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**IMPACT ASSESSMENT**

*Accompanying the document*

**Regulation of the European Parliament and the Council  
on prudential requirements for the credit institutions and investment firms**

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This document commits only the Commission's services involved in its preparation and does not prejudice the final form of any decision to be taken by the Commission

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## 1. INTRODUCTION

The extent of the financial crisis has exposed unacceptable risks pertaining to the current regulation of financial institutions. These risks proved substantial and systemic in times of serious turbulence. According to the IMF<sup>1</sup> estimates, crisis-related losses incurred by European banks between 2007 and 2010 are close to €1 trillion or 8% of the EU GDP. The crisis did not stay limited to the financial sector but spread to the real economy as well: it plunged the EU economy in a severe recession, with the EU GDP contracting by some 6% in 2009.

In order to restore confidence and stability in the banking sector and ensure that credit continues to flow to the real economy, both the EU and its Member States (MS) adopted a broad range of unprecedented measures with the taxpayer ultimately footing the bill. In this context, between October 2008 and October 2010 the European Commission (Commission) has approved €4.6 trillion (equivalent to 39% of the EU GDP) of state aid measures<sup>2</sup> to financial institutions of which more than €2 trillion were effectively used in 2008 and 2009. Combined with fiscal measures aimed at pulling EU economies out of the recession, supportive measures to the banking industry contributed to higher budget deficits and pushed sovereign indebtedness levels up. This intensified markets' perception of rising sovereign risks, imposing second-round costs on the MS.

The unprecedented level of fiscal support to banks needs to be matched with a robust reform addressing the regulatory shortcomings exposed during the crisis. In recognition of this, the Commission already proposed certain amendments to bank regulation in October 2008 (CRD II<sup>3</sup>) and July 2009 (CRD III<sup>4</sup>). However, to prevent recent problems from occurring in the future and ensure that risks linked to the broader issues of financial instability and procyclicality are more effectively contained, additional internationally coordinated changes to the EU capital and liquidity regulation of banks are needed.

## 2. PROCEDURAL ISSUES AND STAKEHOLDER CONSULTATION

### 2.1. Stakeholder consultation

Throughout the project the Commission services have closely followed and participated in the work of international forums, particularly the Basel Committee<sup>5</sup> in charge of developing the

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<sup>1</sup> IMF, *Meeting New Challenges to Stability and Building a Safer System*, April 2010

<sup>2</sup> Measures comprise €3 trillion of guarantees, €138 billion of liquidity and bank funding support, €546 billion of approved state recapitalisations and €349 billion of asset relief

<sup>3</sup> Consisting of a 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, Commission Directive 2009/27/EC of 7 April 2009 amending certain Annexes to Directive 2006/49/EC, and Commission Directive 2009/83/EC of 27 July 2009 amending certain Annexes to Directive 2006/48/EC

<sup>4</sup> Directive 2010/76/EU of the European Parliament and of the Council of 24 November 2010 amending Directives 2006/48/EC and 2006/49/EC as regards capital requirements for the trading book and for re-securitisations, and the supervisory review of remuneration policies

<sup>5</sup> The Basel Committee on Banking Supervision consists of central bank and supervisory authority representatives from twenty seven countries. Nine EU MS are represented: BE, FR, DE, IT, LU, NL, ES, SE, and UK. The Commission participates as an observer in the Committee and in its working groups.

Basel III framework. The European Banking Committee (EBC) and the Committee of European Banking Supervisors (CEBS, as of 2011 replaced by the European Banking Authority) – the committees of the Lamfalussy process - have been extensively involved and consulted throughout the project. Their views have contributed to the preparation of this impact assessment and the proposal that it accompanies. Consultative work with other stakeholder groups has been conducted in part through these committees.

### *2.1.1. CEBS*

In November 2009, the Commission invited CEBS to conduct a comprehensive quantitative impact study (QIS) on the impact of the CRD IV legislative proposal that this impact assessment accompanies on the EU banking industry. 246 banks from 21 member countries of CEBS participated in the study, including 50 Group 1<sup>6</sup> banks and 196 Group 2 banks, representing some 70% of the consolidated European banking sector in terms of capital.

A significant share of total assets of EU credit institutions of €42 trillion<sup>7</sup> is owned by Group 1 banks (for more on the economic and financial importance of the banking sector in Europe, see Annex III). Given differences as regards their size, nature of activities, risk profile and risk management approaches, results from the EU QIS for Group 1 and Group 2 banks throughout this report are analysed separately. The results have been anonymised to preserve confidentiality of MS-level indicators (on request of the participating MS).

In response to the Commission's calls for advice, CEBS also conducted extensive public consultations and in October 2008 submitted a technical advice in the area of national options and discretions.<sup>8</sup>

### *2.1.2. CRD Working Group*

In the area of national options and discretions, between 2008 and 2011 the Commission services held six meetings of the CRD Working Group (CRDWG), whose members are nominated by the EBC. The group worked on preparing a 'single rule book' in banking, on the basis of CEBS' technical advice. For a detailed list of provisions analysed by the CRDWG, please refer to Annex II.

Other parts of the proposal were discussed by the CRDWG four times in 2010 - 2011. In addition, sub-groups of the CRDWG in the areas of liquidity, capital definition, leverage ratio, counterparty credit risk and capital buffers have also been established to conduct work at an even more technical level and to develop legislative drafts in the respective areas.

### *2.1.3. Other public consultations*

The preparatory work related to the CRD IV proposal started already in 2009 when the Commission services conducted a first public consultation<sup>9</sup> on the latest wave of possible amendments to the CRD. This was followed by a consultation that ran in February - April of 2010<sup>10</sup> and included questions on potential policy measures pertaining to liquidity and counterparty credit risk management, capital definition, leverage ratio, capital buffers, and the

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<sup>6</sup> Group 1 banks are those that have Tier 1 capital in excess of €3 billion, are well diversified, and are internationally active. All other banks are considered Group 2 banks.

<sup>7</sup> ECB, *EU Banking Structures*, September 2010

<sup>8</sup> See <http://www.c-ebs.org/getdoc/354c6e4c-f22a-46a0-9025-0c55f460a5a6/2008-17-10-Final-Advice-on-options-and-national-di.aspx>

<sup>9</sup> See [http://ec.europa.eu/internal\\_market/consultations/2009/capital\\_requirements\\_directive\\_en.htm](http://ec.europa.eu/internal_market/consultations/2009/capital_requirements_directive_en.htm)

<sup>10</sup> See [http://ec.europa.eu/internal\\_market/consultations/2010/crd4\\_en.htm](http://ec.europa.eu/internal_market/consultations/2010/crd4_en.htm)

'single rule book'. A third consultation elaborating on the possible design of a countercyclical capital buffer ran in October - November 2010.<sup>11</sup> A fourth consultation on capital requirements for certain types of counterparty credit risk was conducted in February - March 2011.<sup>12</sup>

In April 2010 the Commission services conducted an open public hearing on the CRD IV proposal. The event was actively attended by all the stakeholder groups, including the industry, regulators, supervisors, non-financial companies, and international organisations.

Responses to the four public consultations and views expressed at the public hearing constitute an important source of stakeholder views on effectiveness of potential policy measures and are reflected throughout the report.

In addition, the Commission services conducted separate extensive consultations with the industry, including the Group of Experts in Banking Issues (GEBI), various EU banking industry associations and individual banks.

## **2.2. Consultation with other services of the Commission**

### *2.2.1. Inter-service Steering Group*

An Inter-Service Steering Group (ISSG) was set up to follow progress and feed in views from other services of the Commission, including Directorates-General for Enterprise and Industry, Economic and Financial Affairs, Taxation and Customs Union, Health and Consumers, Competition, Legal Service, and Secretariat General. Experts from the Directorate-General for Economic and Financial Affairs contributed to this impact assessment with analyses of implications of the proposal for the macro-financial stability and of macro-economic impacts during a transitional period (see Annex IX). The ISSG met four times in 2009 and five times in 2010.

### *2.2.2. Impact Assessment Board*

The draft impact assessment was discussed with the Impact Assessment Board (IAB) of the Commission on 10 November 2010. On the basis of the IAB comments, a new simplified and shortened report for non-expert readers has been prepared. The initial draft, with a number of amendments, has been maintained to provide for a more detailed assessment of impacts (see Annex I: Extended Impact Analysis). These amendments, made in response to the IAB recommendations, included:

- changes to the presentation of policy options related to February 2010 public consultation of the Commission services;
- clarification on which preferred policy options are aligned with Basel III and which ones are not (and if so, how they differ from Basel III);
- inclusion of references to the work of the Basel Committee underpinning the calibration of new capital requirements and an explanation for why some 3<sup>rd</sup> countries indicated their intention to opt for higher thresholds;
- elaboration on the impact of the package on banks with different business models, costs for bank clients, and the probability of next banking crisis;
- more extensive overview of stakeholders' views expressed during public consultations;

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<sup>11</sup> See [http://ec.europa.eu/internal\\_market/consultations/2010/capitalbuffer\\_en.htm](http://ec.europa.eu/internal_market/consultations/2010/capitalbuffer_en.htm)

<sup>12</sup> See [http://ec.europa.eu/internal\\_market/consultations/2011/credit\\_risk\\_en.htm](http://ec.europa.eu/internal_market/consultations/2011/credit_risk_en.htm)

- clarification on the scope of the initiative concerning the single rule book, application of the preferred option in practice, and assessment of effectiveness of policy options considered in this area with respect to enhancing financial stability; and
- explicit linking of policy options to identified problems (see Table 1).

