EEAG (2012), *The EEAG Report on the European Economy*, "Banking Regulation", CESifo, Munich 2012, pp. 83–97.

Banking Regulation

3.1 Introduction

The severity of the financial crisis resulting from the collapse of the US market for real-estate and subprime loans in 2007 has caused a large-scale economic recession and prompted a major rethink of financial regulation. The magnitude of the crisis, the worst since that of the 1930s, amplified by the market channels in a global market and the weaknesses in the regulation and supervision of financial entities that it revealed, has spotlighted the issue of financial regulatory reform. The crisis triggered by the subprime loan market became systemic in the wake of the failure of Lehman Brothers in September 2008, endangering the stability of the international financial system. The sovereign debt crisis, which started in 2010 with problems in Greece, Ireland and Portugal and recently spread to Italy and Spain, has provoked another wave of systemic problems centring on banks in the euro area.

Why and how have regulatory mechanisms failed? Have there been new market failures? What can be learnt from the crisis? Does it have specific implications for the financial architecture of the European Union and the euro area? The answers to such questions will reveal the key issues to be taken into account when designing adequate regulation and will determine whether a radical reformulation of the regulatory framework is needed.

In EEAG (2003), Chapter 4, we argued that there were at least three open problems with the financial architecture of the euro area. Firstly, we indicated that the provisions made may not adequately guarantee financial stability. Secondly, and to a large extent, these provisions hindered European financial market integration; and finally, they also hindered the competitiveness of EU financial markets and institutions. We stated that: "The present gradualist approach may yield more costs than benefits in the long-term and may end up proving ineffective. It would be better not to wait for a major crisis to strike in order to put the house in order".[1] Well, now that a major crisis has struck, where does that leave us? In EEAG (2003), Chapter 4, we highlighted the need to establish clear procedures for crisis lending and crisis management with the European Central Bank (ECB) at their centre, and to confront the fiscal issue of how to provide help to a transnational institution. We also advocated more centralised supervisory arrangements in banking, insurance and securities in the medium and long run.

Against this background, Section 3.2 of this chapter overviews the crisis and its regulatory failures. Section 3.3 deals with ongoing regulatory reform, while Section 3.4 analyses competition policy and its interaction with regulation. In Sections 3.5 and 3.6 we look at the reform of the European Union's financial architecture and regulatory framework. The chapter then closes with some concluding remarks.

3.2 The crisis and regulatory failure

3.2.1 The crisis

The financial sector is plagued by all of the classical market failures. Firstly, a bankruptcy of a banking institution causes important *externalities*, especially if the institution is systemic, to the rest of the financial sector and to the real economy. Fragility, contagion and investor coordination problems are ubiquitous in the financial system. Secondly, *information asymmetries* in financial markets leave the small investor unprotected on the one hand, and may lead to market collapse because of adverse selection on the other. At the same time, widespread conflicts of interest between shareholders and depositors, as well as moral hazard, lead to excessive risk-taking, which is exacerbated by insurance and aid mechanisms aimed at avoiding the bankruptcy of systemic entities. Thirdly, there is the *market power* issue, since many banking sectors tend to be concentrated and have high barriers to entry. Finally, we could add that the *limited rationality* of economic agents may amplify financial cycles and encourage speculative bubbles.

[1] EEAG (2003), Chapter 4, p. 98.

The whole regulatory framework has been called into question by the crisis. The current EU sovereign debt crisis, with its menacing second wave of systemic risk, has once again exposed the weaknesses of the regulatory framework.

The originate-to-distribute model and the inverted pyramid of complex derivatives based on subprime mortgages were at the heart of the problems in the 2008 crisis. Mortgage supervision was in limbo, opaque and, given the complexity of the instruments, led to the undervaluation of risk. Besides, mortgage risk goes back to banks' balance sheets when structured investment vehicles (SIV) have liquidity problems due to explicit and implicit commitments of the entities. Risk undervaluation was reinforced by the use of statistical models based on short time series and historical correlations (and probability distributions with little weight on the tails), disregarding the systemic risk implied by these new instruments and high levels of leverage. Mechanical models for risk assessment, which only work within a range of very limited parameters, were overused. Furthermore, short-term wholesale funding proved to be a crucial weakness characterising the balance sheets of many financial institutions, as shown by the cases of Northern Rock and Lehman Brothers or, more recently, Dexia.

A whole chain of misaligned incentives led to catastrophe. Government agencies in the United States promoted subprime mortgages, which were granted to families with little chance of repaying their loan; credit rating agencies, aligned with the issuer, competed to grant the most favourable ratings to the riskiest products, and short-term compensation for agents encouraged excessive risk-taking. This chain was oiled by the very low interest rates which financed the housing bubble. Monetary policy was totally focused on inflation; without any concern for bubbles in asset value or the fragile balance sheets of financial institutions. Surprisingly, the model of monetary policy implemented by central banks does not give any role to financial intermediation.

There is also debate over the extent to which pressure to offer value to shareholders and inefficiencies in corporate governance mechanisms have contributed to the crisis. The existence of both deposit insurance and explicit and implicit too big to fail (TBTF) policies limits the responsibility of shareholders, encouraging them to demand high risk-taking, since profits are private and losses, in the case of bankruptcy, are socialised. In such cases shareholders design compensation packages to benefit those executives who promote risk-taking whereby compensation is not sensitive to profit decreases (by means of guaranteed bonuses, for instance), but is sensitive to increases. Fresh evidence shows that this took place before the crisis.[2] There may also be the additional problem of a conflict of interest between shareholders and executives, and between executives and traders of intermediaries.

What past and current crises have in common is maturity mismatch (excessive maturity transformation) in highly leveraged institutions, contagion due to interbank exposure and the coordination problems of investors who encourage interbank and commercial paper market participants not to renew their credit lines out of fear that others may not do so either. This led to the collapse of the asset-backed commercial paper market (securitization) and the associated collapse of the interbank market. The globalisation of financial markets potentially entails greater diversification, but also increases the likelihood of contagion with domino effects between entities and contagion due to information problems. The opacity of the new financial instruments known as derivatives plays a crucial role: it leads to underestimation of the huge systemic risk accumulated in the system, and offers no clear knowledge of the magnitude or of the exposures to the toxic products derived from subprime mortgages. This problem of asymmetric information paralyses interbank markets and renders them illiquid.

At the root of the problem of the interbank and money markets' lack of resiliency lies a lack of information on the position of the banks in those markets. The complex, opaque web of over-the-counter (OTC) transactions made by large banks explains why relatively small shocks, like the subprime crisis or the problems with Greek debt, provoke such large effects via contagion. A major problem is that the decentralised trading of bank reserves lumps together the original liquidity risk with counterparty risk,[3] increasing the adverse selection problem enormously. A potential solution is to move OTC transactions to a central counterparty clearing system (which is

[2] See Fahlenbrach and Stulz (2011), Cheng et al. (2010), Bebchuk and Spamann (2010), and Bebchuk et al. (2010). In that sense, it is also possible to interpret the statement of Chuck Prince, executive director at Citigroup (Financial Times, July 2007): "when the music stops, in terms of liquidity, things will be complicated. But as long as the music is playing, you've got to get up and dance. We're still dancing."

