase to reach the higher standards. This, in turn, could have an impact on the lending rates to the extent that costs are passed through to clients. However, other regulatory initiatives incentivise banks to reduce the overall riskiness of their balance sheets, contributing to a general lowering of their cost of capital, so that the risk-adjusted return of both debt and

[35] See Miller (1995).

[36] Debt is exposed to this phenomenon to a much smaller extent, because it is insensitive to any variations in banks' future performance except for default, provided debt is held to maturity. The specific financial performance matters a lot to shareholders though.

equity investors may remain unchanged. Moreover, the new capital requirements are phased in over time, giving banks time to make the required adjustments and thereby limiting costs in the transition phase. **On balance, therefore**, **one should not expect any significant impact of higher capital requirements on banks' aggregate cost of funding and even less so on the lending rates**.

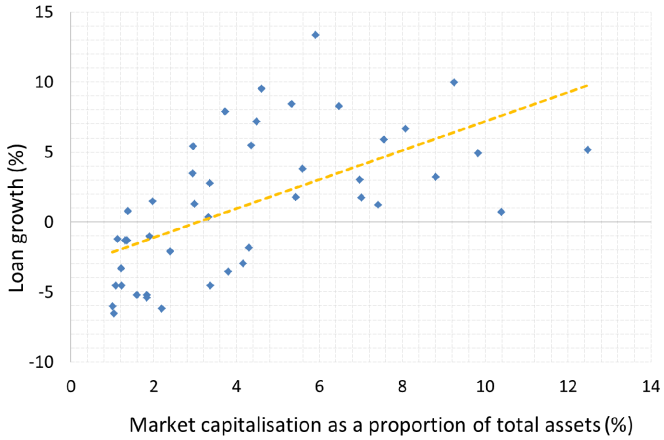
For example, Elliott (2009)[37] estimates that, all else being equal, the loan rate would have to increase by 77 bps to compensate for the higher costs stemming from a 4 percentage point rise in the capital level. Elliot concludes that constraints on competitive lending sources would render such lending rate increases unfeasible or at least very difficult, and considers that a mere 20 bps increase is more realistic, as a result of banks adjusting also other variables, namely the return on equity and debt, the credit spread, administrative costs and customer-related benefits (e.g. from cross-selling). The author also reiterates the fact that regulatory capital requirements are not the only determinants of the capital levels that banks choose to hold. Other factors include desired credit rating levels and banks' internal economic capital models.

The BIS (2014) has examined how banks are adjusting to the higher capital requirements of Basel III based on a sample of 94 large banks from advanced and emerging economies for the period end-2009 to end-2012. The dataset includes 35 European banks and all of the 29 institutions identified by the FSB as globally systemically important banks, covering 64 % of the assets of the top 1000 global banks as listed by *The Banker*. European banks achieved roughly a 2.5 percentage point increase in the regulatory capital ratio by: (i) reducing risk-weighted assets (contribution of 2 percentage points) and (ii) raising capital (contribution of some 0.5 percentage points). As for the latter, retained earnings account for some 58 % of the overall increase in capital.

Banks do not appear to have cut back sharply on asset or lending growth as a consequence of higher capital standards. Moreover, banks with high capital ratios or strong profitability at the start of the process showed above average growth, underlining the importance of solid bank balance sheets in support of real economy lending. In this context, there has been a pronounced shortfall in lending growth on the part of European banks, though European banks have accumulated other assets in the form of cash and securities. Some banks have cut back on their trading portfolios. These conclusions lend evidence to the view that any observed shortfall in lending is not so much the result of higher capital requirements, but rather due to other factors.

Chart 6.4.7: **Relationship between capitalisation and loan growth**

[37] See Elliott (2009).



Notes: The sample includes the largest 45 European banks and excludes banks that merged during the period. Loan growth is % change in stock of gross loans to customers during end 2011 and end 2012. Ratio of market capitalisation to total assets is based on consolidated data in December 2011.
Source: SNL Financial and Commission services calculations.

Chart 6.4.7 presents the correlation between bank capitalisation and loan growth for a sample of 45 large European banks. Bank capitalisation is measured by its market capitalisation, relative to total bank assets at the end of 2011.[38] Loan growth is measured by the percentage change in the loans on banks' balance sheets. The positive correlation between capitalisation and loan growth illustrates the point that the stronger the balance sheet of a bank is, the stronger is its ability to support the economy.

Buch and Prieto (2012) analyse the link between bank capital and bank loans in Germany during 1960-2010 and conclude that there is a **positive long-term relationship between capital and lending**. More specifically, a one percent increase in the level of bank capital is found to increase bank loans by about 0.22 percent.[39] Similar evidence has been found in other empirical studies,[40], where it appears that higher levels of bank capital are associated with higher lending and liquidity creation by large banks, bigger market shares and lower probabilities of default for banks, as well as higher bank values. However, an increase in regulatory capital requirements may be associated with small effects in terms of reduced lending, non-trivial transitional costs and a shift of lending from regulated to unregulated sectors.

The IMF (2012)[41] finds that **higher economic growth and less growth volatility is associated with higher capital and liquidity buffers** within banks. The effects of buffer variables are non-linear, showing the trade-off between economic growth and stability. But this trade-off becomes material only at very high capital levels: higher capital buffers up to a threshold of above 25 % are all positively associated with economic growth, and the relationship reverses only beyond that threshold.

All of the above empirical evidence suggests that **the main challenge banks face is not higher capital levels as such, but the transition** to move away from excessive leverage towards a more stable and safer banking system. The costs generated by the crisis present ample evidence for the need to move forward (with appropriate phasing-in and observations periods). As summarised in PwC (2013): *"There will be*

[38] The conclusion also holds with other specifications and is confirmed by other research.
[39] The authors find a negative response of bank loans to an increase in bank capital only at levels of the capital-to-asset ratio of 35 % (ratios far outside the range of values observed in the sample period or proposed in the current regulatory debates).
[40] See, for instance, Thakor, (2013). Further studies are listed in section 6.4.6 and annex 1.
[41] See IMF (2012) Global Financial Stability Report.

disruptions and adjustment costs, but concerns about economic viability under the additional capital load (including at product level) are unfounded – reduced leverage is bringing down the cost of bank equity and this trend will continue."

6.4.3 The impact of liquidity requirements

Mismanagement and mispricing of liquidity risk due to excessive leverage and severe asset liability mismatches was at the core of the financial crisis (section 4.2.2). Adequate asset-liability matching and stable funding is sound business practice, so it is difficult to object to the principles of liquidity regulation. However, various concerns about the costs of the Liquidity Coverage Ratio (LCR) and introduction of the Net Stable Funding Ratio (NSFR) have been raised:

- **Reduced bank profitability:** Requiring banks to hold more sizeable pools of liquid assets would reduce bank profitability (and hence their resilience to sustain solvency shocks).

- **Crowding-out of long-term illiquid assets:** Liquidity requirements may incentivise a shift to shorter maturities across all types of assets. This would also affect loans to corporates. While larger corporates can get funds from corporate bond markets or from mutual funds (including money market funds) and unregulated financial institutions, SMEs depend very much on bank lending.

- **Increased borrower spreads:** In times when the interbank market dries up and funding is difficult, banks might also respond to the liquidity requirements by trying to attract more deposits. When the rate that a bank has to offer to gather deposits is higher than the rate earned on liquid assets, the bank's marginal funding costs will increase. The higher costs may be passed through to the loan interest rate.

- **Reduced credit supply and the impact on interbank lending and bank maturity transformation:** Since it requires longer-term assets to be funded by stable funding sources, the NSFR will reduce incentives to engage in interbank market operations (and more generally short-term funding) and hence reduce the ability of banks to engage in maturity transformation of banks. There is a positive economic role of maturity transformation, as savers want near-instant access to a (significant) portion of their funds whilst on the other hand the vast part of economic projects has long maturity. However, at the same time, the crisis has revealed the risks of poor liquidity risk management and excessive maturity transformation, so there are considerable benefits of improved asset-liability maturity matching, as intended by the NSFR.

- **LCR might not work as a buffer:** LCR is criticised as a rigid rule, which cannot work as a buffer due to its assumptions that the trigger factors (e.g. deposit flight, ratings downgrade) remain constant during the entire stress period. In addition, the calibration is based on the increased volatility in the aftermath of the crisis, which may turn out to be excessive, should the volatility wane with the recovery.

- **Pool of eligible assets for the LCR is too restrictive:** There is criticism that the definition of eligible assets is too prescriptive and restrictive (and that the scope of

eligible assets for the LCR pool is narrower than the ECB eligible pool of assets). It is argued that some financial instruments supporting the financing of companies and individuals, like corporate bonds, covered bonds or asset-backed securities (ABS), are not sufficiently considered as eligible. While it is understandable that banks want to expand the pool to lower funding costs, there are also good reasons to limit the eligible assets. For example, it is well known that some securities can be highly illiquid and there is no market price on a continuous basis.

As explained in section 4.2.2, the liquidity regulation seeks to curtail inadequate asset-liability matching and excessive short term wholesale funding. The potential costs to banks arising from the rules need to be distinguished from the corresponding societal costs. EBA (2013) finds that **most studies overestimate the societal costs of the LCR requirement**, because the studies fail to take account of implicit subsidies and the fact that some of the increase in costs to banks represents foregone tax subsidies. The costs imposed on banks by the LCR partially reflect decreased societal costs (i.e. societal benefits). As noted in section 4.2.2, the NFSR remains under development and subject to an observation period.

Other things being equal, restrictions on banks to engage in maturity transformation are likely to limit their ability to turn short-term deposits into longer-term loans to the economy. However, **much of the pre-crisis liquidity can, in fact, be considered 'artificial'** and contributed to a boom-bust cycle. Market developments since the crisis were driven by evaporation of trust in the creditworthiness of counterparties and selected sovereigns, which dwarf any potential adverse effects of regulations.

There are means to create liquidity, such as financial engineering to overcome funding liquidity problems (which is likely to shift risks elsewhere) and central bank measures (e.g. relaxed eligibility rules on collateral), and replacement of absent private liquidity with public liquidity. This can help in the transition phase and address confidence issues, but it cannot solve liquidity problems that are driven by weak fundamentals and excessive leverage. Relaxing liquidity rules in the short-term may help, but at the cost of increased financial instability in the longer term.

In its recent impact assessment of the LCR,[42] the EBA (2013) shows that the LCR as specified is not likely to have a material detrimental impact on the stability and orderly functioning of financial markets or on the economy and the stability of the supply of bank lending. To a large extent, this can be explained by the fact that EU banks already show an average LCR of 115 per cent (i.e. exceeding the minimum requirement of 100 %). However, the potential impact **differs depending on the business model**[43]. EBA concludes that the calibration of the LCR as defined by BCBS is generally appropriate also across the EU. It should be noted that the BCBS **revised the calibration of the LCR** in January 2013 to avoid a potential shift from lending (loan assets that are illiquid) to more liquid assets (e.g. cash, central bank deposits). Also, among other things, the EU has sought to limit unintended

[42] The report follows a requirement in the CRD IV package, which tasks the EBA with advising on the impact of the LCR, on the business and risk profile of institutions established in the Union, on the stability of financial markets, on the economy and on the stability of the supply of bank lending

[43] Diversified business models tend to be more adapted to the LCR than specialized banks. The share of non-compliant banks is relatively high for auto and consumer credit banks (83 %), pass-through financing banks (53 %), and private banking (45 %). EBA (2013) proposed specific derogations for certain specialised business models under stringent and objective conditions.

consequences on trade finance by reducing the run-off rate for deposits related to this activity to 0-5 %. Moreover, the inflow rate for all trade finance receivables maturing within the 30-day reference period has been increased from 50 % to 100 %.

EBA (2013) estimates that **the aggregate long-term costs of the LCR are negligible and in the order of magnitude of 0.03 % of EU GDP**. The additional demand for high-quality assets spurred by the LCR is unlikely to have a material detrimental impact on the stability and orderly functioning of financial markets (see also sections 7.3 and 7.4). It is also **not likely to affect negatively either the economy or the supply of bank lending, including lending to SMEs**. As regards the latter, the data analysis shows evidence that banks with larger SME exposures do not necessarily have lower LCRs and banks that became compliant did not do so through a reduction in lending to SMEs. EBA (2013) finds that neither the data, nor case studies, nor the empirical literature suggest that the implementation of the LCR could lead to a disruption in the credit supply.[44]

Other studies have also considered both the costs and benefits liquidity requirements (see Annex 1 for a literature review). An IMF study by Elliot et al (2012) examines the effect of Basel III liquidity requirements on bank lending rates and reaches the conclusion that it is likely to be relatively small: **LCR increasing lending rates by 8bps in the long term and the NSFR by 10 bps**, with the combined effect amounting to about 14 bps, given some overlapping effects. The LCR was recalibrated in 2013, further reducing these cost impacts.

Consistent with the approach taken by the BCBS, the EU reform agenda is being mindful of potential adverse consequences of liquidity regulation, especially in light of on-going adverse market conditions. Careful calibration is warranted, and so are the phasing in and observation periods granted under the CRD IV package.

The Commission is required by 30 June 2014 to adopt a delegated act specifying the general liquid coverage requirements. When adopting that delegated act, the Commission must take into account the reports submitted by EBA, including the above mentioned impact assessment, the Basel III rules as well as EU specificities.

The CRD IV package provides for the phased-in implementation of the LCR and introduces a long observation period before any legislative proposal on the NFSR. Implementation of the LCR and the current international discussions on the definition of the NSFR seek to find the right balance between improving the resilience of the banking sector to liquidity shocks and avoiding excessive restrictions on maturity transformation that discourage long-term financing. Thus, the Commission delegated act on LCR and the final calibration of the NSFR will aim to not unduly restrict the provision of finance by banks. In addition, full advantage can be taken of the monitoring period in the CRD IV package to adjust and address potential unintended consequences of the new liquidity rules for long-term investment.

[44] It is relevant to point out that the baseline EBA data analysis assumes that any government and central bank unconventional liquidity support is not withdrawn. A separate analysis of the withdrawal of government support on the LCR has been included through.

6.4.4 The impact of bail-in provisions and depositor preference

As discussed in chapter 4.2.5, bank resolution and the bail-in tool have been developed in the BRRD to improve dealing with bank failures outside of formal bankruptcy process, to minimise the cost of bank failures and in particular to how losses are passed-on to taxpayers. At the same time, however, **the possibility of bail-in has an impact on bank funding costs**, as a result of the greater likelihood that creditors will suffer losses. Moreover, this is compounded by further changes that have been adopted in the BRRD to protect deposit claims vis-à-vis others, impinging on ordinary creditors. Together, the resulting cost increase on banks, if not compensated by a fall in other funding costs and if passed-through, could have repercussions on bank lending.

- **Removal of uncertainty**

On a first instance, it is important to bear in mind that uncertainty regarding the point at which EU Member States would support a bank played a role during the crisis. Such uncertainty worked to increase the cost of debt and provoke spike premiums of insurance against default at times of stress. The BRRD provides greater consistency and clarity and removes uncertainty from financial markets with regards to the behaviour of public authorities.

- **Costs to banks versus societal costs**

Bail-in is meant to curb the practice whereby creditors are rescued from facing losses incurred by a bank in case of failure, because external public resources are provided to save the bank (i.e. creditors are the ones usually bailed-out). In this regard, it is obvious to note that bail-in will necessarily imply a greater risk and cost for creditors and that they will try to pass on that cost to banks, by requiring higher returns for purchasing their debt issues. At the same time, such greater risk and cost for bank creditors is matched by the benefits for taxpayers from providing lower contingent support to them. Moreover, if as a result of acknowledging bail-in, creditors get to internalize the cost of banks risky choices, its provisions **will contribute to reduce risks *ex ante*** (i.e. will lead to more sustainable dynamics in banking) and lower the overall costs if resolution of a bank becomes necessary.

- **Bail-in builds on previous reforms to reinforce banks' balance sheets**

Wrapping up together with the previous points, the bail-in tool builds on previous reforms to reinforce banks' balance sheets and ensure the banking system as a whole remain a going concern. Hence, as a consequence of reforms to increase capital and loss absorbency; improve liquidity buffers and prevent excessive maturity transformation; and reduce pro-cyclicality and systemic risk (see chapter 4); the likelihood that creditors will face losses has diminished. Thus, the overall impact on creditors' risk and resulting costs because of the bail-in tool is ambiguous: it could lead to (i) a fall in the cost of funding, if banks' balance sheets are sufficiently reinforced to make the possibility of a bank failure very unlikely and limited in cost; or, alternatively, it could result in (ii) an increase in the cost of

funding, if the increased risk due to the possibility of loss absorption by debt offsets the reduced risk due to reinforced balance sheets.

- **Cost benefits from low deposit returns**

In addition to the above points, the BRRD has reinforced the claims of depositors with regards to other creditors. In deciding how to allocate their savings, households do not bear in mind the same considerations as wholesale financial market participants. The explicit guarantee present on deposits across the EU plus the expectation that governments will support depositors in case of bank failure has *de facto* become part of households' beliefs when planning how to save[45]. To reinforce such beliefs, the BRRD has raised the rank of deposits vis-à-vis other creditors. In particular, guaranteed deposits are now excluded from being bailed-in in case of resolution and general depositor preference has been affirmed with respect to senior unsecured debt. This rule further increases the likelihood that, upon a bank failure, creditors will be forced to take on losses. At the same time, banks benefit from households having such beliefs regarding deposits: the return households demand from their deposits is not on a par with the (previous) *pari passu* standing of deposits vis-à-vis senior unsecured debt. Thus, the overall impact of such reforms on the cost for the banking system is ambiguous: if households were to doubt on the safety of their savings, the banking system would be bankrupt. At the same time, the evidence presenting the minimum necessary to ensure that such doubts do not arise is scant or non-existent: depositor preference (and qualified exclusion) has been established to ensure such doubts never arise.

The above present the overall costs that can and will arise because of resolution, the bail-in tool in resolution and depositor preference. Nevertheless, it is important to bear in mind how financial market participants have interpreted the above change in the rules of the game.

As explained in box 4.2.5, according to the issuer credit rating methodology applicable to banks, a positive likelihood that a bank would receive future extraordinary support in a crisis from their sovereign may enhance their standalone credit profile, resulting in a 'government support uplift'. For a private-sector commercial bank, the likelihood of such government support is estimated by drawing on assessments of both the bank's systemic importance and the government's tendency to support private-sector commercial banks. For example, the introduction of bail-in in Denmark directly affected local banks' credit ratings, because the 'government support uplift' to their standalone credit profiles (arising from the expectation of State aid in a crisis) was reduced: some banks lost it altogether, whilst the largest Danish banks retained only one notch. This was estimated to have resulted in a 25 to 50 basis points increase in bank funding costs.

More recently, Standard & Poor's has announced a review of its European bank ratings by mid-2014 in response to the progressive implementation of bank resolution and creditor bail-in plans.[46] Any resulting near-term rating actions are likely to consist

[45] Moreover, the events surrounding the call for financial assistance by Cyprus, together with the response given by EU institutions, worked to reaffirm such beliefs.

[46] See Standard & Poor's (2014). Several EU countries have already anticipated the BRRD in their legislation.

of revisions to the 'support uplift' mentioned above. Medium-term rating actions would likely affirm or lower ratings by one to two notches. As mentioned in section 6.4.2, this has been an implicit government subsidy to funding costs of banks. If bail-in removes this subsidy, it will have merely removed a previously existing market distortion.

It is important to realise, as has been mentioned above, that the increase in senior unsecured debt funding costs could be countered by a fall in the cost of other instruments. This is the case with respect to the beneficial position that covered bonds encounter under bank resolution frameworks. Fitch has recently made public that these funding instruments are likely to benefit from an uplift of 1-2 notches above the banks' issuer default rating. The resulting adjustments would be implemented in parallel with any revisions to the 'support uplift'. Out of 129 programmes publicly rated by Fitch, 92 are expected to be eligible for such uplift, with 42 % benefitting from a two-notch uplift and 30 % from a one-notch uplift.[47]

In general, investors appear to be willing to invest in bail-in-able debt. These indications originate from markets in: (i) financial instruments with an embedded *ex ante* (i.e. contractual) possibility of being bailed-in, known as contingent convertible ("CoCo") capital instruments; as well as (ii) subordinated and senior unsecured debt, after authorities signalled the possibility of being subject to bail-in in case there is not enough equity to absorb losses. For in 2013, European banks issued some EUR 10 billion of CoCos – double the amount compared to 2012. Moreover, analysts expect[48] between EUR 30 billion and EUR 50 billion of CoCo issuance by European banks in 2014. Issuance has been supported by robust investor demand, because CoCos offer relatively high yields of up to in excess of 7 % on investment grade banks. For example, Santander raised EUR 1.5 billion with a coupon of 6.25 % and Danske raised EUR 750 million at 5.75 %. The latter coupon is the lowest issue price to date. The Nationwide Building Society became the first non-listed financial institution to issue a coco, with a £1 billion bond paying a coupon of 6.87 %[49]. Barclays estimated[50] that the European CoCo market could grow to as much as EUR 400 billion – similar in size to the current European bank subordinated debt market.

Nevertheless, according to the BIS (2013), so far the bulk of demand has come from retail investors and small private banks, with large institutional investors staying on the side-lines. This may be due to specific idiosyncratic features of CoCos, which differ by their loss absorption capacity (i.e. whether they convert into equity or directly absorb losses upon trigger) and by the triggers of conversion (i.e. book value, market metrics value or bank's supervisor's discretion). Some CoCos convert to equity once a specific core tier one capital threshold is triggered, whilst others simply write down investors' principal. This lack of standardisation has made them attractive to specific niche investors and they are yet to develop deeper pools of funding.