The IAB examined the above revisions and subsequently issued additional recommendations that have been reflected as appropriate in this impact assessment. More specifically, further clarifications have been introduced as regards differences between the preferred options and Basel III, presentation of policy options in the area of the single rule book, proposals for higher capital thresholds in certain jurisdictions and impact on small and medium sized banks and their clients.

**Note:** Annex I (Extended Impact Analysis) follows the structure of this report in terms of section numbering. Therefore, for additional background and more in-depth analyses pertaining to individual sections of this report the reader should refer to respective sections of Annex I.

### 3. PROBLEM DEFINITION

#### 3.1. Background

The current EU bank capital framework is represented by the Capital Requirements Directive (CRD) comprising Directives 2006/48/EC and 2006/49/EC and reflecting the proposals of the Basel Committee for the Basel II Framework<sup>13</sup> (Basel II) and Trading Book Review<sup>14</sup>. It covers both credit institutions and investment firms and stipulates the minimum amounts of own financial resources that banks must have in order to cover the risks to which they are exposed.

The financial crisis has unveiled a number of shortcomings of Basel II and necessitated unprecedented levels of public support in order to restore confidence and stability in the financial system. In the EU, the effective level of public support for the banking sector reached, on average, 11% of GDP as of October 2010 with the corresponding metric for a number of MS well in excess of the EU average. This prompted a broad EU and international effort to identify the reasons behind the problems and to develop effective policies to tackle them head-on. In this context, already in November 2008, the Commission mandated a High Level Group (HLG) chaired by Mr. Jacques de Larosière to propose recommendations for reforming European financial supervision and regulation. The thirty one recommendations<sup>15</sup> of the HLG represented a comprehensive set of concrete possibilities for regulatory, supervisory and global repair action and were elaborated in the Commission's Communication<sup>16</sup> for the spring European Council of 4 March 2009. Most of the proposals that this impact assessment accompanies are listed in the detailed action plan included in the Communication.

Given the level of integration within the global financial system, however, reaching an international consensus on measures that would be effective in containing the problems

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<sup>13</sup> See <http://www.bis.org/publ/bcbs107.htm>

<sup>14</sup> See <http://www.bis.org/publ/bcbs116.htm>

<sup>15</sup> See [http://ec.europa.eu/internal\\_market/finances/docs/de\\_larosiere\\_report\\_en.pdf](http://ec.europa.eu/internal_market/finances/docs/de_larosiere_report_en.pdf)

<sup>16</sup> See [http://ec.europa.eu/commission\\_barroso/president/pdf/press\\_20090304\\_en.pdf](http://ec.europa.eu/commission_barroso/president/pdf/press_20090304_en.pdf)

identified is crucial. In this regard, the G-20 Declaration of 2 April 2009<sup>17</sup> conveyed the commitment of the global leaders<sup>18</sup> to address the crisis with internationally consistent efforts to, among others, improve the quantity and quality of capital in the banking system, introduce a supplementary non-risk based measure to contain the build-up of leverage, develop a framework for stronger liquidity buffers at financial institutions and implement the recommendations<sup>19</sup> of the Financial Stability Board (FSB)<sup>20</sup> to mitigate the pro-cyclicality.

In response to the mandate given by the G-20, in September 2009 the Group of Central Bank Governors and Heads of Supervision (GHOS), the oversight body of the Basel Committee, agreed<sup>21</sup> on a number of measures to strengthen the regulation of the banking sector. These measures were endorsed by FSB and the G-20 leaders at their Pittsburgh Summit of 24-25 September 2009<sup>22</sup> and were fleshed out in detail and made available for stakeholder comments in two consultation documents of the Basel Committee in December 2009<sup>23</sup>. In February – April 2010 the Commission conducted a parallel public consultation within the EU, going beyond the set of measures covered by the documents of the Basel Committee.

In December 2010, the Basel Committee issued detailed rules of new global regulatory standards on bank capital adequacy and liquidity that collectively are referred to as Basel III.<sup>24</sup> The proposal that this impact assessment accompanies directly relates to the regulatory standards included in Basel III.

The following sub-sections present the analysis of the main problems and drivers underlying them for the CRD areas under review. A 'problem tree' is included at the end of the section.

### 3.2. Management of liquidity risk

Problem Drivers	Problems
<ul style="list-style-type: none"> <li>- Shortcomings in liquidity risk management, including stress testing</li> <li>- Asset and liability maturity mismatches</li> <li>- No harmonized and sufficiently explicit regulatory treatment at EU level</li> </ul>	<ul style="list-style-type: none"> <li>- Existing liquidity risk management approaches and supervisory regimes inadequately captured risks inherent to the underlying market practices and trends, contributing to bankruptcy of several institutions and strongly undermining financial health of many others, threatening the financial stability and necessitating unprecedented levels of central bank liquidity and government support</li> <li>- Differences in national liquidity regimes give rise to level-playing field issues for cross-border firms and hamper effectiveness of supervision as well as cooperation between supervisory authorities</li> </ul>

Funding liquidity risk arises because inflows and outflows of funds at banks are not synchronised. A bank is deemed to be liquid as long as at each point in time outflows of funds

<sup>17</sup> See [http://www.g20.org/Documents/Fin\\_Deps\\_Fin\\_Reg\\_Annex\\_020409 - 1615\\_final.pdf](http://www.g20.org/Documents/Fin_Deps_Fin_Reg_Annex_020409_-_1615_final.pdf)

<sup>18</sup> European leaders expressed their support for these measures at the European Council of 19-20 March 2009

<sup>19</sup> The report of FSB on Addressing Procyclicality in the Financial System (see [http://www.financialstabilityboard.org/publications/r\\_0904a.pdf](http://www.financialstabilityboard.org/publications/r_0904a.pdf)) set out fifteen recommendations to mitigate mechanisms that amplify procyclicality by covering three areas: bank capital framework, bank loan loss provisions, and leverage and valuation issues. The proposal that this impact assessment accompanies directly relates to a number of recommendations issued by FSB.

<sup>20</sup> FSB promotes international financial stability through information exchange and international co-operation in financial supervision and surveillance. It brings together national authorities responsible for financial stability in international financial centres, international financial institutions, sector-specific international groupings of regulators and supervisors, and committees of central bank experts.

<sup>21</sup> See <http://www.bis.org/press/p090907.htm>

<sup>22</sup> See [http://www.g20.org/Documents/pittsburgh\\_summit\\_leaders\\_statement\\_250909.pdf](http://www.g20.org/Documents/pittsburgh_summit_leaders_statement_250909.pdf)

<sup>23</sup> See <http://www.bis.org/publ/bcbs164.htm> and <http://www.bis.org/publ/bcbs165.htm>

<sup>24</sup> See <http://www.bis.org/publ/bcbs189.htm> and <http://www.bis.org/publ/bcbs188.htm>



are smaller or equal to the sum of inflows and its stock of liquid assets. Therefore, it should manage its liquidity risk with a view to ensure that the above constraint is never breached. The global financial crisis that started in summer of 2007 has brought to light various shortcomings in current liquidity risk management approaches that incapacitated a number of financial institutions to comply with this constraint.

Existing bank liquidity risk management approaches, including liquidity stress tests, and supervisory regimes were shown to be inadequate in fully grasping risks inherent to the underlying market practices, such as originate-to-distribute securitization, use of complex derivative instruments and reliance on wholesale funding with short-term maturity instruments. In the run-up to the crisis, many financial institutions have increasingly turned to the capital markets for funding their operations with instruments of shorter maturity and became reliant on wholesale funding sources such as commercial paper, repurchase agreements ('repos'), and interbank markets.<sup>25</sup> Events of the crisis clearly illustrated that during times of market stress investors exhibit heightened risk aversion by demanding higher compensation for risk, requiring banks to roll over liabilities at considerably shorter maturities or refusing to extend financing altogether.<sup>26</sup>

Also, banks' assumptions pertaining to asset liquidity in secondary markets as well as its interaction with funding liquidity turned out to have been erroneous. If asset markets are liquid, assets can be sold at their fair value or hypothecated at low haircuts. However, bank assets have a potential to become illiquid, in particular in stressed conditions when market participants withdraw from the relevant markets. Then they can only be sold at a discount or hypothecated at much higher haircuts. Moreover, many financial institutions also underestimated the extent of the interaction between market liquidity and funding liquidity. Rising arrears on US sub-prime mortgages that were extensively packaged in residential mortgage backed securities caused investors to lose faith in ratings of these and other structured products and led to heightened concerns about accuracy of their valuation. The loss of investor confidence was transmitted through a fall in their price, as market liquidity for such securities evaporated, to an increase in funding risk as margins and haircuts related to them increased. In turn, this forced additional deleveraging and selling, effectively creating a vicious feedback loop between deteriorating market liquidity and disappearing funding liquidity.