[3] Counterparty risk is the probability that the other party in a transaction may not fulfill its part of the deal and may default on the contractual obligations.

transparent and centralises collateral and margin requirements).[4]

The opacity of OTC trading and the lack of a guaranteed central clearing counterparty may help explain why contagion from a relatively small problem in a market, like subprime mortgages in the United States or Greek sovereign debt in the euro area, has spread widely.

3.2.2 Major regulatory failures

Regulation has tried to alleviate market deficiencies with measures such as deposit insurance, with the central bank acting as lender of last resort, as well as with prudential and supervision requirements. The Basel II framework allows banks to trust their own internal models to assess and control risk and includes the demand for public disclosure of information on the part of financial institutions to encourage transparency and foster market discipline.

However, the whole regulatory framework has been called into question by the crisis. Firstly, dual regulation allows regulatory arbitrage between the regulated sector of depository institutions and the parallel banking system of structured vehicles and investment banks. Secondly, capital requirements in terms of quantity and quality were insufficient, while liquidity needs were disregarded. In the 2008 crisis there was a double failure of the banks' ability to bear losses (they did not have enough equity capital to cover the risks taken[5]) and of bank debt, which proved poor at absorbing losses when the layer of equity capital was eroded. To make matters worse, capital requirements are pro-cyclical. Furthermore, along the cycle, market value accounting also has pro-cyclical characteristics. Regulation does not give sufficient consideration to systemic risk. The opacity of the parallel banking system and of OTC derivatives markets has helped to conceal systemic risk. Finally, even although credit rating agencies play a very important role in regulation (for example, when determining capital needs), they competed with each other via lower rating standards without the adequate supervision of the regulator.

Critical questioning of the regulatory framework has concentrated on the lack of *macroprudential regulation* to limit the two main sources of system-wide financial risk: pro-cyclicality and inter-linkages in the financial system.

In general, regulation has not paid sufficient attention to conflicts of interest and has relied excessively on mechanisms of self-regulation and corporate governance. The influence of the financial sector, and of investment banks in particular, via lobbying may have contributed to lax regulations.

3.3 Regulatory reform

Governments have responded to the crisis with initiatives carried out by the Financial Stability Board (FSB) and the Bank for International Settlements (BIS), as well as through proposals and legislative changes in the United States, the United Kingdom and the European Union.

Solvency and liquidity requirements for the banking sector are set to increase substantially as a consequence of the new Basel regulatory framework (known as Basel III, see EEAG (2011), Chapter 5). This regulation aims to make entities capable of absorbing unanticipated losses and to forestall potential contagion between entities. The quantity (stricter solvency ratios) and the quality (fewer hybrid instruments such as preferred stock or subordinate debt) of the capital base will be raised, with the inclusion of countercyclical buffers, and liquidity requirements to adjust and moderate the industry's maturity transformation. These requirements will entail higher costs for institutions and potentially lower credit levels in the short term.[6]

In November 2011, the G-20 endorsed the FSB's proposal regarding the treatment of Global Systemically Important Financial Institutions (G-SIFIs).[7] The FSB simultaneously published an initial list of 29 identified G-SIFIs. This list will be updated annually. The G-SIFIs will need to have additional loss absorption capacity tailored to the impact of their default, rising from 1 percent to 2.5 percent or 3.5 percent of risk-weighted assets to be met with common equity and with full implementation in 2019. G-SIFIs will have more intensive and effective supervision of

[4] See Federal Reserve Bank of New York (2010), Duffie (2011) and Rochet (2010).

[5] Leverage ratios of assets to equity capital had ballooned to around forty times – twice historically normal levels. This was allowed to happen in part because there was no restriction on leverage, but instead limits on the ratio of capital to 'risk-weighted' assets, but the supposed 'risk weights' turned out to be unreliable measures of risk: they were going down when risk was in fact going up.

[6] BIS' estimates on the short term effects are quite moderate, while those carried out by the financial sector are much more dramatic.

[7] See *http://www.financialstabilityboard.org/publications/r_111104bb.pdf.*

risk management functions, data aggregation capabilities, risk governance and internal controls by 2016. The proposal brings broader powers and tools to the resolution authority (including statutory bail-in), and institution-specific minimum cross-border cooperation arrangements between national authorities to facilitate the collective resolution of cross-border firms. It also adds a framework for assessing and implementing resolution processes. By 2012 it is expected that the framework for the G-SIFIs will be extended to domestic systemically important banks and non-bank financial entities.

In addition, taxes and levies to absorb the shocks that systemic entities bring into the financial system are being debated on an international level. Accounting procedures will become more homogeneous (in a convergence process between the United States and the European Union) and the definition of capital will be harmonised to facilitate international comparisons, the treatment of off-balance sheet items and fair value estimates of assets in illiquid markets. Executive and employee compensation packages are being thoroughly reviewed in an attempt to control entities' risk-taking, as well as the banking sector's corporate governance.

Box 3.1

Regulation in the European Union

In July 2011 the European Commission presented a proposal to make Europe the first region to adopt, with some differences, the proposed "Basel III Agreements".[1] The proposal contains a Directive that:

- sets stricter requirements for the mechanisms and processes of corporate governance and increases oversight of risk management by Boards of Directors and supervisors;
- seeks to ensure the deterrent power, effectiveness and proportionality of the sanctions imposed by supervisors in case of violation of the requirements of the European Union;[2]
- proposes both a capital conservation buffer (unique for all banks) and a counter-cyclical buffer to be defined by each member state;
- requires supervisory institutions to submit an annual monitoring program specific to each entity based on risk analysis, more extensive tests and more systematic and rigorous rules;
- and seeks to reduce the influence of rating agencies by recommending internal risk assessment in making investment decisions and in calculating capital requirements related to certain significant holdings.

A Single Rule Book ensures the uniform application of prudential requirements contained in Basel III by all members, with more stringent requirements allowed only in cases of risk to financial stability or specific risk profiles of certain entities.