Investors are already familiar with **subordinated debt** that can be bailed in (or quasi bailed in, depending on the legislation present at the time of the action) through a

[47] However, the overall impact will be limited, since some 60 % of the covered bonds at stake already enjoy an AAA rating. See discussion in Natixis, Covered Bond Market Weekly 10, 12/03/2014.
[48] "Santander set to lead wave of coco sales", *Financial Times*, 5 March 2014.
[49] "UK's Nationwide poised to issue coco bond", *Financial Times*, 3 March 2014.
[50] "Barclays bond a key test for cocos market", *Financial Times*, 22 November 2012.

number of cases in the EU (e.g. Amagerbanken, Anglo Irish Banks, Banco CEISS, Banco Gallego, Banco Grupo Caja, Bank of Cyprus, BFA-Bankia, BMN, Catalunya Banc, Fjordbank Mors, Liberbank, NCG Banco, SNS Reaal). This did not prevent banks from issuing more than EUR 90 billion of subordinated debt in 2013 – a volume not seen since 2008 when more than EUR 122 billion was issued. The demand could be explained by the fact that the probability of default (PD) has come down (as a result of banks having strengthened their balance sheets), offsetting the increase in the loss given default (LGD) parameter of subordinated debt.

With regard to **senior unsecured debt** has traditionally been the mainstay funding instrument for banks in wholesale financial markets. Hence, it is critical that it retains its standing in investors' minds. The demand pool has included banks as well as institutional investors, such as insurers and pension funds. The latter have traditionally had mandates requiring a minimum investment grade rating, which represents a critical constraint for banks to keep tapping such demand. As pointed out by IMF (2013), investor demand for senior debt critically depends on whether the issuing banks maintain investment grade ratings. According to a 2013 investor survey by JPMorgan, **34 % of investors in European bank debt would reduce their investment** in senior unsecured debt if it became a bail-in instrument, while **63 % of them would maintain** it as is. Survey participants indicated that **the most important factor determining their decision would be whether the debt would still carry investor grade ratings**. Recent guidelines provided by rating agencies suggest that only issuers with high stand-alone ratings would have investment grade senior bail-in debt. If that is the case, the investor base for senior debt may shrink. Hitherto, more than 90 % of the senior unsecured debt issued by banks has been investment grade.

Finally, the Commission services performed analyses regarding the impact bail-in and bail-in with depositor preference on banks' costs and, in particular, to what extent the increase in the cost of funding for a particular debt instrument translates into an increase in the overall cost of funding for a bank and if it is fully absorbed by the decrease in the cost of funding for other instruments. According to the European Commission's BRRD impact assessment, some pass-through to lending rates could indeed take place. However, the overall effect was limited with clear lower and upper limits estimated at 5 to 15 basis points, respectively.

Building on the BRRD impact assessment and on further evidence regarding the funding structure of 13 European banks presented by Morgan Stanley, the Commission services further analysed the extent to which depositor preference made a difference with respect to the above conclusions. In particular, Commission services assumed that in case *pari passu* between senior debt and deposits was kept, depositors would become more selective after the crisis regarding their savings and raise questions on the risk and reward trade-offs. Moreover, some depositors would move their savings to other assets, given that they would no longer view deposits as safe as they previously believed. Accordingly, the Commission estimated the increase in return that depositors would require for maintaining their savings levels in deposits at 190 basis points. In terms of implications for the overall bank funding costs, this would translate into a cost increase equivalent of between 12 to 18 basis points.

6.4.5 The interaction effects between different rules

As with the benefits (where rules often work to reinforce each other to deliver the overall objectives, see chapter 5), the aggregate costs of the financial reforms will be different from the sum of the stand-alone impacts. In particular, concerns have been raised that the many different reforms taken together are overburdening banks (and other parts of the financial system) and reduce banks' ability to lend to the economy. These are important concerns that call for on-going review of the interaction between different rules. It is, however, of note that the interaction effects do not necessarily work to increase costs to banks and therefore do not necessarily imply adverse repercussions for bank lending that are bigger than those assessed if adding the stand-alone effects of the different rules. In fact, the opposite can be the case.

For example, focusing on the capital and liquidity requirements discussed above, these are necessary to discipline banks to hold sufficient safety margins with respect to both capital and liquidity. But the **combined costs are less than the sum of the individual requirements**. Higher capital requirements generally help to meet liquidity requirements, and vice versa. The instruments qualifying as capital under the CRD IV package have long maturities and therefore do not carry with them any NSFR liquidity requirements. Similarly, if banks improve their liquidity positions, e.g. by switching into assets that are safer and more liquid, this will often have the effect of helping to meet capital requirements, since these assets also carry lower risk-weightings for capital purposes.

In an IMF study of the costs of financial regulation of the different reforms affecting the banking sector, Elliot et al (2012) conclude that "*the interactions tend to ameliorate the costs of each individual item. That is, the regulatory reforms provide a number of incentives to move towards safer operations, so that creating higher safety margins in one area will often automatically move a bank partway towards greater safety by other measures, reducing the cost of adjustment in that other area of regulation. Thus, the cumulative cost of the suite of regulatory reforms is probably modestly less than the sum of the parts approach*".

Specific concerns about interaction effects have been raised regarding the interplay between bank capital and liquidity requirements in the CRD IV package, the bank resolution proposals (BRRD) and Solvency II. Other main areas of interaction (including criticisms of inconsistencies between rules) are discussed further below, as they are not specific to impacts on bank funding costs and bank lending capacities.

The interaction between the CRD IV package, the BRRD and Solvency II[51]

Insurance companies are the largest institutional investors in Europe. They are also significant investors in the securities issued by banks, in particular bank bonds. Given these (and other)[52] interactions and the fact that both sectors are subject to a

[51] The following is based on analysis prepared by the risk sub-committee of the Joint Committee of European Supervisory Authorities

[52] For example, banks can lend to insurers, insurers may have deposits in banks, and banks and insurers may engage in financial transactions (insurance linked securities, securities lending, liquidity swaps, etc) to transfer and manage risks. However, these interlinkages do not appear to be significantly affected by the interrelation of the prudential frameworks.

significant overhaul of the prudential frameworks, concerns have been expressed about potential adverse repercussions between the different sectors. More specifically, it is claimed that Solvency II discourages insurers' investment in bank bonds, especially debt of longer maturities[53] and that this, in turn, conflicts with banks' requirements under the CRD IV package to build up higher capital and liquidity buffers. [54] Moreover, the bank resolution proposals and expectation of bail-in is seen to further reduce the attractiveness of bank debt to insurers.

The impact of Solvency II on insurers' asset allocation is further discussed in section 6.5.1 below. A number of studies are indeed critical of Solvency II and predict that insurers will change their demand for debt issued by banks, shortening the maturity demanded and focusing on the highest quality.[55] However, these studies do not reflect some important adjustments to the Solvency II framework. Moreover, there is other credible research refuting these findings.

Firstly, studies critical of Solvency II assume that capital requirements are binding on insurers' behaviour. A study by Höring (2013) compared the market risk requirements of the standard formula in Solvency II to those of Standard & Poor's requirements for its rating model for an A-rated company for a representative European life insurer. Höring found that the rating agency model required 68 % more capital (even for a target rating of BBB the capital required was 27 % more than the Standard Formula), suggesting that **the Solvency II standard formula will not impose any additional constraints for most life insurers**.

Secondly, many of the studies critical of Solvency II are partial in that they focus on credit spread risk. They do not take into account the interest rate risk charge (which captures the risk of mismatch between the duration of assets and liabilities) and which gives incentives for insurers to hold a matched portfolio where assets broadly match the generally long maturity of insurance liabilities. The studies also do not allow for diversification effects, which incentivises the holding of a diversified asset portfolio, including securities issued by banks.

Gorter and Bijlsma (2012) conclude that the attractiveness of bank debt is not strongly affected by Solvency II, mainly because what constitutes ‘long-term’ debt for banks tends to be shorter than the ‘long term’ for insurers. Similarly, Zähres (2011) concludes that senior bank bonds remain attractive for insurers. Insurers have revealed their preference for short to medium-term bonds with maturities between 3 and 5 years, which coincides with banks' issuing preferences. Longer-term maturities do not seem to be frequently chosen by banks.

[53] Investment may also be in equity. However, the total amount of insurers invested in equity is significantly lower. Also, the general conclusions about a limited impact of Solvency II on asset allocation also hold for equity. Current trends in insurers' equity investments appear to be driven by the current economic environment and low interest rates and not capital requirements. As regards banks' equity investments in insurers, the holdings are not significant, and the CRD IV package does not introduce any material changes to capital charges for market risk in equities.

[54] The reasoning is that, in the application of the standard formula of Solvency II, there is an increase in capital requirements as the maturity of the debt increases and as the credit quality deteriorates. It is therefore concluded that this may lead insurers to hold relatively fewer long-term bonds, especially low quality bonds, at a time when banks need to issue more.

[55] See for example Fitch (2011) and Oliver Wyman and Morgan Stanley (2010).

Therefore, **Solvency II** – especially considering further adjustments as part of the long-term guarantee package (see section 4.5 above and section 6.5.1 below) – **does not appear to impose any barriers to insurers' investments in bank debt**. However, the CRD IV package and BRRD are expected to lead to material changes in the equity and debt issuance of banks, and this could affect the demand for such instruments from insurers. In particular, BRRD introduces the possibility that unsecured debt can be written down or converted if the supervisor deems the institution failing or likely to fail, no reasonable prospect exists for alternative private sector or supervisory measures, and resolution is in the public interest. Bail-ins will introduce losses to senior unsecured debt-holders while the issuer is still a going concern.

In general, bonds that convert to equity may not have attractive features for insurers, since income streams will be less predictable. As already noted in the previous section, survey evidence suggests that **investors regard senior bail-in debt as an investible asset class**[56]. Also, the price of those bail-in bonds will be an important factor for insurers (and other investors). If returns are attractive then insurers may be willing to allocate assets not covering technical provisions or regulatory capital requirements to these bonds to earn higher returns. A distinction needs to be made for the behaviour of unit-linked investors, since in this case it is the decision of policyholders rather than the insurer per se that matters for asset allocation[57]. The returns available on these types of bail-inable bond may prove attractive, particularly at a time of low interest rates.

There are various factors that will affect the returns banks offer on their debt. For large banks that have benefited from being perceived as 'too big to fail', then BRRD might change investors' perception into not expecting the implicit subsidy, with the result that higher returns are required for unsecured debt. As noted above, the reduced implicit subsidy is a cost to the banks seeking to raise funds, but not a societal cost. Moreover, the additional capital and liquidity requirements as per the CRD IV package – and other measures to improve the resilience and stability of banks – will reduce the risk of default from the investors' perspective. Combined with the prospect of improved recoveries compared to what they otherwise might have been, this acts as an off-setting factor for increases in the cost of unsecured debt.

If insurers do not increase their investments in bank debt (or reduce it for fear it will be bailed in), then there is an open question of who would increase their holding of bank debt (e.g. hedge funds, mutual funds, pension funds), and whether this is desirable. Based on the above, however, it would seem premature to conclude that the overall effect would be significantly negative and enhanced through adverse interactions between Solvency II, the CRD IV package and the BRRD. **The overall dynamics are complex and difficult to predict**, which **calls for on-going monitoring** (like with other parts of the reform)**.** In any case, the potential risks and

[56] See JP Morgan (2012).

[57] A unit-linked insurance plan is a product offered by insurance companies that gives investors the benefits of both insurance and investment under a single integrated plan. Hence, the insurance company buys units in an investment fund. The number of units attributed to a specific policyholder depends on the amount invested and the price of the units at the time of the investment. One can choose from a range of different funds to suit one's attitude to risk. These include low-risk deposit-type funds, medium-risk funds and higher-risk funds that are mostly invested in the stock market. Almost all unit-linked plans involve some degree of capital risk.

related costs must be balanced against the longer-term prospect of a banking system where funds are allocated more efficiently to better managed institutions, as investors realise that there is a more realistic prospect of large banks being allowed to fail.

6.4.6 Summary of quantitative estimates of the impact on bank lending

It is too early to give a final assessment of how the regulatory reforms will impact on bank funding costs and what this means for bank lending. Nonetheless, a number of studies have aimed to predict the likely impact of different rules on bank lending, using various modelling techniques.

Elliot et al (2012), in an IMF paper, consider the combined effect of higher capital and liquidity requirements, derivatives reforms, and various other rules affecting the banking sector.[58] The long-term estimates provided show that the average cost of bank lending could rise by 18 bps in Europe.[59] These results are similar to studies from the OECD and the Basel Committee of Banking Supervisors. The OECD uses a macroeconomic model to translate the credit spread increases into declines in expected growth, concluding that the major economies' GDP would be about 0.16 % and for Europe 0.23 % lower after five years.[60] The LEI report of the BCBS estimated that a 1 percentage point increase in capital requirements (with no change in liquidity ratios) would reduce the long-run steady-state level of economic activity by 0.14 % annually for the euro area and 0.2 % when the NSFR are also met.[61]

The Macroeconomic Assessment Group (MAG) (2010), established by the FSB and BCBS, estimated that bringing the global common equity capital ratio to the agreed minimum level would result in a maximum decline in the GDP level of 0.22 % after 35 quarters, relative to baseline forecasts. This is followed by a recovery in GDP towards the baseline. In terms of growth rates, annual growth would be 0.03 percentage points below baseline for 35 quarters, followed by a period during which annual growth is once again 0.03 percentage points higher. In other words, the potential negative effects of higher capital requirements on GDP are temporary and are later fully eliminated. These results also include the impact of spill-overs across countries, reflecting the fact that many or most national banking systems would be tightening capital levels at the same time.

Whilst the actual impact could be greater if banks attempt to meet the stronger requirements ahead of the regulatory timetable, other factors not modelled by MAG might lead to an offsetting impact. For example, banks have a number of options for responding to the higher capital requirements, such as cost reduction or shifting their portfolios towards safer assets, as discussed in section 6.3. This would correspondingly reduce the need for higher loan spreads and/or lower lending volumes, thereby reducing the assumed impact on real activity.

Higher macroeconomic estimates are reported in industry studies, such as the industry-financed Institute of International Finance (IIF). IIF (2011) predicts

[58] See Elliot et al (2012), for a full critique.
[59] The study also reports the impacts for Japan (8bp) and the USA (28bp).
[60] See Slovik and Cournede (2011).
[61] See BCBS (2010). Note when changes in RWA while meeting NSFR requirements are assumed, the costs for the Euro area sum up at 0.16 % (see Table 9 in the study).

significant increases in the price of bank credit, which are estimated to result in GDP levels that are 0.6 % lower in Europe by 2015 and 0.4 % by 2019 than would have been the case without the comprehensive financial reforms. This study focuses on transition effects more than the long-term effects. Also, the baseline against which changes are measured appears largely to reflect pre-crisis capital and liquidity levels, meaning that much of the costs of shifting to a more stable financial system are attributed to regulation even if they are due to market-driven adjustment. In addition, the model may translate too much of the cost increase to banks into higher lending rates for the economy.[62]

When interpreting the results of macroeconomic cost studies, it is important to realise that the baseline forecasts do not envisage any future financial crises – i.e. they only look at the costs and not the benefits of reform. It is also important to understand that the models are subject to significant modelling uncertainty. Also, the studies often assume a fixed cost of equity and debt (criticised above), full variable cost pass-through to clients (which applies only in fully competitive markets), static balance sheet (i.e. unchanged loan demand at a higher cost level), and a negative causal link between higher lending rates and economic growth via the credit channel. As such, these modelling techniques do not fully reflect the economic reality.

As regards especially the link between lending rates and credit growth, whilst the positive link between investment and economic growth is empirically well established, there is **no conclusive evidence that higher lending rates hurt economic growth in advanced economies**, even though they may slow down credit growth. For example, econometric evidence by Shafik and Jalali (1991)[63] rejected the view that high interest rates are associated with low economic growth in the industrial countries. The 1980s saw a period of rapid growth in the world economy that coincided with unprecedentedly high real interest rates. Other authors[64] have argued that the level of investment will be higher with increasing real interest rates, because the resulting greater savings mobilisation eliminates credit rationing. Higher interest rates may also be associated with rapid economic growth due to improved resource allocation and more productive investment. In other words, when interest rates are high, the projects face a higher threshold of positive net present value (NPV) for obtaining credit. As a result, only more productive projects will be financed, enhancing trend growth. For example, when interest rates are high, there should be less demand for housing loans and more real economy lending.

Thus, **any modelling approach is prone to challenges and critique**, because the results strongly depend on the chosen methodology and often strong assumptions. Moreover, the models are not capable of capturing all the expected effects and interactions[65], including interactions between rules, and are constrained by data limitations. The results, therefore, need to be interpreted with some caution. The same

[62] See Elliot et al (2012) op.cit. for a full critique and Table 1 in this report.
[63] Shafik N., Jalali, J., "Are High Real Interest Rates Bad for World Economic Growth?", Working Paper Series 669, World Bank, May 1991.
[64] E.g. see McKinnon, R.I. (1973), „Money and capital in economic development", Washington DC, Brookings Institution, and Shaw, E.S. (1973), Financial deepening in economic development", Oxford University Press.
[65] For example, none of the study considers the interaction of the bank reforms with Solvency II. The interaction with the insurance sector would be extremely complex to model.

also applies to the macroeconomic model applied for the purpose of this study, as summarised in Box 6.4.1 below and explained in more detail in Annex 5.

Box 6.4.1: **Modelling the macroeconomic costs of capital requirements, bail-in and resolution tools**

The macroeconomic costs of new regulatory requirements are estimated using a dynamic general equilibrium model QUEST III, developed by the Commission services. In line with the estimations of benefits (see section 4.2.7 and annex 4), two scenarios are modelled: increasing minimum regulatory capital requirements from 8 % (baseline) to 10.5 % of risk-weighted assets (RWA) along with improvements in the quality of capital with (scenario 2) and without (scenario 1) the additional tools of increased loss absorbency (bail-in) and resolution funds. The transmission mechanism of the costs to the real economic is solely through the lending channel. Details are contained in annex 5.

There are two basic assumptions that underlie the model. First, if the banks' funding costs increase because of regulation, these costs are fully passed on to clients (such an assumption only holds true under perfect competition and is hence a likely overestimation). Secondly, the degree to which the Modigliani-Miller (MM) theorem holds is important for the impact of increasing capital requirements on banks' costs (see section 6.4.2 above). Under the MM theorem, banks would be indifferent between using debt or equity to fund their activities, as there is no optimal combination of the two for firms (i.e. the WACC is invariant to the debt-equity funding mix). When the MM theorem holds in full (100 %), an increase in capital funding would be completely offset by a fall in the equity and debt risk premium and overall weighted funding costs would not change. Otherwise, the funding costs would increase and could impact the economic activity through the extent of cost pass-through to clients.

In the most conservative approach, costs are estimated by assuming that MM does not hold (0 % MM offset), i.e. the increase in capital requirement is fully reflected in the increase of funding costs. This approach follows the methodology employed in studies by the BCBS (LEI report of 2010 and MAG 2010 study). Whilst no MM offset is a very strong assumption, there are several good reasons to believe that the MM does not hold at 100 % in banking, such as taxes and the existence of implicit subsidies. Therefore, the second approach follows the Bank of England methodology (Miles et al (2013) and allows for a 50 % pass-through to bank funding costs (i.e. 50 % MM offset).

The results reported below assume that all banks need to increase their capital levels by 2.5 percentage points (i.e. from 8 % to 10.5 %), which tends to overestimate the costs. Annex 5 therefore also reports results (showing lower costs) based on banks' 2012 capital levels (i.e. allowing for capital buffers) and counting increases in capital from those levels to meet the new requirement.

Results in Table 1 show the impact of increasing capital requirements, measured as the % deviation from the baseline for GDP and investment. The impact on other variables, including lending rates, loan volumes, employment and consumption are reported in annex 5. For example, with full cost pass-through and under the 50 % MM offset, on average, bank lending rates increase by some 13 bps on average in the long term, whilst the volume of loans falls by 0.86 %.

Focusing on the impact on GDP, assuming 50 % MM offset, increasing capital requirements from 8 % to 10.5 % of RWA has a negative impact on the level of GDP, which expressed as deviation from the output trend amounts to 0.13 % of GDP per year in the long term. The costs increase to 0.27 % under the more extreme assumption of zero MM offset (and they are equal to nil under the assumption of a full MM offset).

Table1: The impact of increased MCR from 8% to 10.5% of RWA and changes to quality of capital.
(expressed as deviation from the baseline)

	GDP (in %)		Investment (in %)	
	No MM	50% MM	No MM	50% MM
2014	-0.05	-0.02	-0.68	-0.34
2015	-0.05	-0.02	-0.97	-0.48
2016	-0.06	-0.03	-1.00	-0.50
2017	-0.08	-0.04	-1.02	-0.51
2020	-0.12	-0.06	-0.99	-0.49
long term average	-0.27	-0.13	-0.81	-0.40

Source: Commission Services calculations

Table 2: The impact of increased MCR from 8% to 10.5% of RWA, bail-in and resolution fund.
(expressed as deviation from the baseline)

	GDP (in %)		Investment (in %)	
	No MM	50% MM	No MM	50% MM
2014	0.01	0.04	-0.71	-0.23
2015	-0.08	-0.05	-1.83	-1.10
2016	-0.15	-0.11	-2.51	-1.68
2017	-0.18	-0.11	-2.58	-1.65
2020	-0.28	-0.17	-2.53	-1.40
long term average	-0.69	-0.34	-2.08	-1.00

Source: Commission Services calculations, bail-in starts 2016. Resolution fund is phased in from 2016 to 2026.