As of August 2007, money markets also tightened because banks started hoarding liquidity to better position themselves against possible funding shortfalls. Such behaviour was further intensified due to a lack of understanding about the level of exposure to difficult-to-value and potentially impaired assets and, in relation to this, financial health of other institutions.

The above factors were not properly captured by the bank liquidity risk management and contributed to a demise of several financial institutions and strongly undermined health of

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<sup>25</sup> According to Barclays Capital, over decade leading to the crisis, European bank wholesale funding as % of balance sheet has increased from 40% to 70%.

<sup>26</sup> Bear Sterns failed in March 2008 once it found itself unable to secure funding on the repo market and was subsequently taken over JPMorgan Chase. Lehman Brothers, another US investment bank, filed for bankruptcy in September 2008, in part because of difficulties in addressing similar funding liquidity-related problems. UK mortgage lender Northern Rock collapsed in September 2007, following a first wave of illiquidity in the interbank market. Failures of Bradford & Bingley and HBOS in September 2008 were also partially driven by their reliance on wholesale funding markets.

many others, threatening the financial stability and necessitating unprecedented levels of public sector and central bank liquidity support.<sup>27</sup>

While currently a number of MS impose some form of quantitative regulatory standard for liquidity, no harmonised sufficiently explicit regulatory treatment on the appropriate levels of short-term and long-term liquidity exists at the EU level. Differences in national liquidity regimes arise from different degrees of resilience to liquidity stress that different MS aim at as well as certain nationally determined factors such as insolvency regimes, deposit insurance arrangements, central bank credit and collateral policies. As regards supervisory reporting, diversity in current national approaches hampers effective communication and cooperation between supervisory authorities and imposes additional costs on cross-border institutions, causing potential level-playing field issues.

### 3.3. Eligibility of capital instruments and application of regulatory adjustments

Problem Drivers	Problems
<ul style="list-style-type: none"> <li>- Certain capital instruments did not fulfil loss absorption, permanence and flexibility of payments criteria</li> <li>- List of regulatory adjustments incomplete or applied not to a relevant layer of regulatory capital</li> <li>- Lack of harmonization in application of regulatory adjustments</li> </ul>	<ul style="list-style-type: none"> <li>- Tier 1 capital ratios reported by banks and, thus, their capital were not reflective of their capacity to absorb losses on a going-concern basis. As the crisis deepened and banks faced growing losses and writedowns, their fundamental solvency was called into question, leading to broader financial instability and necessitating extensive public sector support</li> <li>- Variations in the definition of Tier 1 capital stemming from differences in application of adjustments across the MS obstructed its comparability and reliability, leading to market participants' and regulators' focus on alternative measures</li> </ul>

The EU banking system entered the crisis with capital of insufficient amount and quality. Mounting losses forced banks to rebuild their capital bases at the time when it was most difficult to do so, in turn, necessitating governments to provide support to the banking sector in many countries and on a massive scale and contributing to the onset of economic downturn.

The crisis has shown that certain capital instruments did not meet the expectations of markets and regulators with regard to their loss absorption, permanence and flexibility of payments capacity on a going-concern basis. This in particular pertains to hybrid capital instruments (hybrids) and certain types of non-hybrid instruments that make part of banks' Tier 1 capital.

When these instruments included a possibility to defer or cancel a coupon (i.e., criterion of flexibility of payments) to enable banks to conserve resources during difficult times<sup>28</sup>, such possibility was not widely exercised. This was in part driven by a stigma of dividend cancellation being interpreted by the market as a signal of distress. Effectively, the outflow of dividends and coupons contributed to the weakening of the banking sector at the time when capital was most needed. As regards the criterion of permanence, there were instances of banks redeeming hybrids despite the higher cost of replacing them at the time of crisis. This was in particular true when market expectations were based on instrument's contractual terms that provided for an incentive to redeem the instrument by increasing the interest rate to be paid if redemption is not executed.<sup>29</sup> Instances of hybrid capital instruments absorbing losses

<sup>27</sup> Between September and December 2008, ECB loans to the euro area credit institutions increased by some 70% to over €800 billion. For public sector support, please see footnote #2.

<sup>28</sup> According to CEBS, in 2006 some 80% of hybrids reported by EEA banks as Tier 1 capital had a right for issuers to suspend payments in case of solvency difficulties and in other situations

<sup>29</sup> According to CEBS, in 2006 42% of hybrids (mostly innovative instruments) reported by EEA banks as Tier 1 capital had such feature at the time of their issue

during the crisis have also been rare. As a result, the crisis effectively delineated those capital instruments that acted as a 'going-concern' capital from those that acted rather as a 'gone-concern' capital. In fact, skipping options to redeem<sup>30</sup> and cancelling / deferring coupon payments<sup>31</sup> on hybrid capital became more prevalent only later in the crisis, in the context of state aid to financial institutions, and was in part due to the Commission policy that included the objective of 'burden sharing'.<sup>32</sup>

Another problem lied in the fact that the list of adjustments to regulatory capital proved to be incomplete as certain balance sheet items such as minority interests<sup>33</sup> and deferred tax assets (DTAs)<sup>34</sup> whose loss absorption potential is less certain on a going-concern basis in times of market distress have been effectively removed by market participants and regulators from capital ratios as reported by individual institutions. The crisis also showed that regulatory adjustments when applied were not applied to the appropriate layer of regulatory capital. Under the CRD, the current adjustments are generally applied on a 50%-50% basis to Tier 1 and Tier 2.<sup>35</sup> This allowed banks to report high Tier 1 ratios, despite the fact that they had low levels of Tier 1 capital (as perceived by the markets) when entirely excluding adjustments such as for investments in other financial institutions in excess of 10% of the common stock of such institutions.<sup>36</sup>

Currently, regulatory adjustments in the EU are not harmonised, as MS have discretion to apply additional adjustments.<sup>37</sup> As regards minority interests, MS have discretion to include it in the regulatory capital.<sup>38</sup> The resultant variations in the definition of Tier 1 capital across MS obstructed the comparability and further compromised the reliability of this measure. This led to the loss of confidence in Tier 1 as measure of capital adequacy prompting market participants and regulators to instead focus on alternative measures, mostly based on common equity, net of balance sheet elements whose loss absorption potential proved to be uncertain during market distress.

The above shortcomings contributed to the banking sector entering the crisis with reported Tier 1 capital ratios that were not reflective of institutions' effective capacity to absorb losses on a going-concern basis. As the crisis deepened and banks faced growing losses and

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<sup>30</sup> This was the case for RBS, Bradford & Bingley, KBC Group

<sup>31</sup> This was the case for BayernLB, Commerzbank, Lloyds, RBS, Allied Irish Banks, Bank of Ireland, Cajasur

<sup>32</sup> Commission communication on the return to viability and the assessment of restructuring measures in the financial sector in the current crisis under the State aid rules; see <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:195:0009:0020:EN:PDF>

<sup>33</sup> Minority interest represents shares issued by a group entity and is available primarily to absorb losses which occur in that entity. However, minority interest may not necessarily be readily available to absorb losses elsewhere in a group, including the consolidating entity. Therefore, in cases where a group entity is overcapitalised, inclusion of minority interest at the consolidated entity level may represent an artificial enhancement to its capital ratios. According to HSBC, at the end of 2009 minority interests contributed €95 billion to European bank capital.

<sup>34</sup> DTAs can be defined as the amounts of income taxes that may be recovered by a company in the future. However, DTAs whose realisation through reduced future tax payments is contingent on a bank's ability to generate profits raise prudential concern as they may not provide protection to depositors in case of insolvency.

<sup>35</sup> Article 66

<sup>36</sup> A deduction from Tier 1 capital only in this case is warranted to prevent a reduction in capital as a result of loss absorption in one financial institution from being immediately reflected as a loss of capital in the investing financial institution.

<sup>37</sup> Article 61

<sup>38</sup> Article 65

writedowns which directly reduced their retained earnings, their fundamental solvency was called into question.