In July 2011, the European Parliament endorsed a Commission proposal on short-selling securities and certain aspects of credit default swaps (CDS) trading with the aim of increasing transparency and reducing risk by implementing a harmonised European framework for reporting requirements. The proposal allows the regulators to temporarily ban short selling in any financial instrument in exceptional situations and to prohibit naked short sales in equity and sovereign debt.[3]

In June 2010 the European Council recommended introducing a system of taxes and levies on both a European and a global level. In late September 2011 the European Commission presented a proposal for a financial transaction tax (FTT) to become effective on 1 January 2014 at an EU level, with three main goals: to increase the financial sector's contribution relative to the cost of the crisis, to reduce the riskiness of financial markets by discouraging speculative transactions (such as high frequency trading); and to ensure harmonisation at an EU level to avoid distortions of the Single Market. The minimum tax (0.1 percent for bonds and shares and 0.01 percent for derivatives) will apply to any exchange of financial instruments between financial institutions.[4] Germany and France support the European Commission FTT proposal, but the United Kingdom is opposed to it because, without a broad international agreement, there is concern over the prospect of a massive exodus of investors from London to other financial centres. There is also debate over the fate of the revenue raised and whether it should end up in the hands of the European Union or its member countries. Finally, the European Commission has also proposed measures to limit payments to departing bank executives and to ban the CEO from being the Chairman of the Board.

[1] European Commission, Revision of the Capital Requirements Directives (CRD IV), 20 July 2011.
[2] Administrative penalties may be up to 10 percent of annual turnover of the entity, as well as temporary bans on members of the governing body.
[3] In the words of European officials: "Short selling is the sale of a security that the seller does not own, with the intention of buying back an identical security at a later point in time to be able to deliver the security. It can be divided into two types: 'covered' short selling where the seller has made arrangements to borrow the securities before the sale and 'naked' short selling where the seller has not borrowed the securities when the short sale occurs".
[4] Primary markets transactions, transactions between financial institutions and the Central Bank and currency transactions on the spot market would be exempted.

Boxes 3.1, 3.2 and 3.3 deal, respectively, with regulatory developments in the European Union, the United States and the United Kingdom. It is particularly worth noting the UK proposal to ring-fence commercial off from investment banking activities in universal banks.

3.4 Competition issues

The relationship between competition, fragility and risk-taking is complex, but both theory and empirics support the idea that an increase in the level of competition, beyond some threshold, will tend to increase risk-taking incentives and the probability of bank failure. This tendency may be checked by the reputational concerns of the institutions, by the presence of private costs of managerial failure, or, more importantly, by appropriate regulation and supervision.[8]

[8] See Vives (2010, 2011a,b) for a more complete development of the arguments in this section.

In the European Union the competition authority has played an active role in controlling the distortions introduced by public help because it has the unique capability, among competition authorities, to control state aid. The important side benefit of state aid control in the European Union is that it limits the incentives of bankers to take excessive risk in the expectation of a bail-out if things go wrong. In other words, it addresses the TBTF issue. The competition authority may internalise that competition will be distorted if an institution that fails gets help. To limit the size (or better the systemically-corrected size) of an institution with divestitures once it receives public help (something that the European Union seems to be implementing) is an option, which extends the realm of competition policy. The competition authority in its role of protecting competition may have a say in the TBTF issue and therefore its actions should be coordinated with the regulator. The activism of the European Commission poses the question of competitive balance with those US banks which were recapitalised and for which no divestitures were required (see Box 3.4).

Box 3.2

The new regulatory framework in the United States

The Dodd-Frank Act passed in the United States in July 2010 is an effort to strengthen regulation and supervision. The most significant changes include:

- the set-up of the *Financial Stability Oversight Council*, a council of regulators, charged with identifying entities of systemic importance, which will be subject to tougher requirements in terms of liquidity, capital and leverage;
- enhanced consumer protection regarding lack of information on financial products; restrictions on banks to trade on their own behalf (Volcker rule[1]);
- greater transparency in clearing mechanisms and derivatives transactions;
- improved resolution mechanisms whereby regulators will be able to take charge and put troubled financial institutions into liquidation when their bankruptcy would jeopardise the stability of the system, whereby shareholders and unsecured creditors would bear losses.[2]

Entities of systemic importance may be subject to additional requirements at the regulator's discretion, including a reduction of their complexity, the adoption of "wills" to establish resolution procedures in case of bankruptcy, increased capital requirements, the introduction of debt instruments which turn into shares under certain conditions, leverage restrictions[3] and the set-up of independently capitalised subsidiaries. Derivatives transactions shall be performed through centralised platforms and not through OTC transactions, which shall remain under federal supervision. Prudential and transparency rules are set to the securitization market. Issuers shall retain five percent of the risk to ensure that they take greater care in underwriting loans. The *Bureau of Consumer Financial Protection* has also been created to help recover investor confidence and solve conflicts of interest. Credit rating agencies shall be subject to *Securities and Exchange Commission* (SEC) supervision. Under the Dodd-Frank Act, shareholders are also required to express their non-binding opinion on executives' pay.

[1] The passed law was a diluted version of the initial Volcker rule: banks will be able to invest up to 3 percent of their Tier 1 capital in proprietary trading and they will also be able to invest up to 3 percent of the Tier 1 capital in hedge funds and private equity funds.

[2] Before the reform, regulators were only able to bail-out or allow the bankruptcy of non-financial institutions in trouble (as in the cases of Bear Stearns, Lehman Brothers and AIG). The liquidation costs of an entity shall be financed by a tax levied (after the bankruptcy) on financial institutions with assets exceeding 50 billion dollars.

[3] In the United States, Bank Holding Companies already have a maximum debt-to-capital ratio of 24 (capital to total assets of 4 percent). Under the Dodd-Frank Act current restrictions are maintained as minimum requirements, but the Financial Stability Oversight Council is authorised to set its own debt-to-capital ratio of 15:1 if the entity entails a risk to financial stability.

Box 3.3

New proposals on regulation and competition in the United Kingdom

The Independent Commission on Banking (ICB), established by the UK Government, considered the benefits of a structural separation between domestic retail services and global wholesale and investment banking operations and concluded in September 2011 that the best policy is to require retail ring-fencing of UK banks, not total separation.[1] The objective would be to isolate those banking activities (the taking of deposits from, and provision of overdrafts to ordinary individuals and small and medium-sized enterprises (SMEs)) where continuous provision of service is vital to the economy and to bank's customers, from global external financial shocks. This would require banks' UK retail activities to be carried out in separate subsidiaries. The following services should not be permitted in the ring-fence: services to non-EEA (European Economic Area) customers, services (other than payments services) resulting in exposure to financial customers, 'trading book' activities, services relating to secondary markets activity (including the purchases of loans or securities), and derivatives trading (except as necessary for the retail bank prudently to manage its own risk). Subject to limits on the wholesale funding of retail operations, other banking services – including taking deposits from customers other than individuals and SMEs and lending to large companies outside the financial sector – should be permitted (but not required) within the ring-fence. The retail ring-fence would affect between one sixth and one third of the aggregate balance sheet of UK banks.