Table 2 reports the joint impact of capital requirements and the additional BRRD tools of increasing loss absorbency through bail-in and the introduction of a resolution fund. The long term deviation from the output trend equals 0.34 % EU GDP per year when 50 % MM offset is assumed. In the most conservative case, when no MM offset is assumed, the costs are twice as high (and again zero if the full MM offset were to apply). As noted above and presented in annex 5, costs are estimated to be somewhat lower if the modelled adjustment in bank capital reflects banks' existing capital buffers (and only counts changes from the existing capital level in 2012 to the new required level).

The gross cost estimates need to be seen and interpreted in conjunction with gross benefits presented in section 4.2.7 (Box 4.2.6) to arrive at the net overall impact estimate, bearing in mind however that the costs and benefits are estimated in quite different models and are subject to significant modelling uncertainty.

6.5 IMPACT ON OTHER SOURCES OF FINANCING

Restoring bank balance sheets and improving banks' resilience is a key objective of the financial regulation agenda. However, there is also a case for diversifying financing sources to reduce the economy's dependence on bank lending. This would help strengthen the resilience of the economy faced with future banking crises and, more generally, contribute to financing of the EU economy. Concerns have been raised that the reform programme may be impeding the provision of other sources of finance or distorting the financial intermediation process in a way that increases the costs of alternative financing sources. The following focuses on two sets of alleged adverse effects:

- **The impact of Solvency II** on insurers' investment and asset allocation decisions (section 6.5.1);

- **The impact of different regulations on market liquidity**, which affects the financial intermediation process and ultimately the cost of raising finance in the market (section 6.5.2).

Other potential unintended consequences and possible new risks of the financial regulation agenda are discussed further in chapter 7.

While parts of the reform efforts are about making the financial system more stable and resilient whilst minimising any undue adverse effects on the financial

intermediation process, regulatory attention is, in fact, proactively promoting alternative sources of financing for the economy. [66]

6.5.1 The impact of Solvency II on insurers' investment and asset allocation decisions

Insurance companies are major institutional investors in Europe. Given the often long-term nature of their liabilities, they are particularly suited to make long-term investment and hence act as providers of long-term financing to the economy.[67] It has been argued that strengthening capital requirements as part of Solvency II to capture all quantifiable risks, including market risk (which was not considered in Solvency I), and the introduction of "artificial volatility" due to market-consistent valuation may distort insurers' investment behaviour and long-term asset allocation decisions.[68]

The introduction of risk-based capital requirements entails an incentive to adjust asset allocation in favour of assets with lower capital charges. For example, according to the standard formula, charges are higher for equity instruments and, among debt instruments, for debt with longer durations and lower credit ratings. Also, zero-risk weights apply to sovereign debt issued in the EEA, which has also been criticised in relation to bank capital requirements under the CRD IV package and is a point that requires further analysis, especially in the context of on-going sovereign debt problems and high public financing requirements. However, the incentives for insurers to shift assets (e.g. from equity to debt, from corporate to government bonds, or from short to long durations) is unlikely to be as pronounced as a simple comparison of risk weights may suggest.

Critics often neglect the fact that **Solvency II removes the investment limits** currently in place under Solvency I and national provisions (in the form of restrictions on both the admissibility of asset classes to cover technical provisions and quantitative limits on the degree to which certain asset classes can be held to cover technical provisions). They are **replaced by the "prudent person" principle**, which allows insurers to invest more freely, subject to the insurer properly diversifying assets and limiting investments to those assets whose risks they can truly understand and control. Hence, in principle, **Solvency II frees up insurers' asset allocation** and makes possible investments that have previously been constrained.

The alleged undesirable results on asset allocation are deduced from the implementation of the standard formula in Solvency II. However, insurers can also develop internal models that might mitigate some of the possible effects.

Importantly, **Solvency II aligns capital requirements with investment risks**. Thus, insurers will be incentivised to weigh up the investment risks with the expected returns on all their assets. Moreover, Solvency II **recognises diversification effects**, including on investment risks, which should incentivise insurers to invest in several classes of assets.

[66] See the measures set out in the Communication on long-term financing the European economy (COM(2014) 168 final), summarised in section 4.8.
[67] See the Green Paper on long-term financing of the European economy, COM/2013/0150 final
[68] See for example Insurance Europe (2013).

As regards the potential disincentive to invest in bonds of longer maturity, there is a trade-off between the higher credit risk resulting from investing in long-term corporate bonds and the mismatch resulting from investing in short-term corporate bonds to cover long-term liabilities. For high-quality bonds covering long-term liabilities, the incentive is still to invest in long-dated bonds. The incentive is reversed for low credit-quality bonds, for which the credit-risk charges outweigh the charges for a maturity mismatch between assets and liabilities.

As regards equity investments, Solvency II calibrations already take into account the role of insurers as long-term equity investors, and **calibration of capital charges for equity investments has been adjusted**. Detailed calibrations have also been conducted for other asset classes and will be conducted going forward, so as to ensure that the new regime, once it enters into force in 2016, will not unduly hinder long-term investments (but also not artificially favour certain investments, especially if they carry higher risk and deliver uncertain economic and social returns). Moreover, **there is a review clause which will require re-examining the risk weights under the standard formula**.

Parts of the past literature on potential adverse effects of Solvency II have been invalidated by the recent adjustments put forward as part of the long-term guarantees package (see also section 4.5). These adjustments mitigate the impact of short-term balance sheet volatility stemming from spread risk and better reflect the long-term investment model of insurers and their propensity to hold assets to maturity. They lessen in particular the volatility of own funds for insurers underwriting certain insurance products (e.g. annuities, other insurance products with long-term guarantees).

Importantly, **the role of regulation should not be overemphasised** given the many other factors that influence insurers' asset allocation decisions. This includes for example a repositioning of investment portfolios in light of the financial and economic crisis.

As already referred to in section 6.4.5 above, research by Höring (2013) shows that the market risk requirements of Solvency II's standard formula would not bind for most life insurers. Instead, rating agency models already tend to require higher capital than what is required by Solvency II.

Industry surveys confirm the relative weight given by insurers to capital charges in determining their asset allocations, and that **major asset reallocations as a result of Solvency II are not expected**. For example, a survey conducted for BlackRock (2012) shows that less than 10 % of responding EU insurers expected to decrease their asset allocations to private equity and hedge funds upon the entry into force of Solvency II. 32 % instead were positive that allocations to alternatives would increase, in spite of comparatively higher capital charges. In another survey conducted by ING Investment Management (2013), 49 % of the UK fund managers and financial intermediaries interviewed believed insurers have over the past 12 months increased their exposure to new asset classes such as infrastructure. When asked about the next three years, 77 % of those interviewed said they expect insurers to increase their exposure to these new asset classes.[69] Allocation to alternatives has

[69] www.ingim.com/EU/News/News/IWP_072400

traditionally been low, both due to risk aversion and limits imposed by pre-Solvency II regulation. Interest in these assets from life insurers is generally explained by the search for yield in a low interest environment, the need to meet liabilities arising from legacy products with high long-term guarantees as well as insurers' need to match long duration liabilities. Other studies confirm that a reduction in equities and alternative assets is not expected despite the higher capital charge they may incur in Solvency II.[70]

In September 2012, the Commission asked the European Insurance and Occupational Pensions Authority (EIOPA) to examine whether the calibration and design of capital requirements necessitates any adjustment, without jeopardising the prudential effectiveness of the regime, particularly for investments in infrastructure, SMEs and social businesses (including securitisation of debt serving these purposes). EIOPA recommended criteria to define high-quality securitisation and a more favourable treatment for such instruments.[71] This is a major step in the wider agenda of fostering sustainable securitisation markets (see section 7.6). The Commission will take the EIOPA advice into account when formulating the relevant delegated acts for Solvency II in the second half of 2014, including possible adjustments to the treatment of assets classes other than securitisation (infrastructure, SMEs and social businesses), as set out in the original mandate to EIOPA.

Furthermore, the Omnibus II directive[72] will introduce measures into Solvency II which are specifically designed to reinforce existing incentives to match long-term liabilities with long-term assets and to hold these to maturity (the long-term guarantee package). The list of assets eligible for the use of the matching adjustment has been broadened to **include key long-term investments such as infrastructure project bonds**.

6.5.2 The impact of regulations on market liquidity[73]

Liquid financial markets tend to exhibit a number of desirable characteristics: [74]

- **Tightness** – i.e. low transaction costs, such as the difference between buy and sell prices, like bid-ask spreads in quote-driven markets, as well as implicit costs;
- **Immediacy** – i.e. the speed with which the orders can be executed and settled, reflecting, among other things, the efficiency of trading, clearing, and settlement systems;
- **Depth** – i.e. the existence of a large number of orders, both above and below the price at which the security trades at any given point of time;

[70] See for example Committee on the Global Financial System (2011).
[71] See https://eiopa.europa.eu/fileadmin/tx_dam/files/consultations/consultationpapers/EIOPA-13-163/2013-12-19_LTI_Report.pdf
[72] A directive proposed in 2011 (COM 2011/0008) to adapt Solvency II to the new framework for implementing measures introduced by the Lisbon Treaty and to the creation of EIOPA
[73] This section mainly focuses on market liquidity, which is generally referred to as the ability to buy or sell an asset at short notice with little impact on its price. This is different from what was discussed in section 6.4.3 in relation to banks' funding liquidity, which describes the ability to raise cash either by borrowing or via the sale of an asset. Market liquidity does of course influence funding liquidity.
[74] See Sarr and Lybek (2002).

- **Breadth** – i.e. orders are both numerous and large in volume with minimal impact on prices; and
- **Resiliency** – i.e. new orders flow quickly to correct order imbalances, which tend to move prices away from what is warranted by fundamentals.

A natural consequence of the above is that there is more than one way **to measure liquidity**, the most prevalent of which have been: time to execution; trading volume; the number of active participants; and the bid-ask spread.

Liquid financial markets have traditionally been thought of as having high trading volumes, narrow bid-ask spreads, and the ability to trade larger orders without significant price changes. Liquid financial markets enable investors to buy and sell financial assets as and when needed and at a fair value. Liquidity provides the opportunity to move in and out of positions without difficulty. This does not only imply lower costs in secondary markets where the assets are traded, but also lower costs of issuing assets and raising external capital in primary markets. Additional benefits of liquidity include the ability of market participants to liquidate positions as needed and, particularly in the case of stressed markets, or a market participant default. Further, liquidity allows market participants to price contracts accurately and fairly, which allows them to manage risk credit and market risk effectively. Therefore, **liquidity is generally a highly desirable characteristic of financial markets.** In this context, concerns have been expressed that the EU reforms of financial sector legislation act to reduce market liquidity, with corresponding costs to the wider economy.

One of the recent challenges to the conventional theory and practice, explained also by the crisis experience, is the idea that **market liquidity can be illusory.**[75] Such beliefs can disguise the fragility of the financial system, and induce investors to place excessive reliance on leverage to fund high-yield growth activities. This can stretch liquidity in the system beyond its limits, so that the system is unable to cope when an external shock occurs. Investors facing large, leveraged losses retreat to safer markets, and markets previously thought to be deep and resilient can dry up unexpectedly. One consequence of liquidity illusion is that it may invalidate the conventional measures of liquidity listed above because in a market suffering from liquidity illusion these measures will reflect investors' mistaken perceptions of liquidity. The true level of liquidity of a market may be very difficult to detect.

Liquidity is likely to be beneficial only up to a point. The additional benefits derived, say, from algorithmic trading that exploits price divergences for a fraction of a second must be minimal compared, say, to the benefits of having equity and bond markets with reasonable day-to-day liquidity. Moreover, the position-taking and speculation required to achieve greater liquidity can in some markets be harmful and produce destabilising effects. Active trading can be used by intermediaries to extract economic rents, by creating volatility in the market against which customers then seek to protect themselves and pay for the provision of market liquidity. In addition, trading on a proprietary basis may present conflicts of interest between the trader and customers. Thus, arguments that liquidity is generally desirable and that regulation

[75] This can occur when market participants mistakenly perceive that financial conditions and specifically, the liquidity of an asset, portfolio, market or even the economic system as a whole, is more robust than it is in reality. See Nesvetailova (2008) for a more detailed discussion.

restricting liquidity is harmful need to be qualified. Regulation needs to strike the right balance between the positive and negative effects, and this approach has been followed in the EU financial regulation agenda.

Impact of transparency requirements

One of the stated objectives of MiFID II is to improve the price discovery process and achieve fair and efficient price discovery, which is expected to have an overall positive impact on liquidity (see section 4.3.1). However, one area where MiFID II has been criticised the most for the potential impact on liquidity are the transparency requirements for non-equities.[76] The other area relates to restrictions of high-frequency trading, which are discussed separately below.

Industry concerns have mainly focused on **pre-trade transparency requirements**, in particular requirements that all requested quotes must be firm and once a firm quote is provided to one client, it must be universally executable for all clients. Critics argue that too much transparency would have detrimental effects on liquidity as dealers would be more reluctant to commit capital if their quotes or trades are firm and displayed in public, so that the market may turn against them. More specifically, it is argued that dealers need to be able to provide specific quotes depending on the product, the order size and the settlement risk, so as to effectively hedge their subsequent risk. Without this information, the dealer would face uncertainty and would either widen the quote or step away from the market entirely, impacting on all market participants. Also, it is argued that transparency compromises the ability of the dealer to hedge the position as information is leaked to other dealers who may take up contrarian market positions. Overall, this combination of higher risk and increased hedging costs is argued to lead to lower yields for investors and push up the cost for issuers. While a number of studies raise these concerns, **there does not seem to be any empirical evidence to substantiate (or refute) the significance of these concerns**.[77]

As regards **post-trade transparency requirements**, the main concern also relates to hedging positions, with industry asking for delays in reporting (especially on large transactions) to allow dealers sufficient time to hedge their positions. If not, dealers would be exposed to the market (e.g. competitors can take contrarian positions), which may discourage them from providing liquidity, in particular, in relation to larger transaction of less frequently traded instruments. However, **no negative impact on liquidity has been found in empirical studies**. These are mainly studies that examine the implementation of post-trade transparency requirements in the USA.[78]

The **need to balance transparency and market liquidity** is acknowledged in the MiFID II proposals. Correspondingly, they were drafted to ensure proportionality in the transparency requirements to mitigate these risks. In particular, there has been recognition of the need to properly calibrate transparency requirements for non-equities. Also, special rules and exemptions (e.g. for large trade orders) are applied to accommodate and maintain liquidity in non-equity markets.

[76] MiFID I only mandated transparency for shares admitted on a regulated market.
[77] See for example, TABB (2012).
[78] See MiFID II impact assessment prepared by the Commission Services.

Restrictions on high-frequency trading (HFT)

HFT or any other type of algorithmic trading can have beneficial effects on market liquidity.[79] Correspondingly, any restrictions on HFT would then reduce market liquidity. However, it can also be argued that the provision of additional liquidity through HFT is more limited in practice (and ever faster trading frequencies may result in declining benefits and indeed have adverse effects[80]), and that HF traders can take liquidity from, rather than provide it to, long-term investors, particularly at times when liquidity is already low and the market is under stress. Data limitations make a final assessment difficult.

Even restrictions on HFT have the potential to adversely impact liquidity in theory, the HFT proposals in MiFID II are unlikely to have such impacts. The main provision is a requirement for HF traders to provide continuous liquidity, similar to the conditions that apply to market makers. The objective is to ensure that HF traders provide liquidity at all times, not just when markets are liquid but also in more stressed market conditions, so as to mitigate episodes of high uncertainty and volatility. Thus, the provision is in fact intended to improve liquidity.

Nonetheless, the provision could impose significant additional risks for HFT if the requirement is interpreted to mean that, at all times the market is open, the HF trader has to offer to buy and sell a security across a spread that reflects the usual spread for that security. This could have the effect of making HFT non-viable and too risky, potentially resulting in such trading to return to manual trading (with adverse consequences on trading costs and liquidity). However, any HFT sequence algorithm is likely to be adjusted such that it will display firm bid and offers at competitive prices under normal market conditions, and to widen the spread offered or withdraw from the market under more distressed market conditions where bid and offers across a narrow spread become too risky (as is currently allowed for traditional market-makers), such that trades may actually rarely be executed in those conditions and hence risks for HF traders minimised. Thus, the rule on continuous liquidity provision for HFT is unlikely to have an adverse impact on liquidity. At the same time, it may however also not achieve the desired objective of improving liquidity and reducing volatility.[81]

Restrictions on short-selling

In December 2013, the Commission adopted a report on the evaluation of the Short-Selling Regulation,[82] which took into account technical advice by ESMA.[83] Overall, the Commission report concluded that the SSR has had **some beneficial effects on volatility, mixed effects on liquidity and led to a slight decrease in price discovery**. The introduction of restrictions on uncovered short sales in shares and

[79] See Box 4.3.1.
[80] Budish et al (2013).
[81] The other relevant proposals (e.g. on minimum tick size, minimum latency periods and minimum execution orders) are also unlikely to have an adverse effect on liquidity. See for example study prepared for the UK Government Office for Science (2012).
[82] COM(2013) 885 final
[83] "ESMA's technical advice on the evaluation of the Regulation (EU) 236/2012 of the European Parliament and of the Council on short-selling and certain aspects of credit default swaps", Final Report, ESMA/2013/614, 3 June 2013.

sovereign debt has had the intended impact of improved settlement discipline. While ESMA's technical advice suggests that the introduction of the Regulation was followed by a decline in quantities available for loan on the securities lending market, it also concludes that this recovered after January 2013. Another analysis by ESMA showed that between June 2012 and June 2013, the value of equities on loan actually increased by more than 10 % when adjusting for seasonality[84].

Some concerns were raised by market participants that **increased transparency of short-selling activities** could adversely affect market liquidity. According to these concerns, traders could seek to counter herding behaviour by trying to limit their short-selling activities, so that they do not exceed the regulatory thresholds, thereby harming market liquidity. Although the SSR has set rather high thresholds and provided for a market-making exemption to address these concerns, ESMA's analysis of net short positions in shares reported to competent authorities and disclosed to the public suggests that the data may indicate reluctance from some market participants to disclose their short positions to the public.

At this stage, the ban on uncovered sovereign CDS transactions seems to have had **no impact on the liquidity of EU single name CDS, as well as on the related sovereign bonds markets**, even though a decline in activity for sovereign CDS in a few EU countries and reduced liquidity in European sovereign CDS indices could be noticed. The Commission noted in its evaluation of the SSR that no Member State has so far used the possibility granted in the SSR to suspend restrictions on naked sovereign CDS in the event of an adverse impact on liquidity. In its technical advice, ESMA suggested that higher legal certainty should be pursued by clarifying some wording in the legal text (e.g. on the correlation test) and that some **refinements to the detailed provisions could be envisaged**: e.g. the use of sovereign CDS indices for hedging purposes, cross-border hedging under certain liquidity and correlation circumstances, and group hedging by a particular and dedicated entity.

Mixed market impacts have been noticed in relation to the longer-term emergency measures introduced by some EU countries at the height of the financial crisis. Concerning the possibility to impose restrictions on short-selling introduced by the SSR, ESMA considers that such measures are necessary and appropriate. However, no clear conclusion could be drawn as to their effectiveness on the basis of the few concrete experiences of short-term bans imposed in case of a significant fall in the price of a financial instrument.

According to ZEW (2011), temporary restrictions on short-selling do not harm market efficiency due to their transitory nature, but they cannot stop a downward spiral when problems are due to reasons other than temporary uncertainty. Cliftong and Snape (2008) argue that constraints on short-selling reduce informational efficiency of the market by inhibiting downward price discovery, and increase the likelihood of volatility and discrete price drops. Their empirical analysis shows significant negative effects on market liquidity of a ban lasting several months.[85]

[84] See ESMA (2013).
[85] E.g. see Cliftong and Snape (2008) and Boehmer et al (2008).

A study of the European short-sale ban on financial stocks of August 2011 by Félix et al (2013)[86] finds that **the current format of short sale bans serves the intended purpose, though at a cost**. The bans restrict further selling pressures on selected financial shares, both in the spot and in the derivatives market. At the same time, the short-selling ban allows market participants to continue trading in the equity index derivatives markets. Although a degree of market failure is documented, their results show that the index option markets continue to function, while financial sector stability seems to benefit from the bans. During the ban period, the trading volume of stock put options for the banned stocks declined due to the reluctance of market makers, as they become more risk averse and as hedging costs increased. As a consequence, speculators are prevented from betting on further declines in financial stocks, as the out-of-the-money single stock put options become too expensive. Thus, the European 2011 **short-selling ban helped curbing synthetic shorting activity in financial stock and reduced the risk of bank runs**.

In contrast, holders of financial stocks trying to hedge their positions are no longer able to do so without paying a higher price. As a result, the short-selling ban transfers wealth from the hedgers and other liquidity takers to liquidity providers. Moreover, the shift in investors' risk aversion provoked by the ban could have acted as a reinforcing loop of the crisis. While the short-selling ban is effective in restricting both outright and synthetic shorts (e.g., through options) on banned stocks, the authors found some evidence of trading migration to the index option market. Trading volumes in puts on the EuroStoxx50 index reached an extreme level upon introduction of the short-selling ban. Investors seemed to switch from single stock puts to index puts because of valuation and "flight-to-liquidity" incentives. This migration of selling pressures from financial stocks to European equity indices does not seem to jeopardise the efficacy of the short sale ban. The selling pressure is diverted from the financial stocks to a larger share of the stock market, thereby potentially reducing the destabilising effects in the financial sector such as bank runs and financial contagion.