**3.4. Counterparty credit risk**

Problem Drivers	Problems
<ul style="list-style-type: none"> <li>- Current provisions do not adequately capture CCR</li> <li>- Shortcomings in risk management practices as regards back testing, stress testing and collateral management</li> <li>- Current provisions do not entail sufficient incentives to move bilaterally cleared OTC instruments to central counterparties and to post adequate initial margin</li> </ul>	<ul style="list-style-type: none"> <li>- Existing provisions did not ensure appropriate risk management of financial institutions as well as adequate and non-cyclical regulatory requirements against CCR that materialised during the crisis</li> <li>- Calibration of provisions did not provide sufficient incentives to clear bilateral OTC instruments through central counterparties, leading to lack of confidence and exacerbating instability in times of market stress</li> </ul>

The crisis revealed a number of shortcomings in the current regulatory treatment of counterparty credit risk (CCR) exposures arising from derivatives, repos and securities financing activities. For instance, while the CRD covers the risk of counterparty default, it does not address the credit valuation adjustment (CVA) risk, associated with deterioration in the creditworthiness of a counterparty. Yet, during the crisis roughly two-thirds of counterparty credit losses were due to CVA losses with the remainder due to actual defaults. Current provisions also do not recognize the unique, systemic risk associated with exposures associated with over-the-counter (OTC) derivatives given the extent to which they are concentrated at large financial institutions, whose counterparties generally are other large financial institutions. Given such interconnectedness, financial institutions' credit quality deteriorated simultaneously proving them to be relatively more sensitive to systemic risk than non-financial firms. Under current rules, the CCR capital requirement was too low during the period preceding the crisis, but increased rapidly as the financial turmoil started, making the requirement pro-cyclical. The crisis also revealed a number of significant shortcomings in institutions' risk management of counterparty credit exposures, including in particular the areas of back-testing, stress testing, and collateral management.

The existing framework did not provide sufficient incentives to move bilaterally cleared OTC derivative contracts to multilateral clearing through central counterparties (CCPs). Even though CCPs can play an important role in the efforts to reduce the systemic risk arising from the intricate web of exposures formed by holdings of derivative products by banks, they were not widely used to clear trades. Regulatory capital requirements for bilaterally cleared trades were not sufficiently high to offer an attractive incentive to clear OTC derivative trades through a CCP. Instead, the need to post initial margin when clearing trades with a CCP apparently more than offset the fact that no regulatory cost was involved for such trades.

**3.5. Pro-cyclicality of lending**

Problem Drivers	Problems
<ul style="list-style-type: none"> <li>- Market failures, including limitations in risk measurement, information asymmetries and inappropriate responses to risk and changes in economic conditions</li> <li>- Irresponsiveness of regulatory requirements to risk build-up at the macro level</li> <li>- Lack of explicit limits to leverage of</li> </ul>	<ul style="list-style-type: none"> <li>- Inappropriate responses to risk and other market failures contribute to leverage build-up and a concomitant overextension of credit in the economic upturn and cause banks to maintain generous discretionary distributions during periods of stress, when capital should be conserved</li> <li>- Lack of a limit to leveraging capital and irresponsiveness of capital requirements to the build-up of risk at the macro level led to accumulation of financial imbalances which precipitated steep credit-related losses and, once the economic cycle turned, prompted a de-</li> </ul>

<b>Problem Drivers</b>	<b>Problems</b>
credit institutions	leveraging spiral

Pro-cyclical effects can be defined as those which tend to follow the direction of and amplify an economic cycle. In this regard, bank lending also can contribute to amplification of business fluctuations, which in turn may exacerbate financial instability. The cyclical nature of bank lending has many, often interconnected sources that include both market and regulatory failures.<sup>39</sup>

While financial institutions fare better at assessing relative risk, they have difficulties in assessing absolute level of risk especially over a prolonged period, and so rarely identify booms with consequences for systemic risk. The misperception of risk may be exacerbated by a strong industry-wide drive for profit and moral hazard of implicit safety nets. Hence, when macro-economic conditions were favourable, banks engaged in a rapid expansion of their balance sheets without due consideration about implications for system-wide financial stability.

When economic conditions became depressed and collateral values declined, information asymmetries with respect to the quality of clients' balance sheets impeded access to funding even for borrowers with profitable projects. Such pro-cyclical effects proved to be more pertinent to borrowers which are more prone to asymmetric information, including small and medium-sized enterprises not subject to external ratings and extensive disclosure requirements.

Inappropriate responses of financial institutions to changes in economic conditions in some cases could be explained by short-term bias of remuneration structures or herding behaviour. While, given the difficulties to raise capital, banks should have made greater efforts to rebuild regulatory capital (to limit its depletion due to accumulating losses), many of them maintained generous discretionary distributions to their shareholders, providers of other capital instruments and employees.<sup>40</sup>

One feature of current risk-based minimum capital requirements is that they vary over the economic cycle. Provided credit institutions could meet them, there is no explicit regulatory constraint on leverage of institutions. The lack of a limit to their leverage and irresponsiveness of regulatory capital requirements to the build-up of risk at the macro level enabled banks to recklessly grow their balance sheets.<sup>41</sup> Increases in leverage combined with investment in more risky products allowed many banks to seek higher returns, as high levels of available liquidity resulted in risk premia falling to historically low levels. When financial asset prices started to fall, assets had to be marked-to-market for losses incurred and banks had to de-

<sup>39</sup> For a thorough description of the main sources of pro-cyclicality please see:

BIS, *Addressing financial system procyclicality: a possible framework*, Note for the FSF Working Group on Market and Institutional Resilience, September 2008; and

Masschelein, N., *Monitoring pro-cyclicality under the capital requirements directive: preliminary concepts for developing a framework*, NBB Working Paper Document No. 120, 2007

<sup>40</sup> Dividends of 21 large banks from the US and Europe increased from 0.4% of their assets in 2000 to 1.1% in 2007 and were still at 0.7% through the first three quarters of 2008, in spite of a deepening financial crisis. Acharya, V., I. Gujral, and H. S. Shin, *Bank Dividends in the Crisis: A Failure of Governance*, March 2009

<sup>41</sup> ECB's analysis of credit-to-GDP gap from 1995 to 2009 in 19 MS showed that credit in the years preceding the financial crisis grew at a fast pace in a number of them (e.g., IE, LV, LT, HU), signalling accumulation of risk at the systemic level and imminence of significant credit-related losses for their banking sectors.

leverage by selling them in order to minimize regulatory capital requirements and meet margin calls from their counterparties, prompting further asset price declines (see section 3.2 for the interaction between market liquidity and funding liquidity). According to the IMF estimates, between 2007 and 2010 crisis-related writedowns and loan provisions on bank assets originated globally reach \$2.3 trillion, \$1.3 trillion of which is attributable to European banks, equivalent to 8% of the EU GDP.

Policy measures<sup>42</sup> adopted by the Commission so far address only some specific aspects of the above-listed market and regulatory failures and, therefore, may not be entirely effective in limiting the extent of leverage build-up in the balance sheets of financial institutions and the concomitant overextension of credit. In June 2010 the Commission adopted a report<sup>43</sup> on effects of the CRD on the economic cycle noting that it would examine additional measures to mitigate the pro-cyclicality. These measures i) should limit the build-up of leverage in the banking sector, thus, helping to contain the risk of destabilising deleveraging processes and ii) should curb the excessive risk-taking in times of economic growth but could be drawn down during economic downturns to increase resilience of the banking sector and support the credit flow to the economy.<sup>44</sup>

**3.6. Options, discretions and minimum harmonisation**

Problem Drivers	Problems
<ul style="list-style-type: none"> <li>- Diverging national rules due to the inclusion in the CRD of a number of national options and discretions</li> <li>- Gold-plating of the current provisions</li> <li>- Lack of detail within certain CRD provisions that allow for supervisory judgement and / or choice to be made</li> </ul>	<ul style="list-style-type: none"> <li>- Diverging national rules allow for competitive distortions in the internal market and lead to a fragmented and inconsistent financial supervision, impeding legal clarity and resulting in excessive administrative burden for cross-border banks.</li> <li>- Mutual recognition of 'host' MS treatment at consolidated level creates opportunities for regulatory arbitrage whereas application of 'home' MS discretions at 'host' level hinders supervisory cooperation and level playing field</li> </ul>

Over the recent years the EU banking market has become highly integrated: currently around 70% of EU banking assets is in the hands of some 40 banking groups with substantial cross-border activities. However, efficiency of the internal market in wholesale and retail banking services is undermined by divergences in national rules on capital and liquidity requirements.

The CRD is a recast of the Consolidated Banking Directive (2000/12/EC), resulting in some 150 national options and discretions. The CRD is also a 'minimum harmonisation' directive.<sup>45</sup> This means that MS may 'add' stricter prudential rules, which gives rise to a practice known as 'gold-plating'. Divergences in national rules stemming from the possibility of application of national options, discretions and gold-plating are exacerbated by the process of transposition itself. Finally, national rules transposing the CRD are interpreted in accordance with local traditions and approaches thereby deepening the divergences in application of the CRD across the MS further.

<sup>42</sup> For instance, the CRD III proposal included provisions on an express obligation for financial institutions to establish and maintain remuneration policies and practices that are consistent with effective risk management. The Commission also proposed to set up a European Systemic Risk Board to oversee the stability of the financial system, identify systemic risks at the European level and issue risk warnings.