Retail ring-fencing banking activities should meet regulatory requirements for capital, liquidity, funding and large exposures on a standalone basis, and the permitted extent of its relationships with other parts should be conducted on an arm's length basis: independent governance and disclosures and reports as if it were an independently listed company. Given regulatory failure up to the crisis, the ICB recommends raising the capital standards for UK banks in relation to international recommendations. Furthermore, the supervisor should be able to require the banks to have additional primary loss-absorbing capacity if it has concerns about its ability to be resolved at minimum risk to the public purse. The resolution authorities should have a primary and a secondary bail-in power allowing them to impose losses on unsecured debt (bail-in bonds) in a resolution procedure before imposing losses on other non-capital, non-subordinated liabilities. In insolvency or resolution, all insured depositors should rank ahead of other creditors to the extent that those creditors are either unsecured or only secured with a floating charge.

Implementation of these reforms should be completed at the latest by the Basel III date of the start of 2019. In the Final Report, the ICB also made some recommendations about competition issues derived from the changes to UK banks after the crisis. These included measures to lower switching and entry costs, and to give the new Financial Conduct Authority (see Box 3.6) a new primary duty to promote competition.

[1] See ICB (2011).

The crisis has forced mergers of institutions backed by government subsidies and/or guarantees. The upshot is that some surviving incumbents have increased their market power and have a lower cost of capital because they are TBTF (and/or because of the public help). A merger policy must have a long horizon, and even in a crisis situation, it must consider the optimal degree of concentration in the industry, dynamic incentives for prudence of incumbents and the ease of entry. The consolidation brought by the crisis should not be problematic if the increased market power of the merged institutions is a temporary reward for past prudent behaviour that will fade away with new entry. However, if the market power consolidates due to barriers to entry into banking then consumers and investors will suffer the consequences. An active competition policy will be needed in that case.

Size and scope restrictions are blunt instruments for dealing with the TBTF issue. Controls on size are problematic because interconnectedness and line of business specialisation are more important than size for systemic risk. With regard to the scope of the banking firm, conflict of interest is what leads to potential market failure and effectively indicates possible scope limitations. Higher capital and insurance charges for systemically important institutions together with effective resolution procedures may be a better way of dealing with the problem. This should be coupled with a serious consideration of conflicts of interest in financial conglomerates. Given the limitations of behavioural regulation, structural restrictions seem warranted. The upshot is that the competition authority in its role of protecting competition may have a say in the TBTF issue and therefore its actions should be coordinated with the regulator. The potential for competition policy to provide a commitment device to partially address TBTF issues should not be dismissed.

In the United Kingdom, the proposal from the Independent Commission on Banking to ring-fence retail activities from investment banking activities (in sepa-

Box 3.4

Competition policy and regulation in the European Union and the United States

European Union

The European Union dealt with many banking aid cases during the crisis (taking 22 decisions only in 2008 and 81 decisions up to December 17, 2009). Most of the cases (75) were approved without objection.[1] The European Union has stated a number of conditions for state guarantees/recapitalisation including: non-discriminatory access to state help to maintain a level playing field among institutions and banking sectors; help should be limited in time and scope (only necessary liabilities); it should be accompanied by a contribution from the private sector and by appropriate market-oriented remuneration for support or recapitalisation. Furthermore, beneficiaries should be subject to some behavioural rules, incentives should be given for state capital to be withdrawn eventually, and a distinction should be made between fundamentally sound (but potentially distressed because of contagion) and other distressed banks (with recapitalisation for fundamentally sound institutions only).

The regulatory tools used by the European Union are structural (with balance sheet reductions and divestitures) and behavioural (with restrictions on pricing, publicity or compensation for employees). Some of the measures can be understood in terms of minimising competitive distortions of the aid and others in terms of checking moral hazard in the future. The important point is that even the measures purely aimed at competitive distortions will have an impact on *ex ante* incentives since a bank will know that help will be given with restrictions in case of trouble.

In the European Union a further potential contradiction between merger control and financial stability concerns arises. According to the European Merger Regulation, member states may block a merger to protect financial stability in the domestic market. Thus, it is questionable whether individual member states could implement this exception to fend off foreign entry[2] and to protect their national champions.[3]

United States

The Obama administration, following the advice of Paul Volcker, advocated limits on the size and scope (mostly in terms of proprietary trading) of banks to avoid the TBTF problem as well as to control risk-taking. What the European Commission tried to accomplish with state aid control, the United States and the United Kingdom may try to accomplish via regulation. The Dodd-Frank Act has introduced a mild version of the limits on proprietary trading and strengthened some limits on size (by extending the Riegle-Neal Act 1994 which prohibits any merger or acquisition that results in the combined banking organisation controlling more than ten percent of domestic deposits at the national level to all types of depositary institutions, and introducing a concentration limit to any consolidation of financial companies of ten percent of financial industry liabilities).[4]

[1] With 66 more cases cleared under a temporary framework to support lending to firms (DG Competition (December 17, 2009), State aid: overview of national measures adopted as a response to the financial/economic crisis). See Beck et al. (2010) for a thorough analysis and policy evaluation of bank bail-outs in Europe during the crisis.
[2] This has been the case, for example, in Portugal (case Banco Santander/Champalimaud Group in 1999), and Italy (cases BNL/BBVA in 2005; ABN AMRO/Antonveneta in 2005; Unicredito/HVB in 2006). This contrasts with the attitude of the United Kingdom in the merger of Santander/Abbey or of the Netherlands with the three-way acquisition and split of ABN AMRO.
[3] See Carletti and Vives (2009).
[4] A banking organisation could exceed the deposit cap with internal growth, but it would not be allowed to engage in any more mergers or acquisitions. Please note, however, that a national cap on market share for deposits should not be relevant from an antitrust perspective since the relevant markets from the competition perspective for retail and small and medium size enterprises are local.

rately capitalised divisions of a bank holding company (ICB 2011), see Box 3.4) is a compromise to alleviate the gambling problem with public insurance, while allowing some scope economies within banking activities. This structural measure has the potential to alleviate the problem, but will not eliminate it. One reason is that the definition of the boundary between the divisions will leave an important grey area and generate perverse incentives. Another reason is that the regulatory boundary problem persists: risky activities migrate to areas where regulation is lax and reproduce the problems that we have witnessed during the crisis in the shadow banking system. The outcome may be that the investment bank part may need to be rescued if it becomes systemic.

3.5 Financial architecture in the European Union: the new supervisory framework

A new European supervisory framework, the European System of Financial Supervision (ESFS), was introduced in January 2011. Its aim is to strengthen financial supervision by empowering regulatory bodies and replacing existing ones (that could only issue non-binding guidelines and recommendations), and to ensure the effectiveness of the decisions taken in emergency situation.