Concerning sovereign CDS, some studies such as Criado et al (2010) provided no conclusive evidence of a link between CDS market developments and higher sovereign funding costs. However, others such as Delatte et al (2011) conclude that at least in distressed markets, sovereign CDS become a bear market instrument to speculate against the deteriorating conditions of sovereigns. While credit spreads for average firms do not seem to be affected by the CDS market, CDS spreads for opaque and risky firms exhibit an increasing effect on funding costs.[87] The corporate CDS market is more liquid than the underlying one and, therefore, reacts faster to new information. The deterioration in the informational value of CDS spreads could impact negatively on the objective to reduce reliance on credit agency ratings. Furthermore, it may be easy to circumvent the new regime as traders could short-sell sovereign bonds using options and futures instead.

Survey evidence suggests that the targeted short-selling ban contained in the Regulation is not widely perceived as having a detrimental impact on the market. **Only 13 % of financial exerts surveyed by ZEW (2011) viewed the ban as**

[86] See Félix et al (2013).
[87] See e.g. Ashcraft and Santos (2009).

detrimental, compared with 65 % of respondents who stated that the Regulation would enhance financial stability.

Impact of bank structural (and other) reforms on market-making and liquidity

One of the functions which banks and investment banks perform in the market is to trade and thus provide liquidity, enabling end-investors and other market users to buy and sell at reasonably low bid-ask spreads. The **market-making function is of particular importance in markets that tend to be less liquid** and rely on market makers to act as willing buyers and sellers.

Tighter capital requirements on banks' trading books provide incentives to reduce trading risk exposures. Any reduction in trading could reduce liquidity in the market. However, **any reduction in liquidity provision that was, in fact, associated with underpriced risks and excessive risk-taking by banks may not be a societal cost, but rather a societal benefit**. More generally, as noted above, not all liquidity serves a useful economic purpose and, from a social impact point of view, it may be better to forgo liquidity in some cases where this would otherwise come with excessive risks.

Concerns about liquidity impacts have also been expressed in relation to bank structural reform, in particular, if market-making is among the bank activities that can be placed – under certain circumstances and depending on the supervisory assessment - into a subsidiary that is separate from the deposit-taking bank. "Liquidity" is often left undefined, but typically the fear is that bid-ask spreads may increase, increasing the costs to trade at any scale. Investor options will be reduced, as trading entities can no longer trade as much and as easily as before. Price discovery is made more difficult. And price volatility may increase, if professional position takers no longer spot price divergences from rational levels and correct them through trading and speculation. However, **many concerns about the liquidity impacts of bank structural reform can be rebutted**:[88]

The USA has 80 years of continuous experience with subsidiarisation of investment banking activities (including market making, underwriting), as deposit taking affiliates within a Bank Holding Company are not allowed to do other than "core banking activities". There is no evidence to suggest that US bond markets are less liquid than European ones and have been constrained in their development, on the contrary. Even in the era when Glass-Steagall Act (the US legislation separating investment banking from commercial banking) was in place, the US economy has on average been thriving, compared to the current juncture.[89]

Markets need a large number of independent traders to function properly. Subsidiarisation of market-making deprives trading entities of access to funds that are

[88] See also the Commission Services' impact assessment on structural reform.

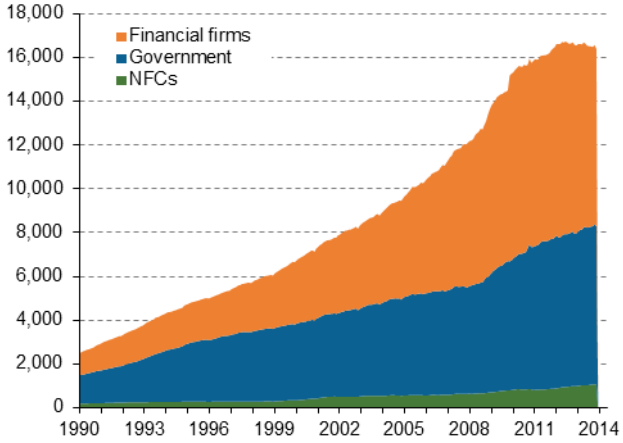
[89] Zingales (2012): "The third reason why I came to support Glass-Steagall was because I realised it was not simply a coincidence that we witnessed a prospering of securities markets and the blossoming of new ones (options and futures markets) while Glass-Steagall was in place, but since its repeal have seen a demise of public equity markets and an explosion of opaque over-the-counter ones. […]With the repeal of Glass-Steagall, investment banks exploded in size and so did their market power. As a result, the new financial instruments (such as credit default swaps) developed in an opaque over-the-counter market populated by a few powerful dealers, rather than in a well regulated and transparent public market."

artificially cheap because of implicit subsidies, forcing them to limit their size and the size of their bets and ensuring fair competition across stand-alone investment banks and investment banking arms within universal banking groups. These limitations may, in fact, increase the number of market participants, which may contribute to making markets more liquid.

The market liquidity concern neglects the fact that structural separation merely aims to reduce the implicit subsidies that distort the proper market functioning. Market prices are distorted when contaminated with implicit public subsidies. As a result, the banking system may produce excess liquidity (as is evident from its rapid and unsustainable expansion in the years leading up to the crisis). Separating market-making from the deposit entity will **reduce excessive risk-taking and artificial balance sheet expansion**. While the funding costs of the trading entity will increase, it may lower the funding cost for the deposit entity, which is exposed to less risk under subsidiarisation.

Bid-ask spreads on sovereign bonds of many EU countries as well as on large corporates were already at negligible levels before broker-dealer arms of universal banks started to sharply increase their inventories and market-making activities in the early years 2000. For example, bid-ask spreads on German Bund paper have not decreased in the run-up to the crisis, in which large European banks have sharply increased their inventories.

Chart 6..5.1: **Nominal outstanding securities (excl. shares) in the euro area**



Source: ECB data.

In any case, the bulk of the securities inventories do not correspond to sovereign or corporate debt, but rather to securities issued by financial firms. Only a small fraction (6.5 % at end 2013) of the outstanding securities in the euro area has been issued by non-financial private issuers (chart 6.5.1). A similar observation holds for OTC derivatives, of which only a small fraction have non-financial firms as counterparts. The bulk of OTC derivatives are intra-financial sector derivatives. In the US, primary dealer corporate bond inventories have surged between 2000 and 2008 and have collapsed again back to 2002 levels.

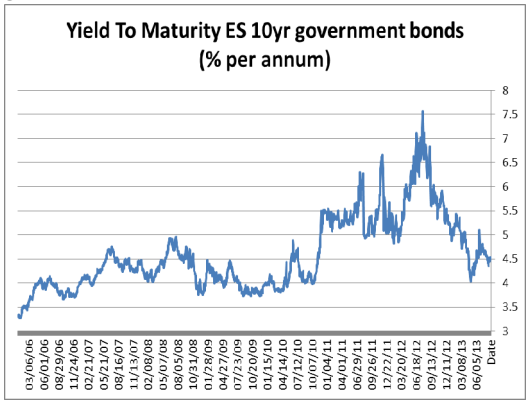
What matters for the economy is the level of the interest rate, at which corporates and sovereigns can fund themselves, which is a function of the supply and demand for these securities, and whether bid-ask spreads are reasonable to allow a normal degree of trading transactions. **The liquidity premium only makes up a negligible fraction of the interest rate level** and reflects the extent to which the security can be exchanged. Hence, the value added of the ability to purchase and sell a security 1000 times every minute is economically insignificant. As noted above, the liquidity concern is built on the presumption that more liquidity is always and inherently positive, irrespective of its level, which is not the case.

Financial economics does not have a good explanation yet on why people trade so much. One explanation is overconfidence, as in Odean (1999). Recent work presents models in which trading and trading speed can be excessive (Glode, Green, and Lowery (2012) and Bolton, Santos, and Scheinkman (2012)). In these models, advances in IT do not necessarily improve the efficiency of financial markets. French (2008) estimates that investors spend 0.67 % of asset value trying (in vain on average, by definition) to beat the market.

The market liquidity concern should be put into perspective. Richardson (2013) notes that **the issue of liquidity is more relevant in times of crisis than in normal times** when liquidity is typically not a pressing concern. Banks have not performed a significant liquidity role during crisis period,[90] and **central banks have stepped in to assume the role of market maker of last resort** (in covered bond markets, government bond markets) next to their role as lender of last resort.

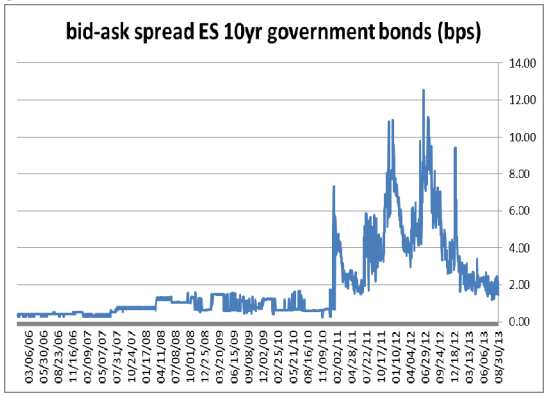
Bid-ask spreads are relatively negligible compared to the interest rate level. For example, as shown in charts 6.5.3 and 6.5.4, 10 year Spanish government bond yields have more than doubled and increased from less than 3.5 % in June 2006 to more than 7.5 % in July 2012. Bid-ask spreads in the period June 2006 to August 2013 on average are 2bp (0.02 %) and spiked at 12bp (0.12 %) in June 2012. The above suggests that the willingness and **ability of (private sector) market makers to influence the interest rate level is relatively limited**. If anything, their pro-cyclical behaviour and excessive liquidity provision can sow the seeds of future crises.

Chart 6.5.2: **Yield to maturity of 10-year Spanish government bonds**



Source: Bloomberg data

Chart 6.5.3: **Bid-Ask spreads of 10-year Spanish government bonds**



Source: Bloomberg data

Moreover, the structural reform as proposed by the Commission in January 2014 is only aimed at the large banking groups with significant trading activities. Medium-sized competitors or new entrants that are not subject to mandatory separation may gain market share from large banking groups, if artificial competition distortions in favour of too-big-to fail banking groups are being reduced. Hence, whereas some banking groups may face increased costs and may no longer serve certain customers, those activities may be picked up by smaller competitors that do not face structural separation requirements. Accordingly, customers are not likely to be left unserved.

[90] More generally, voluntary market making may not occur when it is most needed, i.e. during troubled market conditions. Even dedicated market makers are typically only allowed to post quotes during 90 % of the trading period and of course they may decide to breach their contractual obligations if they deem that fulfilling them would threaten their solvency.

Finally, under a subsidiarisation model, market-making would not be prohibited within a banking group. Depending on the supervisory assessment, it may just need to be performed by a legally separate trading entity. The resulting increase in the funding cost for the trading entity is part of the desired effects of the separation. Market making is a financially viable activity on its own, as illustrated by the fact that several important market makers are not taking any deposits. The Commission's reform proposal only requires the full separation of proprietary trading activities from deposit-taking entities. **Customer-related market making is not prohibited and only subject to a subsidiarisation requirement**, unless the relevant bank has limited trading activities or can show – to the satisfaction of its supervisors – that this is not required.

6.6 IMPACT ON RISK TRANSFER AND RISK MANAGEMENT

In addition to financial intermediation and facilitating the flow of finance to the economy, the financial system has the key function of facilitating risk transfer and risk management in the wider economy. The following examines the potential impact of the reforms with respect to the risk transfer function, including:

- **Provision of insurance services** (life or non-life) which enables households, businesses and the public sector to reduce their exposure to risk and purchase protection from insurance companies, and

- **Creation of markets in derivatives instruments**, e.g. in interest rates, foreign exchange and commodities, that allow the hedging of risks.

6.6.1 Impact on insurance provision

Solvency II is not intended to result in a general increase in the capitalisation of the EU insurance sector (unlike the CRD IV package in banking), but to make the capital requirements risk-based. Indeed, **the significant majority of insurance entities are not expected to raise capital because of Solvency II**. This was demonstrated by the fifth and last quantitative impact study (QIS5)[91] before the introduction of Solvency II. Based on a sample of 2 520 insurance companies, QIS5 showed that most of them have sufficient capital (own funds) to cover the new solvency requirements, and the industry average showed a comfortable solvency capital ratio (SCR) of 165 % for the participating institutions. This is in spite of the fact that the aggregate capital surplus is roughly 25 % lower than under the current regulation.

Subsequent analysis, conducted by EIOPA as part of the long-term guarantees assessment, showed that in the baseline scenario tested, life insurers had an aggregate deficit of EUR 145 billion relative to the SCR at the end of 2011, when credit markets were particularly volatile. However, the **adjustments proposed as part of the long-term guarantee package address the artificial balance sheet volatility** that was observed in periods of market stress under the baseline methodology for the long-term guarantees assessment.

[91] EIOPA Report on the fifth Quantitative Impact Study (QIS5) for Solvency II, 14th March 2011.

Nonetheless, there may be effects on some types of products which see increased capital charges to better reflect the risks. **Life products with guarantees are expected to become more expensive**, with the implication that consumers will be offered the choice of higher cost guarantees or increased risk-bearing through unit-linked products.[92] Some insurers may be withdrawing from long-term guarantee products if customers are not prepared to pay the increased (but risk-reflective) costs of guarantees, or they may be able to offer products with conditional guarantees, where the guaranteed return is linked to the market interest rate rather than fixed.

The increase in the price of guaranteed products is a reflection of the higher economic costs of providing these products. Policyholders have to either pay for shifting the risks to insurers or buy a cheaper product, but bear more risk. These changes are a direct consequence of moving to a more risk-reflective system.

6.6.2 Impact on hedging risks with derivatives[93]

A common criticism of the **OTC derivatives reforms (EMIR)** has been the assertion that it would make hedging idiosyncratic risks more costly. To the extent that EMIR helps correct the mispricing of risk that occurred prior to the crisis (e.g. in the form of inappropriate margining practices), its implementation **may lead to an increase in the price of hedging**. The precise magnitude of this increase is unknown, but it is not expected to be excessive. Moreover, the market players on the demand side may find that the cost of imperfect hedging is smaller than the pre-crisis cost of perfect hedging due to the low level of competitive pressures in the bilaterally cleared universe. As a result, they may end up being better off using an imperfect, but centrally cleared hedge. Notwithstanding these aspects, efforts have been taken to minimise any potential negative effects on the economy and to ensure gradual transition to the new clearing environment.

For example, **pension funds enjoy specific exemptions** from mandatory clearing. Some funds 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. At the same time, CCPs accept only cash as variation margin. Thus, a move to central clearing could necessitate pension funds to set aside additional cash reserves. This involves opportunity costs because of the low level of interest that is currently earned on cash collateral.

To reduce the potential negative impact of the central clearing requirement on retirement income, it has been agreed under EMIR to exempt pension funds from the central clearing obligation as regards OTC derivatives contracts that are objectively measurable as contributing to lower investment risks. In other words, trades that are done for hedging purposes are exempted for funds that are recognised as an eligible

[92] Contracts offered by insurance undertakings where no guarantees are provided (i.e. where the market risk is borne by policyholders – e.g. unit-linked products) are not factored into the calculation of the solvency capital requirement.

[93] In addition to the impact of the rules described here, as already alluded to in section 6.5.2, restrictions on short-selling may have an impact on hedging costs, whereby a short-selling ban acts as a wealth transfer from liquidity takers to its providers. As suggested by ESMA, some refinements can still be implemented to lessen this impact.

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 pension funds for hedging purposes will be subject to reporting and bilateral collateralisation requirements.

In addition, certain **exemptions apply for non-financial counterparties**. They are exempt from central clearing as long as they do not engage in non-hedging activities in the separate OTC derivatives asset classes that exceed a specific threshold: set at EUR 3 billion for interest rate, foreign exchange and commodity derivatives' classes, and EUR 1 billion for credit and equity derivatives. This was done specifically to limit any potentially adverse consequences on the real economy. Moreover, **the more stringent margining requirements apply to new trades only**.

As regards the macroeconomic impacts of derivatives reform, the Macroeconomic Assessment Group on Derivatives (MAGD) of the BCBS estimated that the gross **macroeconomic costs of OTC derivatives regulatory reforms would range between 0.03 % and 0.07 % of annual GDP**, depending on the assumptions relating to the netting benefits. At the same time, the estimated gross benefits from OTC derivatives reforms are 0.16 % of annual GDP and hence exceed these costs more than twofold (see also section 4.3.2).

Finally, there have also been concerns about the introduction of **position limits under MiFID II** impacting on the ability of commercial market participants to hedge their positions. These concerns have been addressed through an **exemption from the position limits regime for '*bona fide*' hedging** by commercial market participants. Thus, position limits will not apply to positions held by or on behalf of a non-financial entity and which are objectively measurable as reducing risks directly related to the commercial activity of that non-financial entity.

CHAPTER 7: ADDRESSING NEW RISKS AND POTENTIAL UNINTENDED CONSEQUENCES OF THE REFORMS

Concerns have been expressed that the rules intended to increase the resilience and stability of the financial system may in fact create new risks elsewhere in the system or create unintended consequences if unaddressed. This chapter addresses the following main potential concerns:

- regulatory arbitrage and potential shift of activities to less regulated sectors (section 7.1);
- risk concentration at the level of market infrastructures, in particular CCPs (7.2);
- risks in collateral markets (7.3);
- asset encumbrance in financial institutions' balance sheets (7.4); and
- risks of disorderly deleveraging (7.5).

The chapter also discusses potential unintended consequences in relation to developments in securitisation markets (7.6), competition (7.7), EU competitiveness (7.8), the need for consistent rules at EU and global level (7.9), potential tensions between Banking Union and the single market (7.10), the complexity of the regulatory system (7.11) and potential inconsistencies in the legislations (7.12). Overall, these new risks and potential unintended consequences are either the subject of ongoing work and addressed through careful implementation or are not considered, at this stage, to require immediate policy action, but they will nonetheless be subject to continual monitoring.

7.1 REGULATORY ARBITRAGE AND SHIFT OF ACTIVITIES TO LESS REGULATED SECTORS

Financial institutions may respond to the financial reforms by changing their behaviour to avoid or mitigate requirements. There are a number of ways in which industry may respond to circumvent the rules: through financial engineering (deploying new products to sidestep regulatory rules); through supervisory arbitrage, by shifting activity across jurisdictions (i.e. depending on how strictly prudential supervision is exercised); and by shifting activities to less regulated parts of the financial system. If done on a large scale, this would render the reforms less effective. New risks would start building up that would need to be managed and evaluated.

Regulatory arbitrage through financial engineering

Financial engineering can be used by financial institutions or agents to structure activities or products in ways to "game" the system to avoid the intended effects of the regulatory reforms and thereby reduce private costs.[94]

[94] For example, under the old capital rules, firms could avoid taking a deduction (from their capital requirement) for “material holdings” in other financials, by making the investment indirectly. This issue was spotted and addressed in the recent revisions of the capital requirements within the CRD IV package, which captures both direct and indirect holdings in other financials (under the rules for non-significant and significant investments). Whilst this example was spotted and addressed, there may be others that the regulators are yet to see as the market innovates to adjust to the new rules.

If financial institutions respond to regulations by engaging in financial engineering to meet the new regulatory requirements, this can create new risks. For example, in response to higher liquidity requirements, banks may look to access the liquidity embedded within asset portfolios held by insurers or fund managers, through so called liquidity swaps, or collateral upgrade transactions. These trades allow the borrower to exchange poorer quality assets (e.g. illiquid or less liquid assets or low credit quality assets) for better quality assets (e.g. liquid or higher credit quality assets) in return for a fee. In principle, such transactions can have a role in facilitating temporary transfers of liquid assets to financial institutions that need them (e.g. banks), whilst at the same time providing the lending firms (e.g. insurers or fund managers) with secured exposures and potentially enhanced yield. However, any significant increase in such activities in response to regulation could create new risks in the system: increased interconnectedness between banks and insurers and fund managers; possible increased pro-cyclicality of lending and asset prices (depending on the type and structure of the collateral arrangements); and concerns about whether using borrowed assets to meet liquidity requirements offers sufficiently resilient liquidity benefits in times of stress.[95] Market pressures and the expected liquidity rules have created some initial demand from banks for liquidity swaps. Similarly, opportunities to enhance returns on assets also drew interest from insurers. To date, however, the market remains small.[96] Nonetheless, it is worth watching this development.

Regulators and supervisors face the challenge of keeping track of new financial products and techniques, which of course may be developed with good intentions, but which may also allow financial institutions to circumvent regulations and create new risks to the system. Ongoing monitoring and review is required to ensure that regulatory arbitrage does not undermine the effectiveness of regulation.

Regulatory arbitrage through supervisory arbitrage

Separately, there may be risks of supervisory arbitrage. This refers to the shifting of certain activities or positions to other jurisdictions to avoid a situation of relatively more strict prudential supervision by one set of supervisors compared to another, or to avoid supervision altogether.