<sup>43</sup> See [http://ec.europa.eu/internal\\_market/bank/docs/regcapital/monitoring/23062010\\_report\\_en.pdf](http://ec.europa.eu/internal_market/bank/docs/regcapital/monitoring/23062010_report_en.pdf)

<sup>44</sup> Analysis of the Basel Committee showed that 'severely stressed' banks entered the crisis with a higher degree of balance sheet leverage. This analysis was based on leverage ratios for 117 banks from 19 countries in 2006 and 2007, of which 27 banks were identified as 'severely stressed' during the financial crisis. See <http://www.bis.org/publ/bcbs180.pdf>

<sup>45</sup> Recital 15 of Directive 2006/48/EC

Where the legal text does not include criteria on which judgements or choices are made by supervisors, some options and discretions may result in a lack of legal clarity. While all MS have a supervisory treatment that appears to be legally compliant, any given exposure might receive different treatment from one MS to another. Effects of disparate approaches have a direct effect on a firms' ability to properly and fairly compete in another MS, leading to an unlevel playing field.

Diverging application of the CRD undermines the reform of the EU supervisory architecture and, therefore, may impair effectiveness and efficiency of supervision. From 2011, the European Banking Authority (EBA) replaced CEBS, taking over CEBS' responsibilities as well as receiving additional powers. In particular, it has been entrusted with developing technical standards in areas of bank regulation that concern issues of highly technical nature where uniform conditions for implementing EU acts are needed. For such standards to be best developed and most effective, national requirements should not diverge, i.e., there should be no possibility to apply stricter rules, different options or discretions.

Different application of legislation in different MS is particularly burdensome for firms operating cross-border. They have to report on their compliance with different sets of requirements at consolidated and subsidiary levels which gives rise to additional reporting costs. In order to allow cross-border banks to minimize these costs, the CRD II introduced a requirement for supervisors to apply a uniform reporting format by the end of 2012, which is under development by EBA. However, work on common reporting format represents only a partial solution from the industry's perspective, as aforementioned divergences mean that differently defined data would need to be reported from one MS to another.

Consequences of regulatory divergences are particularly pertinent when considering the treatment of banking groups. Under the CRD, as a general rule, the consolidating supervisor should apply 'home' MS rules at consolidated level, unless otherwise provided for in the directive. Where rules are not harmonised, this may result in banking groups with subsidiaries in other MS having to apply diverging rules at solo ('host' MS) level and consolidated level. Mutual recognition of the host MS national discretion provides some degree of flexibility by allowing the use of local rules<sup>46</sup> at consolidated level but may also create opportunities for regulatory arbitrage. The CRD also provides the possibility to apply 'home' discretions at 'host' level. This is discussed, on a case by case basis, in colleges of supervisors involving all relevant supervisors of banking groups. In this context, supervisors may decide to apply any blend of 'home' and 'host' discretions. Due to the number of options and discretions, positions of national authorities with regard to suitability of specific prudential measures vis-à-vis parts of the group may diverge, hindering efficiency and effectiveness of supervisory cooperation. Moreover, as practices may vary from one college to another, banking group-specific outcomes are delivered, which may have negative implications for the level playing field.

### **3.7. Risks inherent in baseline scenario**

There is a broad international consensus that problems outlined in sections 3.2 - 3.6 individually, and even more so when taken together, played a significant contributing role in exacerbating the economic cycle and in precipitating the extreme financial instability that in turn evoked the global economic recession, damaging soundness and international competitiveness of the EU banking sector and subjecting a wide range of stakeholders,

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<sup>46</sup> The CRD provides 18 cases of explicit reference to mutual recognition of national discretions implemented by another national authority

including bank creditors, shareholders, employees, borrowers and taxpayers, to unprecedented economic costs. If no action in these areas is taken, the risk that systemic shocks of a similar scale occur in the future will not be addressed.

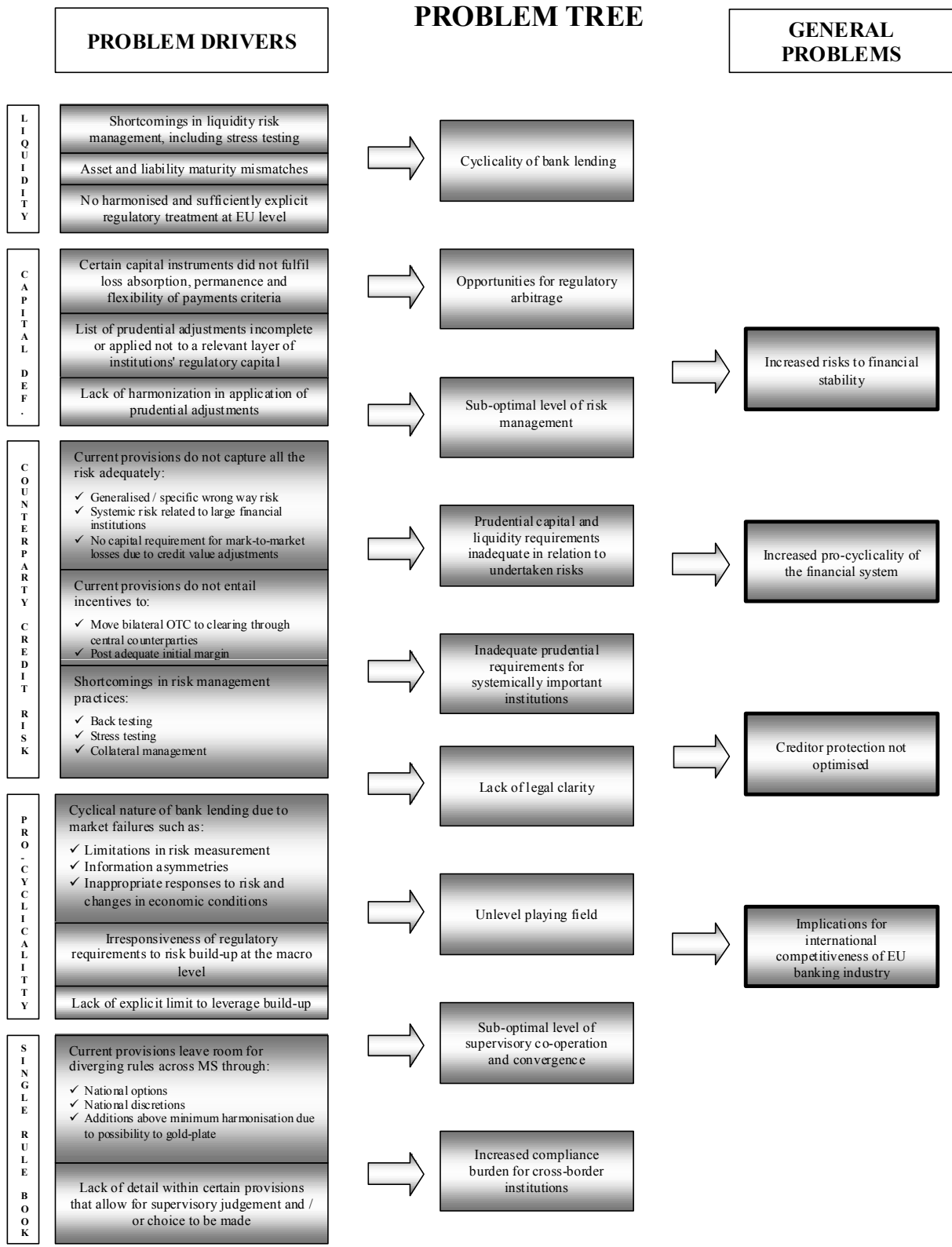
### **3.8. Is action necessary at EU level?**

Based on the nature of problems outlined in the above analysis, several major justifications that meet the principle of subsidiarity for action at the EU level become apparent. They include a need to enhance the integration of EU internal banking market (by removing national options, discretions and possibilities to 'gold-plate'), address several market (e.g., in the area of countercyclical policy measures) and regulatory failures (e.g., capital definition and liquidity risk management rules, capital requirements for CCR) that were brought to light by the financial crisis, correct for regulatory arbitrage opportunities which are made possible by the current legislation (due to the availability of certain national options and discretions) and ensure a consistent EU approach for tackling various issues covered by the scope of this report, which would do away with the need for MS to pursue individual approaches that risk fragmenting the internal market.

Most importantly, only a common EU-level approach could be expected to effectively provide for financial stability and tame excessive financial pro-cyclicality, as currently policies that are directed toward these key **systemic** aspects are either geared to national needs or are absent altogether. With respect to the latter, the crisis clearly demonstrated the ineffectiveness of the national liquidity risk supervision approaches.

As regards the proportionality of proposed EU actions, it is implicitly assessed in section 5 in the process of comparison of potential policy options in terms of their effectiveness and efficiency vis-à-vis the relevant policy objectives.





#### 4. OBJECTIVES

The overarching goal of this initiative is to ensure that the effectiveness of bank capital regulation in the EU, represented by the CRD, is strengthened and its adverse impacts on depositor protection and pro-cyclicality of the financial system are contained, while maintaining the competitive position of the EU banking industry. This translates into the following four general policy objectives to:

- Enhance financial stability (G-1);
- Enhance safeguarding of depositor interests (G-2);
- Ensure international competitiveness of EU banking sector (G-3);
- Reduce pro-cyclicality in the financial system (G-4).