The ESFS consists of the European Systemic Risk Board (ESRB) and three European Supervisory Authorities (ESAs): the European Banking Authority

(EBA); the European Insurance and Occupational Pensions Authority (EIOPA) and the European Securities and Markets Authority (ESMA). The ESFS also comprises of the Joint Committee of the ESAs and the competent or supervisory authorities in each member state. By December of 2013 the European Parliament and the European Council shall review this framework (see Figure 3.1).

The two pillars of the new supervisory framework are the ESRB in charge of macro-prudential supervision and the ESAs in charge of micro-prudential supervision. The objective of the latter is to safeguard financial soundness at the level of individual financial firms and to protect consumers of financial services.

The main objectives of the new supervisory framework are to:

- help restore confidence in the financial system and specifically in delegated monitoring by public supervisors, rating agencies, auditors or securitization agents;
- contribute to the development of a single rulebook to issue directly applicable binding technical standards in key prudential areas, to issue binding interpretations of all EU legislation and to undertake reviews of national supervisors;[9]
- strengthen cross-border institutions, increasing the micro-macro link in risk assessment and in the design of regulation;
- prevent the build-up of risks that threaten the stability of the overall financial system, (e.g. regulating banks TBTF).

The ESRB is responsible for the macro-prudential oversight of the financial system within the European Union. It shall contribute to the prevention or mitigation of systemic risks to financial stability in the European Union that arise from developments within the financial system and taking into account macroeconomic developments, so as to avoid periods of widespread financial distress. It shall contribute to the smooth functioning of the internal market and thereby ensure a sustainable contribution by the financial sector to economic growth. It covers not only banks, but also other financial institutions, markets, products and market infrastructures. The ESRB must identify systemic risks, vulnerabilities and emergency situations. At the same time it must issue recommendations (including, where appropriate, for legislative initiatives) and early warnings (public or confidential) to the European Council, the three ESAs and national supervisory authorities, as well as monitoring follow-up.

The ESRB shall coordinate its actions with those of international financial organisations, particularly the IMF and the FSB, as well as the relevant bodies in third countries on matters related to macro-prudential oversight.

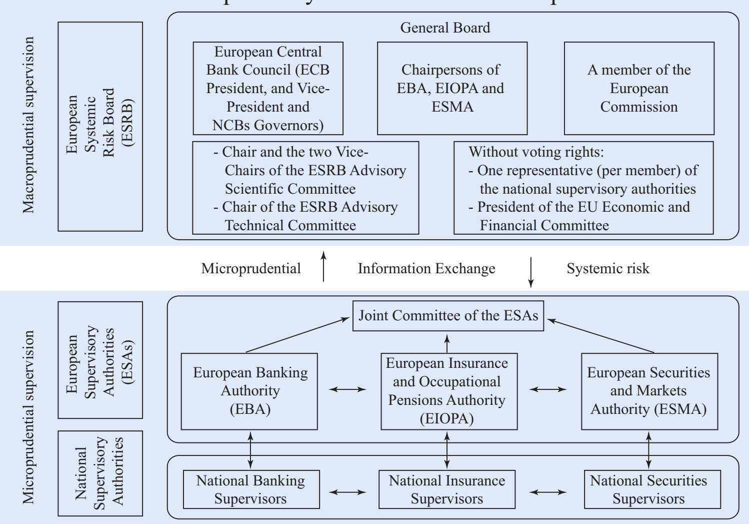
The ESRB can request information from the ESAs in an aggregate form or individually if the requested financial institution is deemed to be systemically relevant.

The three ESAs will work on micro-prudential supervision in a network with the existing national supervisory authorities. Their additional competences are:

- developing proposals for technical standards to better define common standards for the application of legislative acts, respecting better regulation principles and monitoring the application at national level;

Figure 3.1

The new supervisory framework in the European Union



[9] According to European authorities, national supervisors of cross-border groups were to co-operate within colleges of supervisors, but if they could not agree, there was no mechanism to resolve issues. Many technical rules were determined at a member state level, and there was considerable variation between member states. Even in cases where rules were harmonised, their application could be inconsistent.

- resolving cases of disagreement between national supervisors, where legislation requires them to cooperate or to agree;
- contributing to ensuring consistent application of existing and future technical EU rules (including through peer reviews);
- and coordinating in emergency situations or preventing threats to the correct functioning of the financial markets, taking actions such as the banning of operations, but that do not have fiscal effects for the member states (such as bail-outs).

The ESAs will be able to take decisions directly applicable to individual financial institutions if the national supervisor does not comply with the decision of the ESAs, and only in cases where there is directly applicable EU legislation.

Specifically, the main objectives of the European Banking Authority (EBA) are to:

- prevent regulatory arbitrage;
- guarantee a level playing field;
- strengthen coordination among international supervision;
- promote supervisory convergence;
- provide advice to EU institutions in the areas of banking, payments and e-money regulation, as well as on issues related to corporate governance, auditing and financial reporting.

The EIOPA has a responsibility to protect policyholders, pension scheme members and beneficiaries, and to act in an emergency crisis. The ESMA is responsible for fostering supervisory convergence among national supervisors, coordinating the actions of securities supervisors and adopting emergency measures in a crisis situation. The ESMA also directly oversees credit rating agencies, since their services are used around Europe.

The new supervisory framework is a step in the right direction, particularly in terms of crisis prevention, but it still lags behind the reality of financial integration and the possibilities of banking problem contagion in the European Union, particularly in the euro area.

In EEAG (2003) we stated that: "deeper and more integrated markets increase diversification possibilities, but at the same time raise potential problems of contagion and liquidity crises." The report forecasted that: "the fragility of the banking system may well increase in the short term." It also stated that: "regulatory fragmentation in Europe is a major obstacle to financial integration. It reduces the international competitiveness of European markets and institutions, and poses a threat to the stability of the financial sector".[10] Given that the value of centralised authority with appropriate information is enhanced in crisis situations, we recommended that the responsibility for financial stability should be born by the ESCB and the ECB in particular. We also advised the ESCB to establish and make public a formal framework of crisis resolution clearly identifying the chain of command in a crisis situation. Furthermore, the burden sharing issue in case of failure should be confronted: "A formal mechanism of co-operation should be established between the ECB, the national central banks and/or national supervisors, and the national treasuries to clarify responsibilities, establish information sharing protocols, and elucidate who would pay for failed (insolvent) institutions that have been helped".[11] We presented two alternative models for the future: in the first model prudential supervision of banks is in the hands of the ESCB with the ECB having a central role while European-wide specialised regulators in insurance and securities are constituted. In the second model, an integrated regulator of banking, insurance and markets – a European Financial Services Authority (EFSA) – is formed, while the ECB (in the ESCB) is responsible for systemic problems. The new supervisory framework is a step in the second direction.