There is always a tension between rules and discretion. It would have been possible to completely eliminate such arbitrage by implementing a large number of strict and uniform rules. However, this would have then led to significant difficulties in areas where some discretion is clearly needed. The crisis demonstrated a "tick box approach to supervision" was inadequate (some banks "produced" satisfactory indicators shortly before their collapse). It is impossible to write down a complete (or even adequate) set of binding rules on the financial health of a bank (or on the substance of the professional competence of bankers). Policymakers learnt the importance of giving supervisors sufficient room for subjective discretion in decision-making. There are other examples where carefully constrained regulatory discretion is clearly desirable, for example in determining the trigger for bank resolution, where a strict rule-based trigger could prove counterproductive. At the same time, full discretion is also not

[95] See Joint Committee of the ESAs (2013).

[96] Based on a 2012 EIOPA study of 112 responding institutions, the overall size of the collateral upgrade transaction market is low, but varies much across the EU. In the survey, the notional value was about 3 % of total balance sheet assets.

desirable, as it can lead to legal and market uncertainties and potential divergences in implementation and application of the rules by different national regulators (see also section 7.9).

Clearly, **cooperation between regulators and supervisors, across borders and across sectors, is an important prerequisite to any attempt to suppress supervisory arbitrage.** The harmonisation of EU rules, including the single rulebook and the establishment of the ESAs with their mandate for contributing to supervisory convergence should help subdue supervisory arbitrage opportunities within the single market. Furthermore, the establishment of a single supervisor (ECB) as part of the SSM is a step change for Member States participating in the Banking Union that will ensure the consistent and objective application of the regulatory framework for the prudential supervision of banks.

However, **opportunities for supervisory arbitrage may still be apparent as long as the single market for financial services remains incomplete** and national discretion in decision-making exists. The aim is not necessarily for a full rule book and no discretion. National supervisors are likely to have more expertise on their specific financial sectors, and so will always play a fundamental rule. Indeed, the design of the SSM was calibrated to utilise the local in-depth knowledge of national regulators. The ECB will focus on the most significant institutions, while national supervisors will, under the general guidance of the ECB, be in charge for the day to day supervision of less significant institutions.

The Commission recognises the need for both discretion and rules in the reforms, and has tried to strike a balance between providing clarity and consistency, without choking financial innovation and impinging on the freedoms on which the EU Treaties are established (e.g. to locate or conduct business anywhere in the EU).

Potential for risks to be shifted to less regulated parts of the financial system

The regulatory reforms have aimed to directly address key failings identified in the financial system as a result of the financial crisis. The measures have necessarily focused on fixing risks in specific segments of the financial system. There is a danger that in pursuit of the reduction of overall systemic risks new risks may be created in other parts of the system.

In particular, the regulations in response to the recent crisis have tended to focus more on the formal banking sector, rather than the non-bank credit intermediaries (some of which are part of the "shadow banking" sector). For example, **imposing tighter regulatory requirements on banks may incentivise the migration of some activities out of the banking sector altogether towards non-bank credit intermediaries.** However, this should not be interpreted as an adverse development per se. Rather, a move of finance towards non-banks reflects a move away from bank-based towards market-based finance and thereby helps diversify the funding opportunities for European businesses. Of course, it can also bring risks, especially if regulators and supervisors lack information about "shadow banking" activities and have fewer tools to effectively monitor risk and intervene as required.

However, this does not so much constitute an argument against tighter banking regulation. Rather, it highlights **the importance of strong oversight and adequate**

supervision on all parts of the financial system and, where required, stronger rules and supervision for the shadow banking sector. As discussed in section 4.4, work in the area of shadow banking continues at EU and international level.

7.2 CONCENTRATION OF RISKS IN CENTRAL COUNTERPARTIES

Robust financial market infrastructures make an essential contribution to financial stability by reducing what could otherwise be a major source of systemic risk. As explained in chapter 4.3, CCPs will become a critical market infrastructure of the new financial system. As part of the move to CCP clearing of derivative contracts, counterparty risks will shift from banks (and other relevant financial entities) to CCPs. It is therefore important that CCPs do not themselves become a source of systemic risk.[97]

CCPs were not originally designed as macro-prudential institutions with a responsibility of improving the safety and soundness of the broader financial system[98]. However, as the derivatives markets grew, some CCPs have become sufficiently large and interconnected to be systemically important. This systemic importance is likely to increase as a result of EMIR mandating the central clearing of OTC derivatives contracts. The economies of scale (due to netting and diversification benefits) attached to central clearing favours the use of a small number of large CCPs. The financial resources of CCPs are not unlimited. One sufficiently severe shock (or a collection of multiple defaults of clearing members) could potentially threaten their solvency. Their financial soundness is therefore essential to ensuring the stability of the entire financial system.

A CCP default would typically follow unforeseen losses as a result of simultaneous default of several of its members. The trigger could be either from a member's insolvency, or its insufficient liquidity to meet a margin (or delivery) settlement obligation. The subsequent knock-on effects could be quite far-reaching. ESRB (2013) suggests that the risk concentration within clearing members themselves would build up due to the need for indirect access to CCPs. In addition, the large banking groups tend to exhibit significant overlaps across many CCP memberships. Thus, a significant cross section of CCPs and their members could be affected by a globally systemic event. To address the potential contagion risks between CCPs as a result of interoperability arrangements, EMIR specifically requires CCPs to identify and manage the risks arising from such arrangements. It also provides for these arrangements to be assessed and approved by the competent authorities.

If the defaulter‘s margin with the CCP is insufficient to cover its obligation, the CCP would have to call upon other financial resources, including its equity and default fund and its ability to call on additional capital contributions by members. If all of these resources are exhausted as a result of the member default(s), the CCP would default on its obligations to other members and their clients. Failure of a large CCP would possibly result in spreading financial contagion, as all major financial institutions will be interconnected via direct and indirect linkages to CCPs.

[97] Much of the discussion in this section can be extended to other systemically important market infrastructrures.
[98] See Pirrong (2011).

As noted above, a CCP could also default due to a lack of liquidity. Just like other financial intermediaries, CCPs are potentially susceptible to 'runs' due to a loss of confidence in their solvency. This could create a liquidity shock for the CCP as it attempts to return collateral. For instance, in the event of a member default, the CCP is obligated to make a timely payment to those owed variation margin payments. This will require the CCP to liquidate the defaulter's collateral, and perhaps some of its own assets. The CCP may also attempt to borrow to meet its obligations. If such collateral sales and borrowings occur during stressed market conditions (which is when a large member default is most likely), the CCP may be unable to raise sufficient funds to meet its obligations in the short time available to do so.

Indeed, the nature of CCPs makes them most vulnerable to default in times when their resilience is most needed**.** The financial condition of the CCP is weakest at the time its financial obligations are greatest (i.e. they are susceptible to "wrong-way" risk).[99]

EMIR explicitly recognises this problem and requires that margin requirements, haircuts and collateral eligibility all take wrong-way risk explicitly into account. Wrong-way risk is also to be accounted for during CCP stress-testing exercises. EMIR also requires CCPs to maintain sufficient financial resources to protect against its members' default and to have in place approved default procedures to manage the orderly wind-down of a defaulting member's positions. Crucially, the CCP must be able to withstand the default of two of its largest clearing members.

However, even in this case the financial system remains exposed to significant tail risks, as long as there is no dedicated resolution regime for CCPs. The role that CCPs now play in enhancing financial stability makes it imperative to design a resolution mechanism to address the remote possibility of a CCP failure. The cessation of operations of a CCP would deprive market participants of some very basic functions, such as trade processing, thereby entailing shutdown of entire markets with knock-on effects. To prevent such an outcome, a flexible and efficient resolution mechanism for CCPs is required, and the Commission is already looking into this problem area as part of its **work on non-bank resolution**. This includes an ongoing dialogue with industry and international policymakers.

The central role that CCPs now play in increasing financial stability raises some concerns linked to the remote possibility of CCP failure. The cessation of operation of a CCP would deprive market participants of very basic functions such as trade processing, thereby entailing shutdown of entire markets, with knock-on effects even on markets not directly affected. To prevent such an outcome, CCPs require committed resources that cannot be used to satisfy obligations on derivatives contracts, but which are sufficient to permit the CCP to continue to undertake its operational (as opposed to risk-bearing) functions in the event of its inability to perform its contractual obligations and to allow for the transfer the positions of a defaulted CCP to solvent counterparties. The Commission announced in its work

[99] Wrong-way risk tends to be largest for the most senior component of payment 'waterfalls' and highly rated counterparties. Entities with these characteristics rarely fail, but their failure tends to occur concurrently with large asset price movements, thereby exacerbating market crises. Given that CCPs have attributes that make them vulnerable to wrong-way risk, this is a major concern.

programme 2014 that it would table a proposal for a resolution scheme for non-banks. Work is under preparation, taking into account developments at international level.

7.3 POTENTIAL RISKS IN COLLATERAL MARKETS

The general move to increased collateralisation of transactions was a logical consequence of the financial crisis and helped securing some stability in financial intermediation. Collateral reduces credit risk between market participants and supports market-based sources of credit to the economy (see Box 7.3.1). It is central to the functioning of OTC derivatives markets and the funding provided by the securities financing markets. Since market-based finance needs collateral to grow sustainably, its availability directly influences the supply of finance to European households and businesses.

This section examines the demand and supply of collateral to address concerns that have been raised about the potential scarcity of collateral in the system. As explained below, the evidence available suggests that there is no general shortage of collateral in the financial system, although some scarcity could emerge, which needs to be monitored. Rather than shortages in the stock of collateral, there may be bottlenecks as regards the flow (i.e. collateral "fluidity"). Any such potential bottlenecks appear to be mainly driven by factors other than regulation. Upcoming policy initiatives may contribute positively to alleviating such bottlenecks.

Box 7.3.1: **What is collateral and who uses it?**

For the purpose of this section, collateral is defined as a financial asset pledged as security to be forfeited in the event of a default. For example, a house typically serves as collateral for the bank mortgage loan used for its purchase. Collateral is held by one contracting party (the collateral holder) to provide cover against counterparty credit risk exposure taken in respect of another party (the collateral giver). In other words, the collateral serves to mitigate loss in case of a counterparty default, alleviating the problems related to both asymmetric information and moral hazard faced by the collateral holder.

Historically, collateral has mainly been used in the context of secured lending, repurchase agreements (repo) and exchange-listed derivatives. During the 1990s, the practice of secured OTC trading had become well established in foreign exchange (FX) margin trading and it was adapted for use with virtually all OTC derivative products. In 2012, in excess of USD 2.5 trillion (85 % of which in cash) were employed to secure OTC derivative counterparties. Finally, many central bank money market operations are also secured with collateral.

Assets considered to be 'safe' generally exhibit: (i) low credit and market risks; (ii) high market liquidity; (iii) limited inflation risks; (iv) low exchange rate risks; and (v) limited idiosyncratic risks. Whilst cash is often used as collateral, many other types of collateral exist, such as fixed income bonds (sovereign/corporate) and covered bonds; securitisation programmes and commercial paper; metals and commodities; equities and funds; and credit claims.

High-quality and liquid collateral plays a critical role in a wide range of financial transactions. Its steady income streams and ability to preserve portfolio values are key considerations in investors' portfolio decisions. As such, it is widely embedded in portfolio mandates and often acts as performance benchmarks. Yields on government bonds are reference rates for the pricing, hedging, and valuation of risky assets. While, in principle, any type of asset could be used as collateral in private repo transactions, liquid assets with high credit quality are preferred and therefore associated with lower secured funding costs. The bilateral repo market is structured around global dealer banks that, in part, reuse the received collateral to meet demand by other financial institutions and play a key role in liquidity provision.

The key collateral providers include hedge funds, broker-dealers and custodian banks. Collateral holders, in turn, count amongst them a wide range of market participants, including: central clearing counterparties (CCPs); banking institutions and central banks; and central securities depositories (CSDs); insurance companies, asset managers and pension funds; as well as prime-brokers and general clearing members.

The demand for collateral

The **importance of collateral has increased** significantly since the start of the financial crisis, which is mainly related to the shift in risk appetite of market participants and reduced trust in the financial system. Demand for collateral was boosted by the decline in unsecured money markets after the default of Lehman Brothers in September 2008. Before 2008, monetary and financial institutions were willing to lend to each other substantial amounts of money without any form of collateral, as mutual trust was high. Once the crisis hit, however, this mutual trust started to decline and financial institutions became more risk averse, especially when doubtful about their counterparties' financial health.[100] This caused transactions to shift towards the secured money market. As a result, market participants nowadays need more liquid high-quality assets for collateral purposes than in the past to attract funding in the private money markets.

The demand for high-quality liquid assets that can be used as collateral will increase further due to a number of regulatory reforms. In particular, the **OTC derivatives reforms (EMIR) are expected to significantly increase the demand for high-quality assets**, primarily through CCP initial margin requirements. Both parties to a centrally cleared derivatives transaction are subject to these requirements. A two-way margining regime with initial margin is also contained in the standards for bilaterally managed transactions, although this is likely to be subject to thresholds. The initial margin will have to be in the form of cash or high-quality assets and may be held in segregated accounts, which will facilitate monitoring and reduce the possibilities for rehypothecation. Several studies have assessed the impact of derivatives reforms on the demand for high-quality assets, suggesting that initial margin requirements for centrally cleared derivatives could add another EUR 0.1 to EUR 0.6 trillion at global level under normal market conditions.[101]

[100] See for example Levels and Capel (2012).

[101] A BIS study by Heller and Vause (2012) concluded that initial margin requirements of G14 dealers would amount only to a small proportion of their unencumbered assets, even if CCPs cleared all of their IRS or CDS positions. At the same time, BIS estimates of initial margin requirements for central clearing of non-dealer IRS and CDS positions were considerably greater, mainly reflecting the presumption that the degree of hedged positions is typically much lower in the portfolio of an end user of derivatives. BIS found that total initial margins would demand globally between USD 0.3 trillion and USD 1.2 trillion, depending on the assumed volatilities. A study by the BCBS and IOSCO estimated the total initial margin required to collateralise exposures from non-centrally cleared trades to be around EUR 0.7trillion (http://www.bis.org/publ/bcbs242.pdf). The CGFS (2013) estimates that the structural demand for HQA and other collateral assets could increase by combined EUR 1.3 trillion globally on account of initial margin requirements for bilaterally cleared OTC derivatives (EUR 0.7 trillion) and for centrally cleared derivatives (EUR 0.6 trillion). This additional collateral demand would be gradually phased in over a four-year period starting in 2015. Importantly, the margin requirements under EMIR apply to new trades only.

Although collateral segregation is not mandatory, it has implications for collateral availability, since segregated collateral cannot be re-used. The practice of collateral re-use, also known as rehypothecation, involves the re-pledging/re-delivery, sale, investment, or other contractually-permitted use of collateral received by a party. Securities lending activities and repos are prime examples of collateral rehypothecation. Institutional investors, such as pension funds, insurance companies and investment funds, lend out securities to offset custodians' fees and generate additional income on their portfolio holdings. In the same way, securities lending may also be employed by institutional investors to raise cash for meeting variation margin payments for derivatives trades requiring central clearing.

The liquidity rules for banks set out in the CRD IV package are also expected to have an effect on the demand for safe (liquid) assets. The ECB has concluded that a possible bank strategy to increase their LCR would be for them to rely more on central bank funding by posting non-high-quality liquid assets as collateral.[102] Based on a sample of 357 banks from 21 countries, representing about two-third of the European banking sector by total assets, EBA (2013)[103] estimates that, at the end of 2012, the LCR stood on average at 115 %, whilst the gross liquidity shortfall amounted to EUR 264 billion across all the banks (see also section 4.2). The estimated gross shortfall amounts to 0.8 % of the banks' total assets and represents just 1or 2 % of the EU high-quality liquid assets markets. Importantly, the EBA study also estimates that more than 80 % of the banks are already LCR-compliant for 2015, taking account of the gradual phasing-in of the rules until 2018. EBA (2013) also concludes that the 2013 recalibration has led to a significant softening of the LCR regulation.

Collateral supply

The total supply of high-quality liquid assets is expected to continue to outsize demand. ESMA (2014) recently estimated that although the flow of supply is slowing compared to 2012 (increase of EUR 701 billion), it is expected to increase further by EUR 464 billion in 2013 and a EUR 376 billion in 2014 due to additional issuance from EU sovereigns with high ratings, whereas the supply of quasi high-quality collateral decreased by EUR 41 billion in 2013.[104] No absolute shortage of collateral assets is expected, even if collateral is becoming scarcer. Estimates suggest that there is a **large enough stock of collateral in the system to satisfy the demand** stemming from market and regulatory changes.[105]

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[102] See ECB (2013). ECB. *Liquidity regulation and monetary policy implementation*, Monthly Bulletin, April 2013.

[103] EBA (2013). Report on impact assessment for liquidity measures under Article 509(1) of the CRR, European Banking Authority, 20 December 2013.

[104] See ESMA (2014), ESMA Report on Trends, Risks and Vulnerabilities, No. 1, 2014. Sovereign bonds issued by countries with a credit rating of BBB- or above serve as the proxy for high-quality collateral, whereas corporate and covered bonds rated AA- or above are used to estimate quasi high-quality collateral. The annual sovereign debt estimates for 2013 and 2014 are based on AMECO general government debt forecasts, whilst net issuance of quasi high-quality collateral is assumed to remain stable in 2014.

[105] See also Levels and Capel (2012) who conclude that there is unlikely to be any collateral scarcity in absolute terms (total supply in 2012 of EUR 8.3 trillion-EUR 9.8 trillion, total demand of EUR 4.5 trillion), but that high-quality liquid assets are becoming scarcer (comparing the forecasted increases in collateral demand (EUR 1.8 trillion) and collateral supply (EUR 0.7 trillion - EUR 0.9 trillion). Increased collateral scarcity will create pressure on the prices of high-quality assets, especially when

The most comprehensive study so far, drawn up by the Committee on the Global Financial System (CGFS, 2013) of the BIS, suggests that liquidity regulation and OTC margin requirements might ultimately boost demand for high-quality collateral by some USD 4 trillion over several years. That figure is much smaller than measures of global supply. The supply of AAA- and AA-rated government bonds, for example, has risen by over USD 11 trillion since 2007; the stock of non-cash collateral eligible for derivatives transactions is some USD 50 trillion; and the major central banks have transformed more than USD 4 trillion of collateral (some high quality, some less so) into the most liquid asset of all (central bank reserves) through their quantitative easing programmes.[106]

However, a separate issue is whether enough high quality collateral will always be readily available in place and time where it is needed.

Addressing potential collateral scarcity and lack of collateral fluidity

Private sector adjustments can ease the availability of collateral within a market. Any collateral shortages that occur will be reflected in price adjustments for any given level of high-quality asset supply. These price adjustments, in turn, induce market participants to raise the supply of such assets. Potential adjustments include broader eligibility criteria for collateral assets in private transactions, more efficient entity-level collateral management and increased collateral reuse and collateral transformation.

A scarcity of high-quality liquid assets generally prompts endogenous private sector responses, such as the observed higher retention rates of securitisations and covered bonds on bank balance sheets. Banks could expand their securities (collateral) lending activities to those institutions with a shortage of high-quality liquid assets. If banks themselves are short, they may turn to other financial market institutions, such as insurance companies and fund managers. Collateral transformation services and other forms of collateralised financing, including collateral swaps, can be also used to increase effective supply of high-quality liquid assets. In this arrangement, custodians or institutional investors provide such assets from their balance sheets through securities lending-type transactions to clients in exchange for lower-quality collateral (plus a fee).

While mitigating collateral scarcity, such collateral upgrade transactions or other endogenous private sector responses can come with associated costs and risks, such as greater interconnectedness in the financial system (see also section 7.1 above). More collateral transformation activity can lead to greater complexity in the system and greater maturity and funding risks (as collateral lending tends to be of shorter maturity than the transactions they are used for). They may also add to financial system opacity (as these transactions are bilateral in nature), as well as increase operational, funding and rollover risks. Any new collateral assets produced by private sector solutions may not prove to be as qualitatively liquid during periods of stress (as occurred during the recent crisis, when market confidence in the underlying assets of some securitisations collapsed and the entire securitisation market became illiquid, see also section 7.6).

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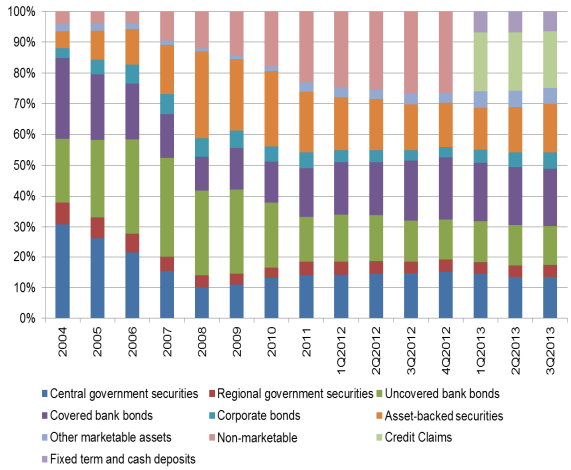
considering that many institutional investors now hold large portfolios of high-quality liquid assets on their balance sheet and that banks will demand more of those.

[106] See Hauser (2014).

When the price of high-quality assets rises, **financial institutions also have incentives to use these assets more efficiently**. Institutions that accept a range of collateral with fixed criteria are likely to be offered the cheapest eligible assets – known as the *'cheapest to deliver'* approach where the best quality assets are used in market transactions to reduce the related risk premia.[107] In practice, this means that especially central banks, via their market operations, will be confronted with a decreasing quality of collateral in times of market stress.