In light of the problems presented in sections 3.2 - 3.6, five sets (in the areas of liquidity risk management, definition of capital, counterparty credit risk, pro-cyclicality, and single rule book) of operational objectives have been identified to address the applicable problem drivers. Effective realization of such operational objectives should contribute to the achievement of the following longer-term specific policy objectives to:

- Enhance adequacy of capital and liquidity requirements (S-1);
- Enhance bank risk management (S-2);
- Prevent regulatory arbitrage opportunities (S-3);
- Enhance legal clarity (S-4);
- Reduce compliance burden (S-5);
- Enhance level playing field (S-6);
- Enhance supervisory cooperation and convergence (S-7)
- Align prudential requirements for systemically important financial institutions (SIFIs) with the risks that they pose (S-8);
- Reduce cyclicality of bank lending (S-9);

and, in turn, should facilitate the attainment of the four general policy objectives.

Table 1 provides an overview of the linkages between:

- identified problems and drivers underlying them;
- operational, specific and general objectives to address the problem drivers; and
- policy options to achieve the objectives.

**Table 1: Summary of problems, objectives and policy options**

Problems	Problem Drivers	Operational Objectives	Specific Objectives									General Objectives				Policy Options
			S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8	S-9	G-1	G-2	G-3	G-4	
			Enhance adequacy of capital and liquidity requirements	Enhance bank risk management	Prevent regulatory arbitrage opportunities	Enhance legal clarity	Reduce compliance burden	Enhance level playing field	Enhance supervisory cooperation and convergence	Align prudential requirements for SIFIs with the risks they pose	Reduce cyclical volatility of bank lending	Enhance financial stability	Enhance safeguarding of depositor interests	Ensure international competitiveness of EU banking sector	Reduce pro-cyclicality in the financial system	
<b>Liquidity risk management</b> - Existing liquidity risk management approaches and supervisory regimes inadequately captured risks inherent to the underlying market practices and trends, contributing to bankruptcy of several institutions and strongly undermining financial health of many others, threatening the financial stability and necessitating unprecedented levels of central bank liquidity and government support. - Differences in national liquidity regimes give rise to level-playing field issues for cross-border firms and hamper effectiveness of supervision as well as cooperation between supervisory authorities.	Shortcomings in liquidity risk management, including stress tests	Ensure that institutions have sufficient high quality liquid assets to withstand an acute stress scenario lasting for 30 days	√	√												1.1-1.3
	Asset and liability maturity mismatches	Ensure that institutions fund their activities with more stable sources of funding on an ongoing structural basis	√	√								√	√	√	√	2.1-2.3
	No harmonized and sufficiently explicit regulatory treatment at EU level	Develop appropriately explicit and harmonized EU level regime for management of liquidity risk	√				√	√	√							1.1-2.3
<b>Definition of capital</b> - Banking sector – due to the drivers outlined - entered the crisis with reported Tier 1 capital ratios and, thus, capital that were not reflective of banks' capacity to absorb losses on a going-concern basis. As the crisis deepened and banks faced growing losses and writedowns, their fundamental solvency was called into question, leading to broader financial instability and necessitating extensive public sector support - Variations in the definition of Tier 1 capital stemming from differences in application of regulatory adjustments across the MS obstructed its comparability and reliability, leading to market participants' and regulators' focus on alternative measures	Certain capital instruments did not fulfil loss absorption, permanence and flexibility of payments criteria	Enhance loss absorption, permanence and flexibility of payments of going-concern capital instruments	√	√												
	List of regulatory adjustments incomplete or applied not to a relevant layer of institutions' regulatory capital	Enhance loss absorption of regulatory capital by appropriate application of regulatory adjustments from the relevant layers of capital	√	√							√	√	√	√	3.1-3.5	
	Lack of harmonization in application of regulatory adjustments	Develop a harmonised set of provisions in the area of definition of capital					√	√	√							
<b>Counterparty credit risk</b> - Existing CRD provisions did not ensure appropriate risk management of financial institutions as well as adequate and non-cyclical regulatory requirements against the counterparty credit risk that materialised during the crisis - Calibration of provisions does not provide sufficient incentives to clear bilateral OTC instruments through central counterparties, leading to lack of confidence and exacerbating instability in times of market stress	Current provisions do not adequately capture counterparty credit risk	Enhance adequacy of capital requirements for the counterparty credit risk	√	√												
	Current provisions do not entail incentives to move bilateral OTC to clearing through central counterparties and to post adequate initial margin	Provide incentives to move bilateral OTC to clearing through central counterparties and to post adequate initial margin		√								√	√	√	√	4.1-4.3
	Shortcomings in risk management practices as regards back testing, stress testing and collateral	Enhance bank risk management practices		√												

Problems	Problem Drivers	Operational Objectives	Specific Objectives									General Objectives				Policy Options	
			S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8	S-9	G-1	G-2	G-3	G-4		
			Enhance adequacy of capital and liquidity requirements	Enhance bank risk management	Prevent regulatory arbitrage opportunities	Enhance legal clarity	Reduce compliance burden	Enhance level playing field	Enhance supervisory cooperation and convergence	Align prudential requirements for SIFIs with the risks they pose	Reduce cyclical volatility of bank lending	Enhance financial stability	Enhance safeguarding of depositor interests	Ensure international competitiveness of EU banking sector	Reduce pro-cyclicality in the financial system		
	management																
<b>Procyclicality of lending</b> - Lack of a limit to leveraging capital and irresponsiveness of regulatory capital requirements to the build-up of risk at the macro level led to accumulation of financial imbalances which, once the economic cycle turned, prompted a de-leveraging spiral and precipitated steep credit-related losses - Inappropriate responses to risk and other market failures contribute to leverage build-up and a concomitant overextension of credit in the economic upturn and cause banks to maintain generous discretionary distributions during periods of stress, when capital should be conserved	Market failures, including limitations in risk measurement, information asymmetries and inappropriate responses to risk and changes in economic conditions Irresponsiveness of regulatory requirements to risk build-up at the macro level Lack of explicit limits to leverage of credit institutions	Introduce an explicit limit on banks capacity to leverage their capital	√	√												5.1-5.3	
		Improve banks' capacity to absorb losses over periods of stress and still meet the minimum regulatory capital requirement	√	√								√	√	√	√		6.1-6.4
		Protect banking sector from excessive credit growth and build-up of risks at the macro-level while ensuring credit flow to the economy in the economic downturn	√	√								√					
<b>Options, discretions and minimum harmonisation</b> - Diverging national rules allow for competitive distortions in the Internal Market and lead to a fragmented and inconsistent financial supervision, impeding legal clarity and resulting in excessive administrative burden for cross-border banks - Mutual recognition of 'host' MS treatment at consolidated level creates opportunities for regulatory arbitrage; application of 'home' MS discretions at 'host' level hinders supervisory cooperation and level playing field	Diverging national rules due to the inclusion in the CRD of a number of national options and discretions Gold-plating of the current provisions	Remove national options and discretions in the CRD			√	√	√	√									
		Remove regulatory additions above the agreed minimum standards			√	√	√	√				√	√	√			7.1-7.4
	Lack of detail within certain CRD provisions that allow for supervisory judgement and / or choice to be made	Make provisions allowing for supervisory judgement and / or choice more specific				√	√	√	√								

## 5. POLICY OPTIONS: ANALYSIS AND COMPARISON

This section presents the policy options and their impacts for each policy area individually. Due to the number of the areas covered, the analysis of policy options and the comparison thereof have been combined for each area. Cumulative impacts of all preferred options are discussed at the end of the section.

Presentation of options in each policy area includes a 'retain current approach' scenario. While this usefully serves as a baseline for assessing impacts of alternative policy options, it needs to be kept in mind that sections 5.1-5.5 pertain to proposals linked to Basel III that were developed by the Basel Committee with the active participation of the Commission services, on behalf of all 27 EU MS. Hence, 'retain current approach' options should be evaluated also bearing in mind the damage that their adoption would inflict on the credibility of the Commission in the context of setting global bank regulation standards.

Most policy option sets also include an option based on the Commission services' February 2010 public consultation. As such, it represents a policy option whose development was underpinned by a tremendous amount of preparatory work and which was subjected to an extensive consultation process in the EU. Importantly, the feedback received from EU stakeholders was key for the Commission services' negotiating positions at the Basel Committee, shaping the final policy solutions of Basel III. Inclusion of this option also serves to enhance the transparency of the Basel III process, by showing how the thinking on individual parts of the new framework evolved over the course of 2010.

Details of the new framework were fleshed out by the Basel Committee in December 2010. Policy options pertaining to the new liquidity measures are analysed in section 5.1. As regards the new capital requirements, respective policy options are discussed in sections 5.2-5.5. The calibration, including phase-in and grandfathering arrangements, of Basel III is shown in Tables 2 and 3 below. However, EU MS will be allowed to 'gold-plate' the new minimum requirements during the phase-in period, which means that they can apply already in 2013 the level of capital required by Basel III in 2019.