In the EU crisis, management has proven a source of instability. The European Union has tried to achieve compatible financial integration and cross-border banking with national authorities in charge of supervision. Financial stability has suffered as a result. The options now are to either go back on integration or to diminish the role of national authorities. To go forward with integration burden-sharing agreements for bank resolution are needed, as well as a European resolution and supervisory authority. The present reform of EU financial architecture takes a middle path, preserving the role of national authorities with the convergence of national regimes, crisis concordats, and expanded co-ordinating roles for European financial authorities, but no burden-sharing agreements in case of a solvency crisis. The new ESRB may contribute to crisis prevention, but it will not contribute to crisis management and resolution. Macro-prudential supervision should be led by the

[10] EEAG (2003), Chapter 4, p. 113.
[11] EEAG (2003), Chapter 4, p. 114.

central bank and closely coordinated with micro-prudential supervision. This is particularly relevant for systemic institutions. The new supervisory model in the United Kingdom (see Box 3.6), with both macro- and micro-prudential control under the wing of the Bank of England seems sensible. Indeed, the central bank has an advantage in monitoring macroeconomic developments, can act decisively in a crisis (avoiding the problem of co-ordinating agencies and committees), and can internalise the effects of monetary policy on leverage and risk-taking. All this points towards giving the central bank a central role in macro-prudential control.[12]

The EU model is closer to the US model with a systemic board in charge of macro-prudential supervision, but with three differences: in the European Union the committee is multinational, it has no direct control over policy instruments and can only issue warnings, and the role of the European Commission and the Economic and Financial Committee is passive in contrast to the active role of the Treasury in the United States.

The integrated supervisor is to take care of cross-border groups in the euro area. Those groups should adhere to a European deposit insurance fund with liability proportional to the group's exposure to the particular countries. The deposit insurance fund could, at the same time, work as a resolution authority (like the FDIC in the United States). A second tier of national institutions could be supervised by national regulators.

A possible configuration of the euro area financial architecture along the lines of the new UK model would be to pull the ESRB and the EBA (and even the EIOPA) as a subsidiary under the wing of the ECB and keep a developed ESMA independent. This would put macro-prudential supervision in the hands of the ECB and would ensure coordination and information exchange with the prudential authority, as well as a clear line of authority in a crisis situation.

The EU sovereign crisis has added another dimension to the financial crisis linking the fate of the sovereign and that of its banks. Problems in the banks of Ireland and Spain have led to problems for the sovereign. Problems with the sovereign in Greece, Portugal and Italy have, in turn, led to problems for their banks. In Hannoun (2011) it is shown that market participants have priced sovereign and banking default risks as closely related since the bank bail-outs of 2008–09.

The perspective of a restructuring of sovereign debt (e.g. in Greece) with losses for investors changes the expectations of a bail-out inducing a systemic problem due to the confluence of the built-in instability of the euro area (with one currency and many sovereigns), legacy assets on the books of banks due to the crisis, and the lack of appropriate institutions to deal with banking crises in the European Union. In the euro area there is the potential for a simultaneous run on the debt and the banks of a country, since the deposit insurance guarantees are devalued in cases where the sovereign has no access to the international capital market and has problems of its own. If this problem needs to be solved via collective burden sharing, it is up to the states to decide on rescue funds like the EFSF, EFSM, ESM etc. Burden-sharing gives rise to moral hazard effects and involves fiscal redistribution among countries. As such, it needs to be controlled by the parliaments of the participating countries.

The treatment of sovereign exposures in the European Union for purposes of capital requirements has induced banks to hold large amounts of sovereign debt and has provoked discrepancies between the market pricing of sovereign risk and the accounting of those risks in the banking book. This, in turn, has led to wide divergence in the recapitalisation needs of EU banks depending on whether market pricing or historical cost are used to account for sovereign exposures (see Box 3.5).

3.6 Evaluation of regulatory reform

Regulatory reform should be based on the following key principles:

1. A central regulatory body (such as the central bank) should have a mandate to maintain financial stability. It is necessary to consider specific macro-prudential measures, which take into account liquidity needs throughout the economic cycle. The Bank of Spain's dynamic provisions are an early example.

2. Providing liquidity is not the same as providing equity capital. If a systemically relevant bank needs capital, but cannot find it in the market, it should

[12] See the discussion in Vives (2001) about the pros and cons of putting together in the central bank monetary policy and banking supervision.

be recapitalised against shares by the respective state or states where it is located (or according to the relevant cross-country burden sharing arrangements made). Monetary policy is not the appropriate tool with which to recapitalise banks.

3. Any institution which fulfils the tasks of a bank (maturity transformations, supervision of opaque credits) is fragile; it is subject to moments of panic and needs the coverage of a safety net. Therefore, it cannot avoid supervision. Regulation and supervision

Box 3.5

The treatment of sovereign exposures in the European Union[1]

As of September 2011, twelve percent of the banks' sovereign debt exposures were included in the trading book (marked-to-market, reflected in the profit and loss account), 49 percent were classified as available for sale (marked-to-market, not reflected in the profit and loss account but in equity), and 39 percent were classified as held to maturity (valued at amortised cost net of any impairment provision). As a result, the pricing of sovereign risk in financial markets currently diverges from the accounting framework applicable to the banking book (which does not reflect the widening of sovereign spreads in the profit and loss account until an impairment provision is taken).

Basel rules vs Brussels rules

The Basel II standardised approach allows a zero risk weight to be applied to AAA and AA-rated sovereigns (see Table 3.1). However, large and sophisticated banks are expected to implement the IRB (internal ratings-based) approach and not the standardised approach for calculating credit risk capital. The IRB approach requires banks to assess the credit risk of individual sovereigns using a detailed rating scale, accounting for all relevant measured differences in risk. However, the European Capital Requirements Directive allows a generalised zero risk weight for exposures to member states' central government denominated and funded in the domestic currency of that central government thanks to the so-called "IRB permanent partial use" rules. According to these rules, a bank can apply the IRB approach to corporate, mortgage or retail exposures, but a zero risk weight to the sovereign debt of all EU member states. In the 2011, European stress test reports 59 out of the 90 participating banks applied their own internal model but only 36 to sovereign risk.

Table 3.1

Risk weighting in the Basel II standardised approach

Basel II standardised approach: sovereign risk weights credit assessment	AAA to AA–	A+ to A–	BBB+ to BBB–	BB+ to B–	Below B–	Unrated
Risk weight	0%	20%	50%	100%	150%	100%

Three main criticisms have been raised about the regulatory treatment of sovereign risk that provides incentives for banks to accumulate large sovereign exposures: (i) a zero risk weight is applied to AAA and AA-rated sovereigns; (ii) the new liquidity coverage ratio advocated in the Basel III proposals could encourage banks to hold more sovereign debt, and (iii) the large exposure regime in Europe excludes highly rated sovereigns from the 25 percent of equity limit on large exposures.