Chart 7.3.1: **Eurosystem collateral (% of total)**



Source: ECB
Notes: Collateral values are based on end of month averages over each time period after valuation and haircuts. Detailed breakdown of non-marketable assets is only available as of 2013.

Central banks can relax collateral constraints in the market by broadening the assets accepted as collateral. By broadening collateral acceptance when market participants require more or better collateral, central banks can have an important role in dampening the financial cycle. This has happened in the euro area, as is visible from chart 7.3.1. The share of non-marketable assets in Eurosystem refinancing operations increased from 4 % of the total in 2006 to 26.5 % in 2012. Sovereign bonds represent only a small fraction of the collateral delivered to the Eurosystem. Non-marketable credit claims and covered bonds both exceed their share, with asset-backed securities and unsecured bank bonds being of comparable magnitude.

There are other possible public (and private) sector responses to improve collateral fluidity, with a strong role to play for central banks. As an example, the impending **Target2 Securities (T2S) initiative should unlock European collateral flows** (see Box 7.3.2).

Another enhancement that should improve collateral fluidity is the abolishment of the repatriation requirement in the Eurosystem's Correspondent Central Banking Model (CCBM), expected in 2014.[108] The removal of this requirement will facilitate the use of a combination between CCBM and cross-border securities transfer between two settlement systems. It will also facilitate tri-party collateral management services on a cross-border basis via CCBM and will enable the use of euro-denominated collateral issued in non-euro area countries.

[107] It is also worth noting that the cheapest to deliver collateral in a low interest rate environment is often cash.

[108] Eurosystem counterparties and participants in the Eurosystem's Target2 real-time gross settlement system can only obtain credit from their home central bank. CCBM enables them to use eligible marketable assets issued (i.e. registered or deposited) in other euro area countries as collateral. In line with the repatriation requirement in CCBM operations, assets have to be moved from the investor securities settlement systems to those of the issuer.

Overall, collateral markets need to be closely monitored and the emergence of any new risks promptly analysed. Markets are already adjusting to possible tensions between collateral demand and supply. Extended phasing-in periods granted in the relevant regulations will give market participants time to adjust and ease the pressures on collateral markets resulting from regulations. In addition, if needed, central banks can relax (and already have relaxed) eligibility rules on collateral – by absorbing lower quality securities to free up better ones to the market. There is a need for ongoing review and for considering whether additional policy levers may be helpful going forward.

Box 7.3.2: **TARGET2 Securities (T2S)**

T2S aims at creating a single securities settlement engine in Europe, eliminating differences between domestic and cross-border settlement. It is the Eurosystem's main contribution towards the creation of an integrated post- trade market infrastructure in the EU. T2S will provide CSDs with a centralised service for delivery-versus-payment (DvP) settlement of securities transactions in central bank money at low and standardised cost, irrespective of whether transactions are settled nationally or across borders. DvP settlement will reduce counterparty risk, whilst the use of central bank money will eliminate settlement agent risk. T2S, in conjunction with the CSDR, will also introduce harmonised rules and standards to domestic and cross-border transactions.

T2S is conceived as a multicurrency system that will extend beyond the euro area, enabling other central banks to connect with their currencies. T2S will integrate into a single IT platform both market participants' securities accounts and their dedicated central bank cash accounts held with the respective national central bank. It will also effectively provide a single collateral pool and incorporate several features that aim at helping banks to optimise their liquidity and collateral management. Migration to T2S is expected to be completed by February 2017.

Chart 1 **The current landscape of EU settlement**

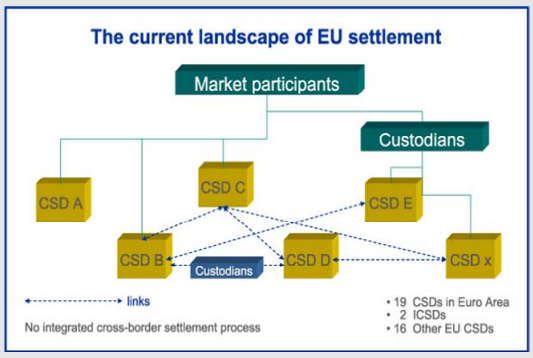
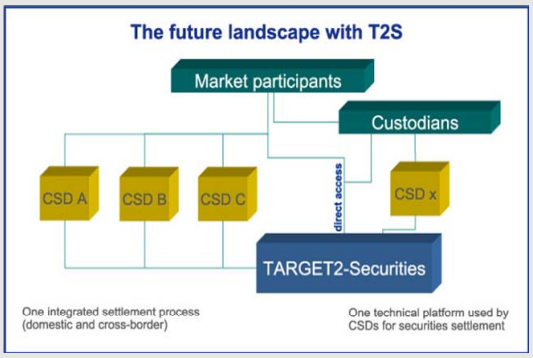


Chart 2 **The future landscape with T2S**



Source: ECB

Today, investors with diversified portfolios hold their securities, typically through custodians, with different national CSDs (Chart 1). This is because the collateral lies within those CSDs. The cross-CSD settlement, involving an investor holding securities with a single CSD which then acts as an investor CSD in other markets, is inefficient and costly. Although there has been some pooling of securities amongst international CSDs (ICSDs) and global custodians, the amounts are limited and settlement can only take place in commercial bank money, not central bank money. As a result of this fragmented environment, banks usually need to hold significant excess collateral, because they cannot reuse surplus collateral if they have a long position in a settlement system. At the same time, they need to maintain a precautionary buffer of collateral and liquidity for days when they will be short in this market.

T2S will abolish this need for market participants to hold multiple buffers of collateral and liquidity when settling in several European markets (Chart 2). T2S will make it possible for banks to have a single buffer for the entirety of their European business. A single pool of assets and liquidity will automatically net short and long positions in various markets, thus generating significant collateral savings. Banks and intermediaries will be able to manage their collateral much more efficiently, optimise their funding costs and avoid failed deliveries.

In addition, T2S will put into mainstream a market feature that is so far available only in a very few European countries: namely, the central bank auto-collateralisation mechanism, which allows the buyer of securities to use central bank eligible debt securities as collateral to obtain central bank intraday credit to pay for the securities being bought (auto-collateralisation on flow). It will also be possible for the buyer to use an earmarked stock of securities as collateral to obtain central bank intraday credit to buy assets, which may not be central bank eligible collateral (so-called client collateralisation).

The auto-collateralisation feature in T2S will significantly reduce the need for pre-funding of cash accounts, both for daytime settlement and, in particular, for night-time settlement. Furthermore, because the securities being bought can be used immediately as collateral, it will release for alternative use a large amount of collateral on stock that is normally needed as a buffer.

7.4 ASSET ENCUMBRANCE

A related area of concern is the encumbrance of assets in banks' balance sheets. As noted in section 7.3, banks have increasingly resorted to secured funding in the wake of the financial crisis and as unsecured funding has become more expensive and generally scarce, while investors have increasingly preferred secured assets in order to mitigate heightened counterparty credit risk.[109] An increase in secured funding implies an increase in banks' assets that are "encumbered" – i.e. pledged with priority to investors in the banks' secured debt.[110] The encumbered assets therefore are not available to unsecured creditors in the event of a bank's insolvency, as they are structurally subordinated to secured creditors. Derivatives also lead to asset encumbrance, as collateral is posted to meet initial and variation margins to limit counterparty risk.

Prudential rules may add to the incidence of asset encumbrance. For example, secured funding in the form of covered bonds is given a favourable treatment in the calculation of banks' capital requirements for covered bonds and for exposures in covered bonds. Covered bonds will also become more attractive for meeting the liquidity rules under the CRD IV package, and such bonds receive favourable treatment under Solvency II. Combined with the increased collateral requirements of the OTC derivative reforms, this could result in greater asset encumbrance of banks' balance sheets. A further source of increased asset encumbrance is the provision of central bank liquidity on a secured basis, where banks pledge collateral to access the liquidity facilities.

There is only limited publicly available data on the level of asset encumbrance of banks. The ESRB has calculated that the median asset encumbrance of 28 large European banks (measured as the ratio of encumbered assets to total assets, with repos netted against reverse repos) increased from 7 % in 2007 to 27 % by 2011, although

[109] Long-term secured funding is typically in the form of collateralised mortgage debt. Two types of instruments are common. The first type consists of covered bonds, which remain on the issuing bank balance sheet and add to asset encumbrance. The second type relates to RMBS, which are generally off-balance sheet instruments. RMBS affect encumbrance only to the extent that issuing banks provide implicit or explicit guarantees, or retain the RMBS on their own balance sheet. For short term secured funding, repurchase arrangements (repos) are the most common instruments. These instruments play an important role in secured funding markets, including central bank liquidity provision. Repo positions are often offset through reverse repos, reducing the net contribution to asset encumbrance levels.

[110] The CRD IV package states that an asset is considered encumbered if it has been pledged or if it is subject to any form of arrangement to secure, collateralise or credit enhance any transaction from which it cannot be freely withdrawn.

the degree of asset encumbrance varies very widely, even within Europe, between countries and between institutions. The Committee of Global Financial Supervisors (CGFS, 2013) estimates the median asset encumbrance ratio for a sample of 60 large European banks to be 28.5 %.

While much of the rise in secured funding and collateralisation is likely to come from the aftermath of the financial crisis and not from prudential regulation, increased levels of asset encumbrance raise policy concerns for a number of reasons.[111] In particular, increased asset encumbrance can generate conflicts with the objectives of bail-in and depositor preference if fewer unsecured liabilities are available to bail in at the point of bank failure. It may also put more pressure on the potential liabilities of DGS funds, constrain access to unsecured funding, and lead to pro-cyclicality.

Asset encumbrance reduces the assets available to the liquidator in the event of a default of a bank and therefore the recovery rate of unsecured bank creditors. Even if depositors (and the DGS) are given a preferential status in insolvency proceedings compared to unsecured creditors, high asset encumbrance reduces the assets available to satisfy their claims against the failed bank. The risk to unsecured investors of increased asset encumbrance may make long-term unsecured debt more expensive for banks to issue, which may limit the quantity of these assets available for bail-ins under the new recovery and resolution regime (BRRD) and, in the extreme, may expose taxpayers to the cost of rescuing failing banks.

Assets available to meet claims of unsecured creditors can decline quickly, particularly under stressed market conditions. In addition, the lack of hard data on asset encumbrance may reinforce the uncertainty among unsecured debt investors. Increasing issuance of secured debt can also impede access to unsecured funding. As the investment risk for unsecured creditors rises with the level of asset encumbrance, they may demand higher interest rate payments. As could be observed recently, a rise in the cost of unsecured debt reinforces banks' reliance on secured funding, thereby raising asset encumbrance further. Beyond a certain threshold level of asset encumbrance, and in the absence of other risk mitigation tools, banks may find it increasingly difficult to retain access to unsecured funding markets.[112]

Asset encumbrance therefore warrants close monitoring. In addition, there is a need for greater transparency on asset encumbrance, also to ensure that unsecured creditors can more accurately assess the risk posed to their recovery rate by asset encumbrance.[113] Furthermore, any increase in asset encumbrance raises residual risks for DGS. Whereas EU eligible deposits will enjoy seniority over unsecured debt, as

[111] See Houben (2013) and Committee of Global Financial Supervisors (2013) for further explanations of asset encumbrance and its potential consequences.

[112] However, when asset encumbrance increases, unsecured creditors should in principle demand a higher rate of return, so if prices for secured and unsecured financing are able to adjust, there is no reason why it should come to the point of no demand from unsecured creditors. They would simply accept the higher risk for higher returns.

[113] While the general regulatory response has been to enhance the monitoring of asset encumbrance and impose requirements on banks to be more transparent in their reporting, some countries impose prudential limits on the issuance of covered bonds in order to contain asset encumbrance. For example, as summarised in Houben (2013), countries such as Australia, Canada and Singapore apply strict ceilings for the amount of covered funding or covered bonds'; in the Netherlands, Norway and the United Kingdom a case‑by‑case approach is used that sets threshold values for covered bond issues per institution.

per BRRD (see section 4.2), they could still remain vulnerable in case of an insufficient unsecured debt buffer. To this effect, the BRRD mandates the resolution authorities to require banks to hold a specific amount of own funds and subordinated and senior liabilities subject to the bail-in tool, with the explicit goal of avoiding that the latter is rendered ineffective. Besides, banks and prudential supervisors perform regular stress tests that evaluate encumbrance levels in periods of market stress.

Current asset encumbrance levels can be expected to fall somewhat going forward, as and when the economic and financial environment in the EU improves and stability in the financial system is restored. For unsecured debt to regain its status in bank funding markets, confidence and trust in the banking system as a whole and in individual institutions will have to be strengthened first. The current asset quality review exercise by the ECB is expected to provide a solid contribution towards this goal.[114] Moreover, as the financial regulatory reforms take effect and banks become more resilient, their credit worthiness is enhanced, which is likely to give more comfort to unsecured creditors.

Against the background of recent episodes of contingent convertible bond issues, there does not seem to be evidence that the new bail-in regime could be at fault in the lack of revival in the unsecured debt markets. Even if the reversal to pre-crisis levels of unsecured issuance are unlikely (and would be undesirable if the debt continued to be underpriced in the market) and there is a structurally higher demand for secured lending going forward, unsecured debt markets can be expected to pick up again as risk aversion abates and the price of secured funding relative to unsecured funding rises. The eventual unwinding of the ECB balance sheet could also be expected to contribute to the latter phenomenon.

7.5 DISORDERLY BANK DELEVERAGING

Whilst the financial crisis has emphasised the need for the EU banking system to deleverage, it is important to recognise that this process could entail risks if it occurs in a disorderly manner.[115] As already noted in section 6.4, bank deleveraging is a necessary process to correct the excess leverage built up pre-crisis and to put the banking sector back on a more stable footing. Banks have various options in which to deleverage, and this process does not necessarily have to hamper lending to the economy. However, a relatively fast and disorderly process of deleveraging ("bad" deleveraging) runs the risk of damaging economic activity.

Sharp cut backs in bank lending within a short period of time can harm the flow of credit to businesses, in particular SMEs due to their dependence on banking lending as a main source of finance. It can also harm the flow of credit for the financing of international trade, considering that European banks are a major supplier of such credit on a global scale. However, while sharp or disorderly deleveraging would significantly restrict bank lending (and can currently not be observed in Europe), a slow and unconvincing process of deleveraging may undermine market confidence and hinder the return to financial stability.

[114] https://www.ecb.europa.eu/pub/pdf/other/notecomprehensiveassessment201310en.pdf

[115] For an assessment of deleveraging and other potential risks in the European banking system, see also EBA (2013).

Policymakers need to tread a fine line between encouraging balance sheet repair at the financial institution level, whilst minimising the potential implications of disorderly deleveraging of the banking system as a whole at the macro-economic level. Caruana (2012) provides an overview of the challenges facing policymakers in a balance sheet recession. Historically, prompt and thorough balance sheet repair has proved to be the best way to restore post-crisis growth and stability. This is the lesson of the Nordic banking crisis in the early 1990s, and also the lessons from Japan's experience. The main challenge for policymakers is to prevent a balance sheet recession leading to protracted weakness. Policymakers need to devise policies that ease the required balance sheet adjustments without setting off destabilising dynamics.[116]

The IMF GFSR (2013) assessed the dilemma of the need to deleverage against the current macroeconomic situation in the European economy. It noted that if policy challenges are properly managed, and if reforms are implemented as promised, the transition towards greater financial stability should prove smooth and provide a more robust platform for financial sector activity and economic growth. However, the IMF also cautioned that a failure to implement the reforms necessary to address the problems identified in the crisis could trigger profound spill-overs across regions and potentially derail the smooth transition to greater stability.

In the EU, bank deleveraging (and in particular the direct causation from financial regulations) has not obviously constrained credit. While credit is falling during an economic downturn and it is difficult to disentangle the supply and demand effects, demand factors seem to have played a major role (see also section 6.4). Additionally, the issuance of debt securities has partly compensated for the decline in bank lending in aggregate terms, although this type of financing is not available for all non-financial companies in the same way.

Nevertheless, the European Commission's 2013 Autumn forecast[117] provided some warnings. It noted that although bank funding conditions have generally improved, access to longer-term funding at sustainable cost remains a challenge for several small euro-area banks, in particular in Member States that remain under intense market scrutiny due to lingering concerns about fiscal sustainability. Moreover, banks that find it difficult to improve their capital position (for example by retaining earnings or raising capital on financial markets) may still be reluctant to extend credit to the private sector. Banks have also tended to focus their deleveraging efforts on cross-border activity and to ring-fence their domestic business.

The EU financial regulation agenda has been mindful of the risk of disorderly deleveraging. As set out in Chapter 6, longer phasing-in periods have been adopted to allow the necessary deleveraging process and strengthening of bank balance sheets to be a smooth process that does not hamper the economic recovery. The process of bank deleveraging is subject to ongoing monitoring, e.g. at EU level by the EBA.

[116] Co-ordinated policy initiatives can help to ease this problem. For example, the Vienna initiative has helped ease risks of disorderly deleveraging in central, eastern and south-eastern Europe. See also section 6.4.1.

[117] http://ec.europa.eu/economy_finance/publications/european_economy/2013/pdf/ee7_en.pdf

7.6 DEVELOPMENTS IN SECURITISATION MARKETS

Concerns have been raised that prudential regulation may be hindering securitisation activities and thereby impede a potentially important source of finance to the economy. The sharp decline in securitisation following the crisis cannot be attributed to regulatory reforms. On the contrary, tighter regulation was needed to address the failures in the market. A separate question is whether and what policy measures can be taken to facilitate the recovery of sustainable and safe securitisation markets with a view to unlocking additional funding sources for the economy.

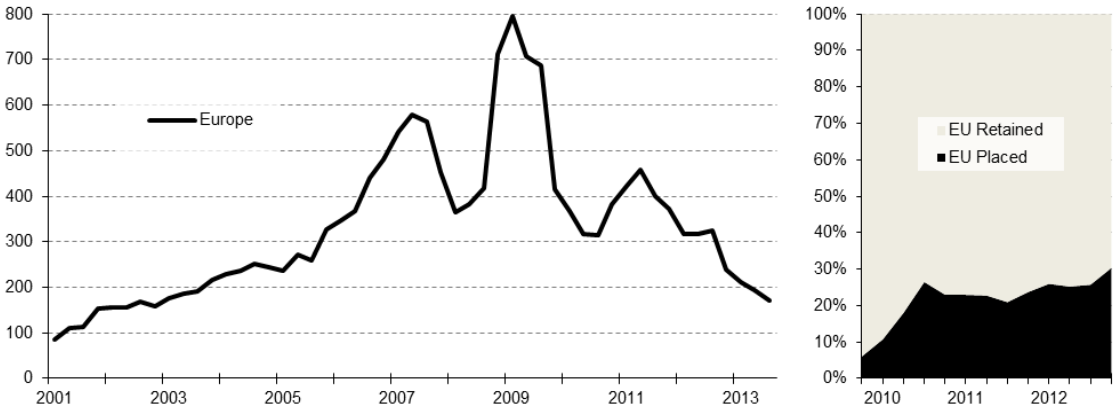
Some of the "originate to distribute" models, which were in particularly present in the US markets, have proved to be clearly inadequate to ensure sound and stable securitisation markets and contributed to the subprime crisis.[118] The weaknesses of these models have been identified early on and addressed through EU financial reforms. Risk retention ("skin-in-the-game") requirements have been in place in the EU banking sector since 2011 and have been widened to all financial sectors. In addition, disclosure obligations have been reinforced to allow investors to develop a thorough understanding of the instruments in which they invest.

However, since 2008, no substantial recovery of these markets has been observed, and activity remains quite limited. **Since the start of the crisis, there has been a sharp fall in the issuance of securitised products in the EU.** Chart 7.6.1 illustrates that the peak of annual issuance of securitised products was reached in Q1 of 2009 with almost EUR 800 billion. In Q3 of 2013 it had dropped to 2002 levels again of EUR 170 billion. Roughly 70 % to 75 % of the issuance is retained on the balance sheet or used for repo, whereas the remainder is placed with investors.[119]

[118] It is worth noting that the performance of US securitised products during the crisis was considerably different to that in the EU, where much lower actual (and expected) losses have appeared. For example, see: Standard & Poor's, "Transition Study: Less Than 1.5% Of European Structured Finance Has Defaulted Since Mid-2007", 11 June 2013. Moody's Investors Service, "Structured Finance Rating Transitions: 1983-2013", 7 June 2013. Fitch Ratings, "The Credit Crisis Four Years On … Structured Finance Research Compendium", June 2012, "EMEA Structured Finance Losses", August 2011.

[119] The total outstanding amount has peaked at EUR 2.25 trillion in 2009, but has dropped to somewhat more than EUR 1.5 trillion in 2013 (Q3). RMBS make up 60 % of outstanding securitised notes.

Chart 7.6.1**: European securitisation issuance 2000-13 (EUR m)**



Notes: Left panel shows annual issuance of securitised products in Europe; right panel shows breakdown of issuance by retention.
Source: AFME, as processed by the Commission Services.