**Table 2:** Calibration of Basel III, in % of RWAs

	Common Equity (after deductions)	Tier 1 Capital	Total Capital
Minimum requirement	4.5	6.0	8.0
Conservation buffer	2.5		
Minimum requirement plus conservation buffer	7.0	8.5	10.5
Countercyclical buffer range <sup>1</sup>	0-2.5		

Notes: <sup>1</sup> Common equity or other fully loss absorbing capital

Source: Basel Committee

**Table 3:** Transitional arrangements for Basel III framework (all dates are as of January 1)

Policy measure	2011	2012	2013	2014	2015	2016	2017	2018	2019
Leverage ratio	Supervisory monitoring		Parallel run Disclosure starts on 1/1/2015					Migration to Pillar 1	
Minimum common equity (CET1) capital ratio			3.5%	4.0%	4.5%	4.5%	4.5%	4.5%	4.5%
Capital conservation buffer						0.625%	1.25%	1.875%	2.5%
Minimum common equity plus capital conservation buffer			3.5%	4.0%	4.5%	5.125%	5.75%	6.375%	7.0%
Phase-in of deductions from CET1				20%	40%	60%	80%	100%	100%
Minimum Tier 1 capital			4.5%	5.5%	6.0%	6.0%	6.0%	6.0%	6.0%

Policy measure	2011	2012	2013	2014	2015	2016	2017	2018	2019
Minimum total capital			8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
Minimum total capital plus capital conservation buffer			8.0%	8.0%	8.0%	8.625%	9.25%	9.875%	10.5%
Capital instruments no longer qualifying as non-core Tier 1 capital or Tier 2 capital			Phased out over a 10 year period beginning 2013						
Liquidity Coverage Ratio	Observation period begins				Introduce minimum standard				
Net Stable Funding Ratio	Observation period begins							Introduce minimum standard	

Source: Basel Committee

It needs to be stressed that the calibration of the new minimum capital requirements was determined by taking into account the impact that the new policy measures would have on the numerator (i.e., definition of eligible capital) and the denominator (i.e., measures affecting risk weighted assets) of the ratios. Therefore, analyses underpinning the phase-in arrangements and the calibration of the new rules are presented after preferred policy options relevant for the calculation of the ratios have been identified (in line with the approach followed by the Basel Committee).

## 5.1. Liquidity risk

To address the problems in the area of liquidity risk management, in its February 2010 the Commission services consulted on the two key potential policy measures: Liquidity Coverage Ratio and Net Stable Funding Ratio.

### 5.1.1. Liquidity Coverage Ratio

To address shortcomings in liquidity risk management and to improve short-term resilience of the liquidity risk profile of financial institutions by ensuring that they have sufficient high quality liquid assets to withstand an acute stress scenario lasting for 30 days, the Commission services proposed to introduce a Liquidity Coverage Ratio (LCR). Main policy options in this area are as follows:

- **Policy option 1.1:** Retain current approach;
- **Policy option 1.2:** Introduce LCR as specified in the February 2010 public consultation;
- **Policy option 1.3:** Introduce LCR adopted by the Basel Committee subject to observation period.

#### Policy option 1.1: Retain current approach

Under this policy option, problems related to short-term liquidity risk management, as outlined in section 3.2 may not be entirely addressed. Given the recently agreed Basel liquidity standards, it may be expected that under this policy option certain MS would adopt these sounder standards. Other MS may pursue different alleys for strengthening liquidity regimes and others may not act at all. This would lead to further divergence of standards within Europe, creating opportunities for regulatory arbitrage and un-levelling the playing field.

#### Policy option 1.2: Introduce LCR as specified in the February 2010 public consultation

LCR would require credit institutions to match net liquidity outflows during a 30 day period of acute stress with a buffer of 'high quality' liquid assets, i.e., to maintain LCR of at least 100%. The net liquidity outflows (the denominator) during the period of stress would be

completely defined in the CRD, detailing inter alia what percentage of a given source of funding a credit institution has to assume would be withdrawn from it. The outflows covered would reflect both institution-specific and systemic shocks built upon actual circumstances experienced in the global financial crisis and discussed in section 3.2. The provisions on the list of high quality liquid assets (the numerator) to cover these outflows should ensure that these assets are of high credit and liquidity quality.<sup>47</sup> For more detailed specifications of both the numerator and the denominator of the ratio please see Annex IV.

As regards the buffer of high quality liquid assets, the Commission services consulted on the impact of both a narrow regulatory definition of the buffer composed of cash, central bank reserves and high quality sovereign debt, as well as a somewhat broader definition which included non-financial corporate bonds and covered bonds of high quality up to 50% of the buffer.<sup>48</sup>

The standards would apply at the level of individual legal entities. This is desirable as long as constraints on the transferability of assets, mutual support commitments and central liquidity risk management within groups continue to apply. However, application to individual firms could be waived by supervisors provided that it is possible to identify a set of institutions belonging to the same group with centrally managed liquidity risk, legally binding mutual commitments for liquidity support between the relevant institutions and freely transferable assets between legal entities even when under stress. Where these conditions are met, the requirements would be applied on a consolidated level only to the entities belonging to a group. Individual legal entity level application would be complemented by application at the consolidated level to ensure a sound liquidity position of the overall banking group.

Because in this area different MS currently apply different standards, banks were not familiar with standardised data requests included in the QIS. While this points in the direction of possibly significant one-off compliance costs related to information provision, i.e., administrative costs, when migrating to the new standards, it may be expected that there would be important ongoing cost savings for cross-border groups that currently typically have to report on individual legal entity basis (and even separately at the level of branches that do not have a legal personality) according to very diverse *national* regimes and, in addition, on a consolidated basis according to their home country regime. Hence, administrative costs due to EU legislation, as discussed in section 5.8.3, should be offset by savings of administrative costs due to *national* reporting requirements. On top of that, harmonised reporting would facilitate communication between supervisors of the different legal entities of a group.

EU QIS showed that as of December 2009 under the narrow definition of liquid asset buffer, average LCR was 52.4% and 74.1% for Group 1 and Group 2 banks, respectively. Group 1 banks from only two countries and Group 2 banks from 9 countries had average LCR above 100%. Under the broader definition of liquid asset buffer, average LCR improved by some ten percentage points for both groups.

Feedback from numerous public consultations showed that the 'narrow' liquid asset buffer, however, does not address the situation of jurisdictions such as DK that may not have sufficient supply of eligible assets. Most respondents to the consultations also claimed that the 'narrow' buffer definition entails the concentration risk of specific asset classes while labelling

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<sup>47</sup> They should have low credit and market risk, ease and certainty of valuation, low correlation with risky assets, active and sizeable market, low market concentration, presence of committed market makers, be listed on developed exchange market, and be likely to attract investors in stressed market situations

<sup>48</sup> Those rated AA and above with a 20% haircut and those rated A- up to AA- with a 40% haircut

bank (covered) bonds as illiquid would hamper bank ability to raise funds. Refinements were deemed to be necessary also as regards assumptions used to estimate several categories of net liquidity outflows (the denominator), for instance, to recognize that central bank-eligible assets that are not part of the liquid asset buffer and retail deposits constitute a better source of liquidity than assumed by this option. Public authorities of certain MS, on contrary, were in favour of a 'narrow' asset buffer on the grounds of financial stability.

*Policy option 1.3: Introduce LCR adopted by the Basel Committee subject to observation period*

Policy option 1.3 reflects the specification of LCR announced by the Basel Committee in its Basel III rules text in December 2010. It takes into account the above mentioned concerns and recalibrates the LCR requirement by building on the 'narrow' definition of liquid asset buffer under policy option 1.2.

'Narrow' liquid asset buffer under this option is broadened to include: i) non-financial corporate and covered bonds not issued by the bank itself of high credit and liquidity quality with a 15% haircut and ii) exposures to sovereign and public sector entities, central banks, that are risk-weighted at 20% under the CRD, with a 15% haircut. The inclusion of these assets (termed 'Level 2' assets) is capped at 40% of the liquid asset buffer. Level 2 assets are also of very high liquidity, but possess the properties of high quality liquid assets included in the 'narrow' definition to a somewhat lesser extent. The limit on these assets would ensure that assets of the very highest quality make up the majority of the buffer while allowing banks some flexibility to improve the profitability of their liquid asset holdings. This option entails three alternatives to accommodate the specific situation of jurisdictions which do not have a sufficient supply of Level 1 assets in their domestic currency to meet the aggregate demand of banks with significant exposures in this currency. However, its Level 2 cap of 40% is lower than that of the broader buffer definition under option 1.2.

This option foresees that before 2015, a range of qualitative and quantitative criteria to determine high credit and liquidity quality and to determine to which of the two levels in the buffer individual assets should be assigned will be tested by EBA with a view to advising the Commission on the appropriate set and calibration of such criteria. Preliminary criteria that put particular emphasis on assets' external ratings have been set by the Basel Committee, but the testing of alternative criteria should allow by 2015 to identify final criteria that place more emphasis on experienced liquidity and less on such ratings.

This option also elaborates on the expected outflow assumptions of a number of bank liability categories.<sup>49</sup> For operational activities with financial institution counterparties, it creates a 25% outflow bucket for custody, clearing and settlement, and selected cash management activities. Importantly to the EU, a similar treatment is given to mutual deposits of cooperative and other types of bank networks.