Recognition of sovereign risk in stress tests and the new capital buffer requirement

In July 2011, the EU banking stress test included haircuts applied to sovereign exposures in the trading book and increased impairment provisions for these exposures in the banking book. To prevent underestimation of risk for sovereign debt held in the banking book, the EBA has developed a much more rigorous approach than previously adopted and the probabilities of default based on external ratings (Table 3.2) are no longer zero.

Table 3.2

Risk weighting based on external ratings

Probability of default used in the EU wide stress test for sovereign exposures Standard & Poor's rating	Average two-year probability of default implied by external ratings in % (EBA calculations)
AAA to AA	0.03
A	0.26
BBB	0.64
BB	2.67
B	9.71
CCC-C	36.15

continued: Box 3.5

Furthermore, at the summit of the European Union in October 2011, systemic banks were required to strengthen their capital positions by building up an exceptional and temporary capital buffer to address current market concerns over sovereign risk reflecting current market prices. The requirement of the EBA is to reach a Core Tier 1 capital ratio of 9 percent by the end of June 2012. Sovereign exposures in the Held-to-Maturity portfolio, as well as in the loans and receivables portfolio, shall be valued at market value using haircuts which differ per maturity and per country.[2]

[1] This box is based on Hannoun (2011).
[2] The buffer was motivated by the exposure to Greek sovereign risk of European banks (mostly concerning French and German banks, as well as Greek banks). However, due to the general valuation at market prices (implying a revaluation of French and German debt) the institutions standing in line for more capital behind Greek banks were their Spanish counterparts (which had virtually no exposure to Greek debt). It is worth noting that the EBA is not proposing changes in the accounting treatment of sovereign exposures.

Box 3.6

New regulatory architecture in the United Kingdom

The reform of the financial regulatory system in the United Kingdom focuses on the transfer of functions from the Financial Services Authority (FSA), in an integrated ("one peak") model, towards a "two peak" model in which prudential supervision and the conduct of business regulation functions are separated. The Bank of England (BoE) will include the Financial Policy Committee (FPC) and the Prudential Regulation Authority (PRA) (as a subsidiary) in charge of macro-prudential and micro-prudential regulation, respectively, while the independent Financial Conduct Authority (FCA) will be in charge of the conduct-of-business supervision.[1]

In the new architecture, the FPC will be responsible for systemic risk identification and monitoring. The FPC will have powers to make recommendations on a "comply or explain" basis to the PRA and the FCA.[2] The PRA will carry out firm-specific regulation of deposit-taking institutions, insurers and the larger, more complex investment firms, from a systemic risk perspective. The FCA will be responsible for regulating conduct of business in the retail and wholesale banking, investment, securities and insurance markets; supervising the trading infrastructure supporting those markets; and for the prudential regulation of firms beyond the scope of the PRA.[3] The FCA's three operational goals are securing an appropriate degree of protection for consumers; promoting efficiency and choice in the market for financial services; and protecting and enhancing the integrity of the UK financial system. The FCA, insofar as is consistent with its general objectives, must promote competition as a significant driver of good conduct by firms.[4]

The government wants to impose a legal duty for the FCA to exercise its functions in co-ordination with the PRA supported by a statutory requirement to agree on a Memorandum of Understanding (MoU), concerning the operation of the regulatory process of dual-regulated firms (deposit-takers, insurers and significant investment firms) and consolidated supervision of groups.[5]

[1] See HM Treasury (2011a,b) and FSA (2011).
[2] The FPC will be chaired by the Governor of the BoE and made up of independent members and is expected to be established by the end of 2012.
[3] The scope of the FCA includes both exchange-operated markets and over-the-counter (OTC) dealing. The BoE will be in charge of clearing and settlement infrastructure.
[4] Possible measures intended to reduce market power include those helping to reduce barriers to entry or exit, and with searching or switching consumers' decisions.
[5] Some elements considered in the future arrangement would be supervisory colleges to assess risks related to a firm or group of firms and to avoid conflicting regulations, authorisation processes, provision from FCA to inform PRA before applying enforcement actions, and coordination in rule-making and policy setting.

should spread to all entities which carry out banking activities.

4. Expected losses of liabilities guaranteed by the government should be covered by a risk premium determined by the market dependent on the risk assumed by the entity. At the same time, the fact that banks which act under the protection of national safety nets are not monitored (moral hazard) makes it necessary to limit their range of activities (particularly, high-risk activities like proprietary trading).[13]

5. Institutions that play a key role in the financial system (where the TBTF doctrine is applied) should be regulated so that they internalise the potential exter-

[13] See Matutes and Vives (2000).

nal effects of their bankruptcy. This can be achieved by means of Pigouvian taxes levied on institutions according to their contribution to systemic risk or by higher equity requirements.[14] Due to the presence of these institutions in global markets, regulatory standards should be uniform and accompanied by internationally coordinated supervision.

6. A fragmentary approach to financial regulation does not work. It is necessary to consider both capital and liquidity needs and the degree of market liberalisation;[15] an alignment of incentives should be encouraged in the system, particularly at all levels, from the Board of Directors to the client, including executives, analysts, traders and credit rating agencies.

7. It is necessary to establish mechanisms to prevent the delay of the supervisor's intervention while the balance sheets of financial institutions deteriorate and capital declines (regulatory forbearance). This has been a typical problem in financial crises, which only make them last longer and increases the damage caused.

The proposed regulatory reform measures are generally in line with the stated reform principles. The question is whether the reform will prove to be ambitious and effective enough. So far, the lack of concreteness has not offered a clear answer, but there are scenarios in which the reforms may fade.

It is yet to be seen if proposals in Basel III will end up setting sufficient standards and not distorting capital and liquidity requirements. Proposals regarding liquidity will affect maturity transformation in the banking sector, since they attempt to limit it and could penalise retail banking (if deposit finance is considered relatively unstable). The foreseeable influence over the shifting border between intermediation and market is more complex. Asset liquidity requirements will render credit less attractive and bonds more attractive, particularly treasuries. This was certainly the case before the EU sovereign debt crisis; and as regards liabilities, retail deposits will be prioritised versus non-secured wholesale funds. The outcome could be a shift to assets disintermediation and liabilities re-intermediation. In fact, maybe there is some tension between the tendency to monitor and reduce securitization on the one hand, and higher capital and liquidity requirements for credit entities, on the other. Indeed, perhaps the banking sector could turn into a kind of narrow bank (where deposits are invested in safe, liquid assets such as public debt, at least before the sovereign debt crisis). Should this be the case, then the first question would be: who will carry out maturity transformation, which used to be the remit of traditional banking? If this task is given to non-regulated entities, the problem of the parallel banking sector will reappear and entities, which turn illiquid assets into liquid liabilities, will continue to be vulnerable, and if they are systemic, they will continue to be rescued.