In the current economic environment in Europe, securitisation could constitute an important instrument to finance the economy and help economic recovery, provided that appropriate safeguards are in place.[120] Stakeholders and public authorities have actively supported the need to foster the recovery of safe and sustainable securitisation markets in Europe. The use of securitisation to facilitate SME financing has received particular attention in this regard (see Box 7.6.1). The Commission is following this development with interest, as already indicated in its Green Paper on long-term financing, published in March 2013.[121]

Box 7.6.1: **Developing SME finance through securitisation**

The development of financing SMEs through securitisation brings unique challenges – separate from those related to the reforms - that need to be addressed first before the market can develop. There are specific asset-class characteristics which had prevented the market for securitising SME loans from really taking off even when almost all other types of loans and receivables (e.g. auto leases, student loans, and credit cards) were being securitised in size. The granularity of the underlying asset pool is crucial to the tranching exercise, and relatively chunkier SME loans entail higher idiosyncratic risk which can result in quick credit enhancement depletion and senior tranches being hit after just a small number of individual defaults. The average tenor of SME loans tends to be around 4-5 years in most jurisdictions (if not shorter), which compared to around 20-25 years for mortgages could make them a less desirable investment for investors such as pensions funds and insurance companies with long-dated liabilities to match against. For these reasons, aside from any recent regulatory hurdles, there are other challenges to the growth in the SME securitisation market.

At this stage, it is not clear whether the reforms are having a particular impact on SME loan based securitisations. There does not appear to be any significant evidence yet to suggest that either the CRD IV package or Solvency II reforms have directly hampered SME financing through securitisation. With respect to Solvency II, the duration mismatch issue of SME loans are likely to make them less attractive to insurance companies in any event, irrespective of Solvency II changes. Furthermore, insurance companies are not the only players on the "buy side" in these markets. Market insights suggest insurance companies now only hold about 15 % of the European RMBS market (a market

[120] There are a few studies on the impact of securitisation on credit market conditions and credit availability. For example, NERA (2009) study shows that a 10 % increase in securitisation rate can result in: a reduction of 15 bps in mortgage yield spreads; a decrease in yield spreads for car loans of between 22 to 64 bps; and a decrease in yield spreads for credit card loans of between 8 to 54 bps.
[121] COM/2013/0150 final.

which is likely to provide less of a maturity mismatch for insurance companies than SME securitised loans), so any future market is unlikely to be only dependent on insurance companies.

As regards regulation, the prudential framework for banks is a risk-based system whereby the more risky an asset the more capital the bank needs to hold against it (see Chapter 4.2 for more detail). In some cases the reform agenda may have penalised higher quality and safer securitised products compared to other similar forms of financing.[122] Although there seems to be a widespread acceptance for a required increase in capital requirements on securitised products, there is a more open debate amongst stakeholders about the appropriate level of capital. The BCBS is currently carrying out a substantial review of these measures, along with an impact assessment, in order to address some of the shortcomings revealed by the crisis and enhance the risk sensitivity of capital requirements. In this debate, it should also be kept in mind that the European banking sector traditionally refinances a significant amount of their residential assets thanks to covered bonds which benefit from a more favourable treatment under the CRD IV package. This can provide an alternative option for banks wanting to fund through secured financing, but may not help efforts to diversify sources of financing in the EU.

In terms of the impact of reforms on the "buy side", prudential requirements for insurance companies (within Solvency II) also play a role. Industry representatives have been arguing that the calibration for standardised risk-weights on securitised products is too high, especially when compared to other assets. This could in turn make it less attractive for insurance companies to buy securitised products, relative to other investments, as they would be required to hold more capital against it under Solvency II. However, the calibration of securitisation is being reviewed in the Solvency II framework based on the latest technical advice from EIOPA from December 2013. [123]

Whilst some reforms may have hampered securitisation markets, others have supported them, including for example the risk retention requirements or those enhancing transparency. In the EU, measures have been taken to ensure that the interests of the persons initiating securitisation transactions are firmly aligned with those of the end-investors. This evolution is essential to restore investors' confidence. Credit institutions are now obliged to check that the originator or sponsor institution of a transaction has an economic interest equivalent to at least 5 % of the securitised assets.[124] Requirements similar to those set out in bank capital regulation are laid down for insurance companies (Solvency II), alternative investment fund managers (AIFMD) and UCITS. The European regulatory framework is in line with the recommendations issued on 16 November 2012 by the International Organization of Securities Commissions (IOSCO).[125]

[122] See Mersch (2013), IOSCO (2012), and Joint Paper by the ECB and Bank of England (2014).

[123] The advice includes a differentiated treatment for "high-quality" and other securitisations and significantly reduced risk factors for the high-quality category (see below).

[124] The requirement applies since the entry into force of CRD II at the end of 2010. See Directive 2009/111/EC of the European Parliament and of the Council of 16 September 2009 amending Directives 2006/48/EC, 2006/49/EC and 2007/64/EC as regards banks affiliated to central institutions, certain own funds items, large exposures, supervisory arrangements, and crisis management (OJ L 302 17.11.2009 p.97)

[125] See http://www.iosco.org/library/pubdocs/pdf/IOSCOPD394.pdf.

Other reform measures are reducing information difficulties, through greater levels of transparency. The CRA regulations will notably require the issuer, the originator and the sponsor of a structured finance instrument established in the EU to jointly publish detailed information on all structured finance instruments on the website set up by ESMA. The main objectives are to enable investors to make informed assessments and to reduce their dependence on credit ratings. In addition, other initiatives led by the ECB and Bank of England on collateral and labelling initiatives taken by industry also aim to allow supervisors to better monitor risks and enable investors to better analyse risks.

The Commission set out in its recent Communication on long-term financing a number of actions to progress with securitisations going forward.[126] For example, one way to foster the development of sustainable securitisation markets could be to develop an operational distinction between "high-quality" and "other" securitisation markets, as long as this is prudentially sound. This may help to alleviate stigma on these products and constitute a first step before considering a potential differential prudential treatment for safer instruments. In response to a request from the Commission, an approach identifying “high quality” securitisations has been advocated in the insurance sector by EIOPA in December 2013.[127] A detailed list of criteria has been proposed related to i) structural features, ii) underlying assets and related collateral characteristics, iii) listing and transparency features and iv) underwriting processes.

With respect to the banking sector, the Commission asked the EBA for advice, inter alia, to assess the appropriateness of ensuring a preferential treatment for "high-quality" securitisations. In addition, the Commission's proposal on bank structural reform differentiates between "sound, simple and transparent" and "other" types of securitisations. Supervisors would have to review trading activities to be separated in trading entities, but core credit institutions would still be allowed to invest in or sponsor sound, simple and transparent types of securitisation.

At international level, a new working group has been established by IOSCO and BCBS. The group's mandate includes the need to develop criteria that identify and assist in the development of simple, transparent and high-quality securitisation structures, with a view to promoting diverse and reliable sources of market-based finance. Finally, the Commission will also work with standard setters to develop and implement international standards especially on rules on risk retention, high quality standardisation and transparency to ensure consistency and avoid regulatory arbitrage.

7.7 IMPACT ON COMPETITION

As set out in chapter 4.8, the financial regulation agenda helps improve the competitive functioning of the market in different ways: e.g. by opening access to market infrastructures; promoting entry to other markets; facilitating market exit with new resolution regimes; reducing implicit subsidies; and reducing information asymmetries. However, there could also be unintended effects from the reforms that limit competition.

[126] See communication on long-term financing of the European economy, COM(2014) 168 final

[127] http://eiopa.europa.eu/fileadmin/tx_dam/files/publications/reports/EIOPA_Technical_Report_on_Standard_Formula_Design_and_Calibration_for_certain_Long-Term_Investments__2_.pdf

Firstly, there is a risk that the rules will increase barriers to entry for market entrants. Regulations tend to pose a disproportionate burden on smaller players in the market and new entrants, which can make it harder for them to compete with more established players. However, as noted in chapter 4.8, the reform agenda seeks to reduce this effect by introducing waivers or exemptions from rules for smaller institutions in the market or, conversely, imposing additional requirements on the largest institutions.

Secondly, the rules may incentivise firms to focus more on core activities, encouraging them to sell-off non-core businesses, which in turn may reduce the number of providers for some financial services. As the cost of doing business becomes more expensive, it may be in the interest of financial institutions to either leave the relevant market or sell off parts of the business in which the relevant institutions are less profitable – focusing instead only on their "core" business. Other market incumbents may then take on the additional business. Firms could become increasingly specialised – which can be good for efficiency - but also larger, which could lead to less competition. For example, the structural bank reform proposals would ban the activity of propriety trading for deposit-taking banks. Any bank with a propriety trading desk will have to either close down or sell off its propriety trading desk. A large established investment firm may want to buy these operations to increase the scale of its operations. Structural separation could trigger some financial institutions to specialise their functions, rather than engage in a diversity of operations. On the other hand, structural reform may enhance competition by requiring the large banks to sell off (or subsidiarise) certain trading activities. This in turn may open the market to other providers, encouraging a diversity of institutions.

Another example relates to financial market infrastructures. Here, there also tend to be significant economies of scale, so that consolidation can enhance market efficiency. A number of infrastructure providers have recently merged, or expressed interests in mergers to realise these benefits. In addition to possible financial stability risks, the authorities will need to watch the implications for competition and potential risks of abuses of dominant positions of firms in the market. In markets with players, the risks of abusive practices (e.g. excessive pricing) can often be higher. As set out in chapter 4.8, the access provisions contained in the relevant legislations (MiFID II, EMIR and CSDR) seek to enhance competition along the trading chain. Also, at EU level, the Commission is watching these developments closely, preventing mergers where needed.[128]

More generally, there is a risk that scalability leads to financial institutions becoming more concentrated within given markets. [129] Increased concentration of financial institutions can impact on competition in at least two ways: first, by potentially

[128] This was the case in the proposed merger between Deutsche Börse and NYSE Euronext. The analysis indicated that the merged entity would have held 90 % of the share in worldwide market for European financial derivatives traded on exchanges. It was therefore concluded that the proposed merger would have eliminated global competition and created a quasi-monopoly in a number of asset classes, leading to significant harm to derivatives users and the European economy as a whole. Commission decision - http://ec.europa.eu/competition/mergers/cases/decisions/m6166_20120201_20610_2711467_EN.pdf

[129] A more detailed assessment of the competition of financial markets is beyond the scope of this report. However, it may be useful to have more market investigations in the future to ensure the legislation is having its intended effect.

increasing the market power of existing firms and second, it can entrench the advantages that systemically important financial institutions gain from being 'too-big-to-fail'. The EU state aid regime, as well as the resolution framework with tougher bail-in rules and structural bank reform, will stand against this tension.

Some have argued that there may be a trade-off between competition and stability, that regulation aimed at enhancing financial stability may hinder competition, and that increased competition may in fact increase the risk and cost of financial crisis.[130] However, neither economic theory nor the evidence suggest that measures to improve financial stability need to hamper competition.[131] The instances where competition is likely to be bad for financial stability are when the incentives of financial intermediaries are not aligned with the public interest and this leads to excessive risk-taking. This is what regulatory intervention aims to correct. Restrictions to competition would not address the underlying problems of excessive risk-taking. Rather, they could have a negative effect on efficiency without improving the resilience of financial institutions.

Instead, the challenge is to design a regulatory framework that improves financial intermediaries' risk-taking incentives and thereby allows financial stability to be achieved without compromising on competition and resulting efficiency benefits. As explained in chapter 4.8, **the financial reform agenda includes measures that aim at enhancing financial stability while at the same time improving the competitive functioning of the market.**

An indicator to watch is the diversity of financial agents in the financial system. It has been argued that the new rules tend to incentivise banks to become smaller and more similar, and that banks will be encouraged to focus on certain types of activities rather than others. Smaller banks can be easier to resolve, and simpler products are easier for consumers and investors to understand in terms of levels of risk. However, caution needs to be taken with making the system too homogenous. Diversity in the financial sector is important for a number of reasons. In the limit, when all firms are the same, they take the same risks, and would then all take the same defensive actions when the risks materialise. This creates systemic risk to the financial system. The EU financial regulation agenda has therefore been mindful of the diversity objective.

Contrary to the claim that regulatory reform is reducing diversity, it should be noted that the pre-crisis system had in fact become more homogenous. As explained by Haldane and May (2011) *"in the run-up to the crisis and in the pursuit of diversification, banks' balance sheets and risk management systems became increasingly homogenous. For example, banks became increasingly reliant on wholesale funding on the liabilities side of the balance sheet; in structured credit on the assets side of their balance sheet; and managed the resulting risks using the same value-at-risk models. This desire for diversification was individually rational from a risk perspective. But it came at the expense of lower diversity across the system as whole, thereby increasing systemic risk. Homogeneity bred fragility."*

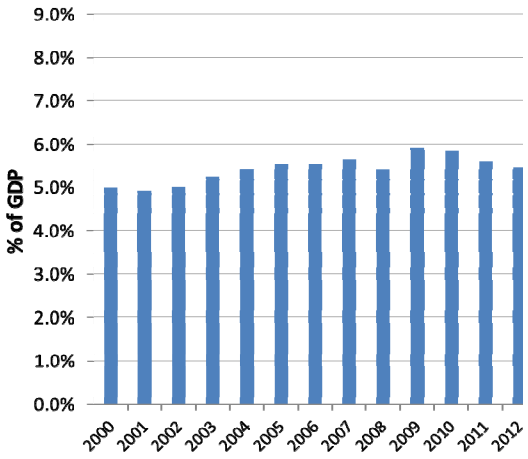
[130] The traditional argument (see Keeley (1990)) goes that increased competition may reduce profits and hence reduce bank resilience, and it may spur incentives for excessive risk-taking because foregone future profits in case of failure are lower.
[131] See OECD (2010) and Carletti and Hartmann (2002),

Finally, there may be a risk that the reform efforts to improve disclosure of information and increase the level of transparency in financial services could have unintended consequences on competition. There are some segments of financial markets that are operated by only a small number of market participants. In markets where there are a limited number of market players that are engaging with each other on a very frequent basis, there might be a risk of greater transparency leading to more collusive practices. If these market participants have full disclosure of the other market participants' positions and prices, it may be easier (and more tempting) to attempt to collude, possibly in the same manner as happened in the recent LIBOR/EURIBOR market manipulation scandal and the alleged manipulation of foreign exchange and commodity markets (section 4.7.1). Anti-trust authorities will need to continue to monitor these markets carefully.

7.8 IMPACT ON EU COMPETITIVENESS

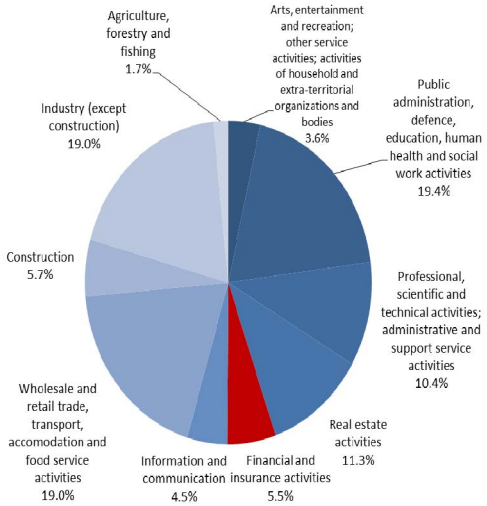
Financial services are an important industry in the EU, providing for jobs, GDP and exports. The financial services sector provides 6.5m jobs and has been estimated to account for EUR 636 billion or 5.5 % of total EU GDP (charts 7.8.1 and 7.8.2). Related professional services employ an additional 4.7m people (chart 7.8.3). The EU is a leading exporter of financial services with extra-EU exports of EUR 77.3 billion accounting for about a quarter of financial services exports worldwide (chart 7.8.4). Thus, it is an important industry of the EU economy for growth and jobs.

Chart 7.8.1: **Gross value added (GVA) of financial services in % of EU GDP, 2000-2013**



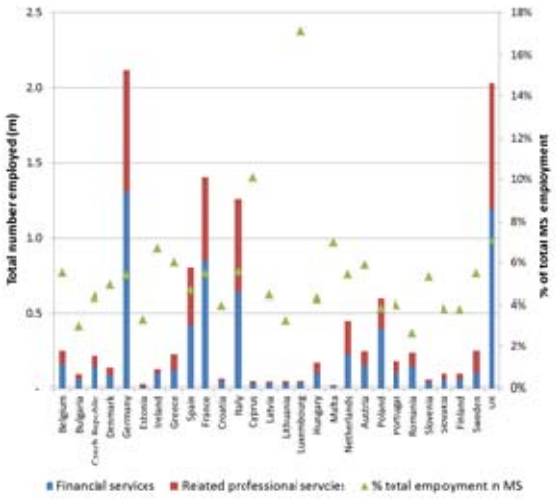
Notes: GVA is the standard way of measuring, within the National Accounts, the contribution of a sector to output in the economy. 2013 data are based on preliminary estimates.
Source: Commission Services

Chart 7.8.2: **Financial services % share of GVA, 2013**



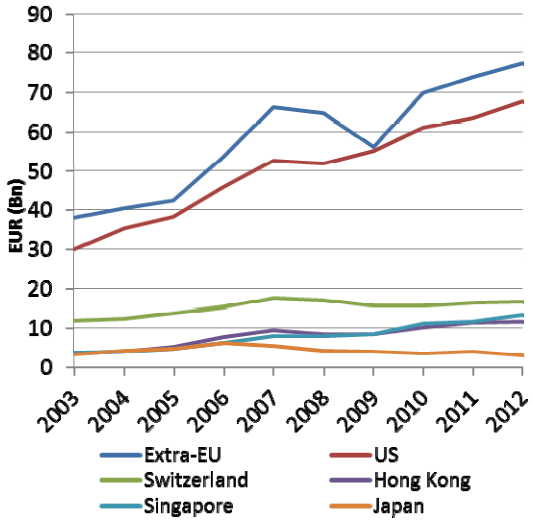
Notes: Based on GVA at basic prices. Data are based on preliminary estimates.
Source: Eurostat

Chart 7.8.3: **Employment in financial services, 2012 by Member State (million)**



Notes: Related professional services include legal services, accounting and management consulting activities associated with financial services.
Source: Eurostat

Chart 7.8.4: **Exports of financial services, 2012 (EUR billon)**



Source: Eurostat, UNCTADS

The EU should be the market of choice for investors, depositors and insurance policyholders world-wide. In addition to creating jobs and income, there can be other advantages of remaining a central player in the global financial system. For example, the access to a global capital market helps to reduce the cost of financial services for EU firms. It can also promote greater levels of free trade in goods and services, and help reinforce other EU industries (e.g. manufacturing and high-tech service businesses) to compete globally. In this way, the EU can help re-build the integrated and open global financial system to stimulate sustainable economic growth going forward.

However, while having an internationally competitive EU financial services industry is a valid policy objective, given the recent crisis experience, this cannot override the objectives of re-building a stable, responsible, and efficient EU financial system. In fact, what matters is not so much the competitiveness of the EU financial sector but the competitiveness of the EU economy.

The global nature of financial services and markets makes it important for the EU to ensure and promote coherence with regulation in other jurisdictions (section 7.9). There can be costs to the EU in terms of competitiveness (compared to the rest of the world) and financial stability if the implementation of the financial regulatory reforms diverges across jurisdictions. Following the crisis, governments and regulators came together to work on a harmonised response. The international standard setters, such as the FSB, the BCBS or the International Organisation of Securities Commissions (IOSCO), have been working to set out common international principles and standards. Member jurisdictions have committed to follow those that have already been agreed. Yet these are non-binding, and jurisdictions are left to interpret and transpose these principles independently. This leaves room for divergence in application, and possible costs and risks for the EU if other jurisdictions do not move in tandem. If Europe moves either too quickly or decides to take

"tougher" measures (i.e. "gold plating"), there could be costs to the competitive position of EU financial services. However, if reforms are implemented too slowly or are much weaker, then the EU financial system remains prone to instability risks.

7.9 CONSISTENCY OF RULES WITHIN THE EU AND GLOBALLY

Given the financial integration in the EU as well as the global nature of many financial services and markets, there is a need for consistent implementation of regulatory reforms both in the EU and globally. Inconsistent implementation will carry risks of rendering the reforms less effective and impose additional costs (e.g. on regulated firms that need to comply with different and potentially overlapping requirements).

Need for consistent implementation of rules in the EU

As explained in chapter 4.6, policy action at the EU level was needed to drive convergence of regulations and supervisory practice, for example, through the development of a single rule book, the creation of the ESAs and the move to Banking Union.

Although well underway, the EU financial regulation agenda is dependent upon Member States ensuring faithful implementation of EU legislation, through timely and comprehensive transposition as well as appropriate monitoring and enforcement by the relevant authorities. In order to address system-wide threats to financial stability, it is important that such actions are coordinated and consistently implemented among all relevant national and European authorities. There is also a need to have robust procedural frameworks with sufficient procedural guarantees to ensure consistent and effective implementation and enforcement of the new legislations.

The Commission is working hard to identify and address barriers where they exist to help complete the single market for financial services and make it work better for all citizens of the EU. For example, the Single Market Act (SMA) I and II highlight key areas of action to stimulate the economy and further develop the single market (see section 4.6.4). Furthermore, the March 2014 Communication on long-term financing[132] of the economy suggests a number of actions covering a broad scope (capital markets, SMEs, private savings, cross-cutting issues such as the accounting framework and insolvency law) in order to foster the supply of long-term financing and to improve and diversify the system of financial intermediation for long-term investment in Europe.

Need for consistent implementation of rules at global

If globally agreed rules (by the G20) are not implemented in a consistent manner, this creates tensions with the goals of achieving global financial market liberalisation while maintaining financial stability.