The accounting treatment of sovereign debt for the purposes of capital requirements and, more generally, the use of marked-to-market in the accounting of banks' assets will continue to be a debated issue. Indeed, the use of marked-to-market accounting in banking is pro-cyclical and has been criticised on the grounds that it induces more instability and because asset prices in crisis situations may not reflect fundamental values due to coordination problems, information and liquidity frictions (see Adrian and Shin 2010, Allen et al. 2009, Plantin et al. 2008). The situation in the euro area with one currency and many sovereigns questions the wisdom of putting a zero weight on sovereign debt for the purposes of calculating the risky assets of a bank. A sovereign that controls its own currency can always avoid speculative runs on its debt by threatening to print money. This is not the case for euro area countries, which issue debt denominated in a currency they do not control. Risk weights for sovereign debt using appropriately market-based information should be used in the euro area and the European Union in general.

As regards reforms in the United States, the Dodd-Frank Act leaves regulation implementation at the discretion of the regulator. Effects will therefore depend upon its implementation. Thus, the law calls for new regulations (there were an estimated 200 new rules by eleven different entities). In addition, the great freedom granted to the regulator may be problematic based on the experiences of past crises. Rules that call for intervention under objective circumstances may prove superior.[16]

A second question is how to prevent implicit and explicit insurance mechanisms, together with limited

[14] See, for example, Acharya et al. (2010).
[15] See Vives (2011c) for an analysis of the necessary links between capital, liquidity and competition regulation

[16] For example, under the Federal Deposit Insurance Corporation Improvement Act (FDICIA 1991), when solvency drops below minimum levels, a bank may not expand its assets. When solvency drops again, recapitalisation may be needed or maximum interest rates may have to be changed on loans and deposits. FDICIA aims to reduce the discretional regulatory right through strict intervention rules, which are to be gradually applied (see Dewatripont and Tirole 1994).

responsibility and opacity of bank assets, from leading to excessive risk-taking. Improvements in resolution mechanisms and efforts to balance sheet transparency are palliative elements, but the problem will persist. The question is whether the subtle separation of activities proposed in the modified *Volcker rule* will go far enough. The issue is particularly important for systemic entities. In this case, it is worth pointing out that what matters as regards systemic risk is the specialisation, connections and position of a bank in the financial system, rather than its size, as can be seen from the Lehman Brothers' case. Besides, in terms of a bank's scope, what causes market problems is the conflict of interest between different activities, whose control should guide possible structural remedies of activity separation. The question is whether enough mechanisms to monitor the conflicts of interests inherent in financial conglomerates have been activated. In general, taxes that aim to repair the damage caused by systemic institutions are superior to restrictions according to the size of the entities. However, governments favour taxes and levies as a source of revenue (and a way to recover the cost of bank bail-outs), rather than as a way to correct externalities. There is debate over whether *ex ante* taxes or insurance funds are preferable to *ex post* taxes to finance bail-outs. *Ex ante* taxing is preferable as long as it discriminates between the different entities according to their risk profile. Proposals to tax only debt-financed assets ignore other sources of systemic risk (such as entities interconnections). The proposed FTT in the European Union may raise substantial revenues, but it is doubtful that it will help to diminish systemic risk, and its effects on price volatility may be ambiguous. Furthermore, the burden of the FTT is most likely to fall on consumers of financial products. Potential benefits of the FTT are that it may correct potential under-taxation of the financial sector due to the VAT exemption and curb the potentially damaging effects of high-frequency trading (where the incentives to invest in and react to information ahead of the market may be excessive). All in all the FTT should stand or fall on its effectiveness to correct the negative externalities of "excessive" financial transactions, rather than on being an instrument to raise revenue (for which other instruments may be more effective and less distortionary).[17]

Other aspects of the regulatory reform can also be questioned. It is questionable, for example, whether corporate governance reforms can be effective without addressing the fundamental problem of incentives generated by deposit insurance and bail-outs of TBTF entities which, together with limited responsibility, lead shareholders to take excessive risks from a social point of view. It is not clear that restrictions on short selling improve the functioning of the market when the real problem is market manipulation. Another issue is how to make sure that credit rating agencies incentives are socially aligned.

Regulatory reform may have a remarkable impact on the degree of internationalisation of the banking sector. In fact, capital requirements for minority ownership will have important consequences in the international expansion of financial entities, and the tendency to isolate entities' problems in the countries where they arise may offer incentives to create supranational entities with a collection of capitalised, independently regulated and supervised subsidiaries (in the European Union, for example, replacing branch offices with national subsidiaries). This may curb European financial integration.

3.7 Conclusions

The crisis has laid bare major weaknesses in the regulation and supervision of the financial system and it leaves more doubts and questions than certainties about steps to be taken in the future. Regulation faces the challenge of making the financial system more resistant and stable without hindering development, while protecting public interest, innovation and preserving globalisation. A strong response to this challenge is crucial since the financial system plays a key role in economic growth. There is no contradiction between the stability of the financial system and economic growth. On the contrary, an unstable financial system will imply high cost for the economy because of the incidence of crises and because it directs too much capital into risky activities. The financial sector, which is perceived to have enjoyed excessive returns and taken excessive risks in the past, now faces the need to recover confidence and its reputation, and to adapt to a new and stricter regulatory atmosphere.

Hence, the financial sector will have to adjust the size to its contribution to the development of the economy. Regulatory changes will have a significant effect on defining business models and strategies for the internationalisation of financial intermediaries, though, for the time being, uncertainty is high because many of the planned reforms have not yet been specifically formulated. The reform process seems to be going in

[17] See the discussion in EEAG (2011), Chapter 5.

the right direction, although we shall have to await the implementation phase in order to be able to assess its effectiveness.

In the European Union the reform of financial architecture is pressing due to the persistent banking problems related to the sovereign debt crisis. The euro area should be stabilised with a credible liquidity facility for solvent sovereigns facing speculative attacks and with a restructuring facility for countries that are insolvent or face what we had called in our last year's report "impending insolvency".[18] Furthermore, its financial architecture must be completed. The ECB should explicitly assume the function of guarantor of the financial system (in terms of liquidity provision to private banks, not to recapitalise insolvent banks with artificially reduced interest rates) and should have sufficient supervisory powers over systemic institutions and macro-prudential control. It would also be advisable to link the European prudential authority more closely with the ESCB. A formal framework of crisis resolution should be established and the chain of command in a crisis situation needs to be clearly identified with the ECB at its centre. Furthermore, burden sharing agreements for bank resolution have to be put in place together with a European resolution authority that can be combined with a European deposit insurance fund for institutions that can potentially generate systemic problems in the financial system in the euro area.

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[18] See EEAG (2011), Chapter 2.