A process in which each jurisdiction implements its own legislation, with extra-territorial implications, creates scope for duplication and inconsistencies, which

[132] COM(2014) 168 final

result in increased risks and costs. It creates considerable uncertainties for many global financial institutions and a deadweight cost for the economy. Such circumstances may occur due to an imprecision or even an absence of international rules in a given policy area. It may also be driven by technical inconsistencies between extra-territorial rules in different jurisdictions. Box 7.9.1 illustrates the need for globally consistent rules with respect to reforms of the inherently global OTC derivatives markets. Stakeholders have raised other examples, including on data protection, accounting principles, and trade reporting.[133] The Commission is working closely with third countries to build efficient exchanges of information; to assess risks and evaluate market practices; and to ensure that a consistent regulatory and supervisory framework emerges between the EU and third countries.

Box 7.9.1: **Illustration of the need for international cooperation: the case of EMIR**

The large share of cross-border activity in many OTC derivatives markets means that coordinated implementation of global regulatory reform is crucial for all stakeholders. Uniform international principles covering OTC reform areas almost comprehensively have either been completed or are under development by the regulatory community. However, due to political, legal and market idiosyncrasies in individual jurisdictions, differences have emerged between the substance and timing of implementing rules in different jurisdictions. This can lead to regulatory conflicts, inconsistencies, duplication and gaps.

These issues are exacerbated by regulatory frameworks which seek to apply extraterritorially to market participants and infrastructures in foreign jurisdictions, as multiple differing rules may apply to the same entities or transactions. This can cause a range of issues from increased compliance costs to the inability for firms to execute cross-border transactions. For example:

1. Internationally active central counterparties (CCPs) may need to comply with multiple regimes

Internationally active CCPs are essential for ensuring that counterparties to cross-border transactions can satisfy their respective mandatory clearing obligations in line with G20 commitments. However, some jurisdictions require foreign CCPs providing services locally to comply with domestic requirements. This results in internationally active CCPs having to comply with multiple differing regimes, which can cause operational complexity and increased costs, ultimately making international activity less attractive.

2. Firms transacting cross-border may be subject to incompatible transaction requirements

Some jurisdictions require all domestic market participants to comply with domestic requirements in respect of transaction requirements such as reporting, clearing and risk management. Where cross-border counterparties are each obliged to comply with their own domestic requirements in respect of a single transaction, inconsistencies and conflicts can result in dual compliance. The consequences of this may be double reporting, which distorts the data available to regulators, or increased compliance burdens, which increases the costs of entering into cross-border transactions.

[133] See, for example, "The Danger of Divergence: Transatlantic Financial Reform and the G20 Agenda" by The Atlantic Council, co-chaired by Sharon Bowles, Chair of European Parliament's Economic and Monetary Affairs Committee, and US Senator Christopher Murphy.

To the extent that cross-border activity is ultimately inhibited by these issues, market and liquidity fragmentation will occur. In the absence of harmonisation, conflicts, inconsistencies, duplication and gaps can be minimised by providing for deference to foreign rules.

EMIR (see also section 4.3.2) provides the possibility to recognise the rules and infrastructure of third countries by way of adopting an implementing act determining 'equivalence'. Third country CCPs and trade repositories can provide services to EU market participants, provided they are subject to domestic rules which achieve the same overall regulatory objectives as EMIR.

EMIR further provides a mechanism for firms to choose to comply with the rules of third countries with respect to transaction requirements, provided those rules achieve the same overall regulatory objectives as EMIR. This means that an EU firm can comply with the rules of its third country counterparty rather than EU rules.

These mechanisms therefore enable cross-border activity to continue without the application of multiple rules, whilst ensuring that regulatory objectives are still achieved.

The G20 and FSB have played a key role in agreeing the global reform framework and standards since the start of the financial crisis. It is important that in its implementation of those agreed standards, the EU works effectively with other jurisdictions to reduce the opportunity for regulatory fragmentation and arbitrage.

Jurisdictions have been working on cross-border agreements. The Commission has set up equivalence procedures (of third-country regimes) in many areas of reforms (see box 7.9.1 for an example). G20 finance ministers and central bank governors are taking steps to ensure global consistency of rules. Further work is being done by the international standard setters to assess compliance against the agreed international standards across jurisdictions (Box 7.9.2).

The work of international standard setters can be complemented by more granular bilateral agreements on regulatory cooperation with some jurisdictions. By creating accountable and transparent frameworks for bilateral cooperation, regulators and supervisors would then endeavour to implement international standards in a coherent manner. An outcomes-based assessment of the rules of the other jurisdiction would lead to mutual reliance and remove unnecessary barriers, while safeguarding financial stability.

Box 7.9.2: **International work on consistency of implementation of global financial reforms**

The lessons of the recent financial crisis underscored the need for full, timely and consistent implementation of the standards across the globe. International standard setters have set out a work agenda to assess the progress and consistency of rules across jurisdictions.

Implementation covers the period from the development of an international standard or policy through its adoption via changes in laws and regulations at national/regional levels to actual practice by market participants and oversight/enforcement by national authorities. International monitoring of this process, in all its phases, helps to ensure complete and consistent implementation across jurisdictions and the effectiveness of the standard or policy in achieving its desired results, and demonstrates accountability by providing information on implementation progress to the public.

At the request of the G20, the Financial Stability Board (FSB) has been monitoring progress in the development and implementation of the G20 recommendations for financial sector policy reforms since the Washington Summit in November 2008. The FSB coordinates with the relevant standard-setting bodies (SSBs) on substantial policy development work in a number of key areas, also creating the Coordination Framework for Implementation Monitoring (CFIM) to strengthen the coordination and effectiveness of this monitoring. CFIM promotes effective and prioritised monitoring by facilitating ongoing consultation and collaboration between the FSB and SSBs as well as by allocating their scarce

resources efficiently based on comparative advantage. It also sets out where the primary responsibility for monitoring resides with a specific SSB.

For example, on bank prudential regulation (the Basel III measures), the Basel Committee on Banking Supervision (BCBS) has primary responsibility. As a result, the BCBS has established the Regulatory Consistency Assessment Programme (RCAP) to assess and report on the consistency of implementation of the rules on capital, liquidity, leverage and systemically important banks (see also section 4.2). The programme consists of two distinct but complementary workstreams to monitor the timely adoption of Basel III standards, and to assess the consistency and completeness of the adopted standards and the significance of any deviations in the regulatory framework.

Various other mechanisms are in place for monitoring the implementation of international financial standards and policies and for reviewing their effectiveness. They include the IMF-World Bank Financial Sector Assessment Programs (FSAP) and Reports on the Observance of Standards and Codes (ROSC) assessments; FSB thematic and country peer reviews and progress reports; and monitoring and review processes carried out by the SSBs.

Notes: For more information see the FSB and BCBS websites

7.10 POTENTIAL TENSIONS BETWEEN BANKING UNION AND THE SINGLE MARKET

While the move towards Banking Union is an important development to complement EMU (see section 4.6.3), concerns have been raised that Banking Union may create a "two tier" system between euro area (and other Member States participating in the Banking Union, which is open to all Member States if they wish to take part) and those Member States that are not participating.[134]

However, **a number of important safeguards have been provided to help protect the interests of the single market in financial services when creating the Banking Union**. First and foremost, the Banking Union is based on the single rule book, which applies across the EU and not just to Banking Union members.

In addition, as concerns the relationship between participating and non-participating Member States, the home/host supervisor coordination procedures and colleges of supervisors will continue to exist as they do today, as far as coordination with supervisors in non-euro area Member States is concerned. Non-euro area Member States will hence retain all their existing powers and prerogatives, but the Banking Union will reduce the scope of coordination failures between national supervisors (as there will be coordination between only one authority (the ECB) instead of a multitude of authorities) and remove the tendency to blend prudential supervision with the protection of national interest. The ECB as a European institution will work in the interest of the whole EU and not only the Euro area. There will also be a memorandum of understanding between the ECB and the competent authorities of non-participating Member States on the way they will cooperate in performing their supervisory tasks.

Furthermore, the EBA will play an integral part in protecting and further developing the single market for banking. It will also have to ensure that the interests of the wider single market are protected. In order to ensure that the EBA can perform these tasks, some targeted amendments to the EBA founding regulation have been introduced in the context of establishing the SSM.

[134] See also Enria (2013).

In particular, with the creation of the SSM for euro area members (and those other members that would wish to join), there could have been a concern that these members could form a block to systematically outvote the non-participating members on the EBA's Board of Supervisors, which is the main decision-making body of the authority, leading to a situation that might rather serve the interest of the euro area than the wider European interest. This concern was addressed through the creation of a double majority voting system. Now, when EBA decides, for instance, on binding technical standards, a majority of both euro area and non-Euro area countries need to agree for them to come into force. Also, some powers of the EBA were strengthened (e.g. access to information, stress tests, and rights of the EBA to request a meeting of supervisory colleges). Furthermore, the ECB will be subject to the same procedure of binding mediation by the EBA as any other supervisory authority.

In addition, a "non-discrimination" clause has been inserted into the SSM regulation, stating that "no action, proposal, or policy of the ECB shall, directly, or indirectly, discriminate against any Member State or group of Member States as a venue for the provision of banking or financial services in any currency." This clause recognises that non-participating members of the Banking Union should still be able to play a role in euro-denominated banking services, in line with the principles of a single market.

Similar safeguards to protect the interest of Member States not participating in the Banking Union are valid for the SRM. Again, the first layer protection will be the application of the same EU-wide rulebook of prudential requirements, which will continue to apply to all Member States. In this way, the EU wide single rulebook will prevent differences of treatment among banks across the whole EU. Moreover, to ensure an objective and fair resolution process, any discrimination by all actors within the SRM against banks, their depositors, creditors, or shareholders on grounds of nationality or place of business is forbidden. Also, pursuant to the principle of cooperation, the Single Resolution Board will cooperate with the resolution authorities of non-participating Member States at different stages of the recovery and resolution process: for the drafting of group recovery and resolution plans; for the assessment of such plans; for addressing or removing impediments to resolvability in case of groups; and for taking concrete resolution decisions for the group.

Overall, therefore, the Banking Union has been created in a manner that will support the interests of the single market.

7.11 COMPLEXITY OF REGULATION

Primary legislation and the detailed rule-making that it triggers together amount to several thousands of pages. Regulatory and supervisory resources have increased significantly over the years, and so have the compliance costs of regulated entities. F**inancial regulation is complex, and the reforms will further increase this complexity, with related costs.**[135] There are more than 400 pages of legal texts for firms, regulators and proactive market participants to trawl through counting only the CRD IV package.

[135] The increase in costs could affect the freedom to conduct a business enshrined in article 16 of the Charter of fundamental rights and limitations have thus had to be conceived in strict compliance with the requirement of legality and proportionality, as provided for in article 52.1 of the charter.

The complexity of regulation is, at least in part, a reflection of the complexity of financial institutions, the products and services they offer, and the financial system as a whole. It also is the result of a process of regulatory reforms that responds to new risks in the system and that adds or modifies rules as the system evolves and new risks emerge. In addition, the complexity reflects a desire for regulatory and legal certainty, which generally calls for rule-making at a very detailed level.

Schneiberg and Bartley (2010), Harford (2013), Haynes (2012) and others explain the difficulties for policymakers, regulators and supervisors in managing such complex systems. Schneiberg and Bartley explain that regulation faces problems of uncertainty that go beyond "getting the rules right". Complex systems are characterised by extensive interdependence and relations among elements that are poorly understood, non-linear, variable, and idiosyncratic. Under these conditions, many interactions will remain hidden, and oversight can yield false alarms and warning systems that may be ignored or rationalised away. Harford argues that regulators and regulated must learn about rapidly changing properties of financial products and markets and to adjust rules in light of their discoveries.

Haldane and Madouros (2012) and others have well presented the case against complexity of regulation, in particular in the context of the Basel III capital adequacy framework, which is transposed into EU law by the CRD IV package. Haldane and Madouros argue that complex rules often have high costs of information collection and processing; rely on "over-fitted" models that yield unreliable predictions; and can induce defensive behaviour by causing people to manage the rules. They conclude that *"modern finance is complex, perhaps too complex. Regulation of modern finance is complex, almost certainly too complex. That configuration spells trouble. […] Because complexity generates uncertainty, not risk, it requires a regulatory response grounded in simplicity, not complexity."* Among other policy lessons, they argue in favour of the leverage ratio as a simple backstop to risk-based capital ratios determined by banks' internal models; a move to more simplified bank balance sheets; and a less rules-focused and more judgment-based approach to supervision.

While adding to the overall complexity of financial regulation, **the EU financial regulation agenda also seeks to reduce complexity and related costs in several ways**: by harmonising rules and developing a single rulebook to avoid duplication or inconsistent application of rules across the EU, which presents significant simplification for cross-border financial institutions; by developing the reform agenda in line with the G20 commitments and working towards greater coherence and convergence of international regulatory frameworks; and by adhering to the principle of proportionality in the form of exemptions (e.g. for small institutions) and targeted regulation to those institutions (e.g. systemically important or 'too big-to-fail' institutions) or activities that pose the greatest risk.

In addition, the EU is supporting ongoing work by the Basel Committee to introduce the leverage ratio as a backstop to the risk-based capital framework for banks. Requirements for banks to draw up recovery and resolution plans under the BRRD may also provide incentives for institutions to review the complexity of their organisational structures and simplify business models. Moreover, proposals to reform banking structures are aimed at simplifying bank balance sheets and imposing quantitative restrictions on what deposit-taking banks can and cannot do.

Review clauses have been included in the bulk of the EU proposed or adopted legislation (see annex 3), and there is scope for wider review in future ex-post evaluations of the effectiveness and transparency of the financial reforms. Complexity can be a key aspect of these reviews, including its impact on the effectiveness and ease of supervision. However, the more general question is not just about whether financial regulation is too complex, but also about the complexity of the financial system and what can or should be done to reduce this complexity.

7.12 POTENTIAL CONFLICTS AND INCONSISTENCIES IN THE REGULATORY FRAMEWORK

The financial and economic crisis made necessary a series of urgent reforms and thus precipitated a large number of interlinked reform proposals which normally would have been proposed over a longer time period. The need to respond swiftly to the crisis and restore confidence posed significant challenges for the legislative process and ensuring that the reforms are well-crafted and consulted with stakeholders and that they considered all possible effects, including the interaction effects between different reforms. The ongoing international reform efforts, led by the G20 and FSB, and the EU commitments arising under those, further influence the Commission's freedom when drafting legislative proposals and make it more difficult to adapt the timeline for proposals.

The Commission (as well as its co-legislators) made best efforts to ensure the coordination of the proposals and to avoid overlaps and inconsistencies that could affect the rights of the entities affected by the legislative measures.

Nonetheless, given the number of necessary reforms and the complexity of the task, technical inconsistencies and other mistakes in the legislative proposals are inevitable. Some have been identified already and corrected, but new ones may only be revealed going forward. Even if the initial proposals are based on a consistent approach, challenges may arise from the legislative process, where inconsistencies can emerge as a result of negotiations, and thereafter during the implementation phase.

The Economic and Monetary Affairs Committee of the European Parliament held a public consultation in 2013 on the coherence of EU financial services legislation.[136] Responding stakeholders identified a range of specific areas where they perceive to be overlaps and inconsistencies both in existing legislation and in legislation being negotiated. Similar issues have also been raised in various industry submissions and available studies.

Overlaps and duplications: Given the sheer volume of legislation, there may be specific cases where regulation overlaps, creating the risk of duplicating requirements. There may be specific cases where a given market participant is required to meet similar obligations resulting from different pieces of legislation, or where different legislation appears to pursue the same objectives. However, it should be stressed that overlapping requirements do not necessarily mean contradictory requirements, and do not necessarily impose an unjustified burden in terms of cost and resource requirement of the entities that are concerned by the legislative measures.

[136] http://www.europarl.europa.eu/committees/en/econ/subject-files.html?id=20130314CDT63219

Also, while overlaps are to be avoided wherever possible, seemingly overlapping regulation may in fact be complementary and enhance the effectiveness of the other reforms. As already noted, an example is structural bank reform. While some industry stakeholders argue that such reforms are redundant and do not deliver benefits over and above what is achieved by higher capital, resolution mechanisms and the other bank reforms in place, structural reform can deliver important complementary benefits (see sections 4.2 and 5.2).

In the area of financial reporting, firms often have to comply with a different set of accounting rules for financial statements (i.e. local accounting standards, IFRS, accounting rules for tax purposes, etc.). This creates a burden for the relevant firms.

Inconsistencies: Concerns have been expressed about inconsistencies in regulations or the risk thereof. Some of these concerns are of detailed technical or legal nature, and their economic significance appears limited. Others have been addressed, e.g. as part of negotiations.

It has been argued that there could be a potential inconsistency between the requirements applying to financial instruments under MiFID II and those applicable to insurance-based investment products under IMD II. The Commission proposal on IMD II aimed at reducing the regulatory divergences by mirroring as far as possible the MiFID II requirements on selling (see section 4.7.2). Related concerns have also been raised about the Prospectus Directive (covering securities issuance) and the recently agreed PRIIPS Regulation (covering retail structured products), as both have a common purpose to provide the most salient information to potential investors.

It has also been argued that there are inconsistencies in the rules on remuneration, e.g. in the CRD IV package, MiFID II and other legislations, which can all differ but apply simultaneously to some investment firms. However, the remuneration rules in MiFID II and the CRD IV package are designed in a complementary way. The CRD rules on remuneration cover mainly those "members of staff whose professional activities have a material impact on the institution's risk profile", whereas MiFID II rules on remuneration are designed to address concerns raised by the remuneration of client-facing and sales force staff and persons overseeing them. Their remuneration, if not properly designed, may give wrong incentives to act unfairly and not in the best interest of the client, thereby creating conflicts of interest.

Both EMIR (Article 7 and 8) and MiFIR (Article 28 and 29) contain provisions granting trading venues access to a CCP and vice versa, but with different scopes: EMIR just applies to OTC derivatives, whereas MiFIR extends the scope to other financial instruments. In most respects the provisions are aligned, and MiFIR has amended certain aspects of EMIR where necessary to ensure alignment.

The interactions between rules are often complex, also reflecting the complexity of the financial system and the regulatory framework. The initial "fire-fighting" mode in response to the crisis added to the challenges. Thus, inconsistencies were bound to arise and, where significant, should be (and have been) remedied when identified. The risk of these inconsistencies must be considered acceptable in relation to the objective pursued.

Inconsistencies often emerge as a result of inconsistent implementation of legislation within the EU. However, compared to the pre-crisis period, the legislative reforms rely more heavily on maximum harmonisation and move towards the adoption of a single rulebook in financial services. This reduces the scope for national interpretations and adding national requirements (gold-plating), which in turn reduces the risk of inconsistencies arising from the implementation of rules. A separate but related issue is the need for consistent rule-making at international level, as already discussed in section 4.9 above.

Sequencing: The nature of the financial and economic crisis unfolding led to the incremental discovery of gaps in legislation, e.g. in the field of short selling, credit rating agencies and shadow banking. The order of such legislation is not always a choice but a consequence of developing insight into the failures of the financial system. The recent benchmark manipulation scandals are a clear example where action needed to be taken urgently when the problems came to light, irrespective of the fact that the initiative was not initially planned.

Sequencing challenges apply also at international level where, as noted above, efforts are being made to ensure global consistency and coordination. The concern here is about the EU front-running legislations that are still being consulted upon at a global level. The front-running of proposals may result in differently-defined requirements, different implementation dates and different implementations, which are undesirable in the international context even if the rules are necessary at EU level.

Uncertainty and delays: Concerns and criticisms in some cases stem not so much from inconsistencies in the rules, but from the uncertainty about the timing and final form of the legislative measures and their implementation. Delays in the adoption and implementation of proposed measures also create uncertainty and add costs. The most prominent example is Solvency II. Since the agreement of the Directive in 2008, insurance companies have been preparing for an implementation, which still has not happened, and incurred significant costs in the process that have increased as a result of the delays. On other occasions, an over-reliance on delegated and implementing acts, including technical standards, can sometimes lengthen the process. While often inevitable given the nature of the legislative process, uncertainty and delays are undesirable.

To conclude, financial regulation is a very complex task where policymakers face numerous challenges. This applied in particular to developing the policy response to the financial and economic crisis, where a large number of measures had to be taken in a short period of time to address the failures and restore financial stability and confidence. As the implementation of the reforms beds down, it will be important to closely monitor the overall effectiveness and impact of the new regime. Review provisions are included in all major legislation and will provide an opportunity to report on any issues arising and to consider any measure necessary to adapt, complete or improve the regime

Where adverse consequences of the reforms have been identified, corrections to initial proposals have already been made (e.g. the treatment of trade finance in the CRD IV package, the long-term guarantee package in Solvency II). Also, where regulation entered uncharted territory, observation periods have been applied before finalising

the rules or deciding on the need for intervention (e.g. the NSFR and the leverage ratio in the new capital adequacy framework for banks). In addition, the gradual phasing in of other provisions limits adverse impacts during the transition phase and allows adjustment as appropriate (while being mindful that too much flexibility creates uncertainty, which is also undesirable).

The financial reform agenda is not a one-off exercise with a static set of measures. Financial regulation needs to evolve and adapt over time. While the reforms address the problems revealed by the recent crisis, the risk of future crises cannot be regulated away. The rules adopted to deal with the causes of this crisis may not be adequate to deal with problems that may arise in the future. New risks will emerge, also as a result of changing markets, technological developments and financial innovation. The Commission will remain vigilant and proactive, monitoring financial innovations and identifying new risks and vulnerabilities as they emerge.