In line with the general desire to introduce harmonised standards and be less dependent on individual banks' ability to model risks and assumptions that banks would make, this option also establishes a harmonised treatment of net inflows rather than leaving their determination

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<sup>49</sup> Categories such as retail deposits; secured and unsecured deposits from sovereign, public sector entities and central banks; undrawn committed credit and liquidity lines to retail and SME customers; undrawn committed credit lines to sovereign, public sector entities and central banks



to bank discretion.<sup>50</sup> Importantly, to ensure a minimum level of liquid asset holdings, the amount of inflows that can offset outflows is capped at 75% of total expected cash outflows as calculated in the standard. This effectively requires that a bank must maintain a minimum amount of stock of liquid assets equal to 25% of the outflows in order to cover potential timing mismatches between in- and outflows during the 30 days and possible delays of inflows under stress.

The above revisions to option 1.2 have been determined based on the current data. The foreseen observation period will confirm whether any further changes are required.

Similarly to policy option 1.2, the standards would apply at the level of individual legal and consolidated entities.<sup>51</sup> The Commission will, based on a report from EBA and taking into account the contribution of ESRB, review before 2015 whether the ratio has any unintended consequences on the business and risk profile of European institutions, trade finance, financial markets and the economy. The Commission should be able to modify the ratio accordingly as appropriate via a delegated act. A mechanism would be built into the CRD IV proposal ensuring that the ratio will only apply after the Commission has concluded its review and has made the necessary modifications, if any.

Under this policy option, average EU LCR is 66.5% for Group 1 banks and 87.1% for Group 2 banks, comparable to the LCR averages of the broader buffer definition under option 1.2. In terms of distributional impacts with respect to bank size, under this option the impact of having LCR of 100% is less pronounced for smaller (i.e., Group 2) banks in most of the MS. In terms of implications of this policy option on banks from other major international jurisdictions that are large and active abroad, the EU Group 1 LCR average is lower than that of a sample of 84 large international banks from twenty members of the Basel Committee (including eight EU MS) that as of December 2009 stood at 82.9%.<sup>52</sup>

On the basis of the QIS, shortfall of liquid assets for the entire EU banking sector is estimated at about €1.6 trillion.<sup>53</sup> As regards the aggregate supply of liquid assets in the economy, when the above purchases of liquid assets are financed by new equity of banks, this may effectively represent a switch between the direct holdings of such assets by ultimate investors with the indirect ones (through holding bank equity). Yet there may not necessarily be a big effect on the aggregate assets in the economy, as ultimately all securities would continue to be held - directly and indirectly - by the ultimate investors, including bank shareholders. Liquid asset shortfalls shall also not be confused with related bank costs which stem from the foregone return on assets, i.e., the difference between average return on loans and average return on assets included in the buffer.

LCR could lead to a contraction of the interbank market for short-term maturity. There is also the risk of a potential reduction in the liquidity - and therefore maybe an increase of costs - of instruments excluded from the buffer, such as ABS or foreign currency swaps, as they would be relatively disregarded by banks. Nevertheless, incentivising banks to find alternative

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<sup>50</sup> Banks are assumed to realise inflows of 100% from their lending to other financial institutions, but should, due to the need to continue providing lending to firms and households, only assume 50% of the inflows contractually due from these counterparties.

<sup>51</sup> This is in alignment with Basel III rules since they outline treatment at the consolidated group level while leaving the implementation at the sub-group and stand-alone bank levels to discretion of its members, in order to ensure greater consistency and level playing field between domestic and cross-border banks

<sup>52</sup> Source: QIS on the impact of Basel III reforms on the BCBS' countries

<sup>53</sup> Sources: EU QIS, Commission services' calculations

sources of funding is a key step to enhance financial stability, reduce the reliance of the banking industry on such (wholesale) markets and limit the contagion channels.

The introduction of LCR is estimated to reduce the EU GDP by 0.11% four and a half years since the start of implementation, compared to the baseline trend, if its benefits are not taken into account.<sup>54</sup> However, the new framework should be understood as an insurance scheme securing the stability of individual institutions and eventually of the financial system as a whole. Complying with the LCR requirement as defined under this option is expected to reduce the probability of a systemic crisis by some 40%, equivalent to annual GDP benefits in the range of 0.1% to 0.5%.<sup>55</sup> The new measures should be able to address the pro-cyclicality and volatile patterns of banks' unregulated liquidity management: on the one hand, underestimated risks when liquidity is cheap and easily available and, on the other hand, rapid contagion and loss of confidence in crisis situation due to the asymmetry of information and insufficient liquidity reserves.

Comparison of policy options

Retaining the current scenario (option 1.1), implies that problems related to short-term liquidity risk management, as outlined in section 3.2, may not be addressed effectively, depending on the actions taken in this area by national supervisors and/or the industry. While tightening of national liquidity regimes may provide for a degree of increased effectiveness with respect to regulation (objective S-1) and bank management (objective S-2) of risks discussed in this section, there is no guarantee that necessary progress would be achieved quickly enough and evenly across the EU.

While both policy options 1.2 (LCR as specified in the February 2010 public consultation) and 1.3 (LCR developed by the Basel Committee subject to observation period) entail effective approaches with respect to contributing to the achievement of relevant objectives S-1 (Enhance adequacy of capital and liquidity requirements), S-2 (Enhance bank risk management) and G-1 (Enhance financial stability), option 1.3 is more effective due to its more precise calibration of a number of elements relevant for the calculation of LCR. While these two options are comparable in terms of compliance costs for the industry, option 1.2 (i.e., its version of the broader buffer definition) is more efficient than option 1.3 in terms of achieving the above objectives. Option 1.2 has a higher cap for additional assets eligible for the liquid asset buffer and generally could be better tailored to the EU specificities both in terms of the numerator and the denominator given that they would be entirely defined in the CRD. As such, it would impose lower adjustment costs on both the industry, and via indirect impacts, on other economic agents. Given its superior effectiveness as regards the relevant policy objectives, however, option 1.3 is identified as a preferred option.

**Table 4:** Summary of policy option effectiveness and efficiency

Policy Option	Policy Option Comparison Criteria			
	Effectiveness			Efficiency
	Enhance adequacy of capital and liquidity requirements [S-1]	Enhance bank risk management [S-2]	Enhance financial stability [G-1]	
1.1 Retain current approach	3	3	3	3
1.2 Introduce LCR as specified in the February 2010 public consultation	2	2	2	1
1.3 Introduce LCR adopted by the Basel Committee subject to observation period	1	1	1	2

<sup>54</sup> Sources: EU QIS, Basel Committee (MAG report, see section 5.8.4), Commission services' calculations

<sup>55</sup> Sources: EU QIS, Basel Committee (LEI report, see section 5.8.5), Commission services' calculations

Scale of option ranking: 1=most effective / efficient, 3=least effective / efficient  
Effectiveness measures extent to which options achieve relevant objectives  
Efficiency measures extent to which objectives can be achieved for a given level of resources

### 5.1.2. *Net Stable Funding Ratio*

To address shortcomings in the management of funding structure over a one year horizon, the Commission services propose to introduce a Net Stable Funding Ratio (NSFR). Main policy options in this area are as follows:

- **Policy option 2.1:** Retain current approach;
- **Policy option 2.2:** Introduce NSFR as specified in the February 2010 public consultation;
- **Policy option 2.3:** Introduce NSFR adopted by the Basel Committee.

#### *Policy option 2.1: Retain current approach*

Under this policy option, funding problems arising from asset - liability maturity mismatch, as outlined in section 3.2, may not be entirely addressed. While tightening of national liquidity regimes may provide for a degree of increased effectiveness with respect to management and supervision of risks discussed in this section, there is no guarantee that necessary progress would be achieved quickly enough and evenly across the EU.

#### *Policy option 2.2: Introduce NSFR as specified in the February 2010 public consultation*

NSFR would require credit institutions to maintain a sound funding structure over the one-year horizon in an extended firm-specific stress scenario such as a significant decline in its profitability or solvency. To this end, assets currently funded and any contingent obligations to fund would have to be matched, depending on their liquidity profile at a one year horizon (reflected in the so-called 'required stable funding factors'), with sources of funding that can be considered stable over the same one year horizon. Annex V contains specifications of both sources of *available* stable funding (the numerator) and *required* stable funding for various asset types (the denominator) of the ratio, as outlined in February 2010 public consultation.

In terms of level of application, NSFR would apply at the level of individual legal and consolidated entities in line with the approach envisaged for application of LCR. For the reasons outlined in the discussion of LCR, costs related to information provision, i.e., administrative costs, under this policy option are expected to be significant (see section 5.8.3).

EU QIS showed that as of December 2009 the average NSFR for Group 1 banks was 79.8%. No country was, on average, able to meet the requirement under this policy option, with MS observing ratios in the range of 60.6% to 97.2%. A wider range of results across countries was observed for Group 2 banks (43.4% - 155.7%), while its average NSFR of 83.7% was slightly higher than that of Group 1.

Feedback from numerous public consultations showed that this policy option, however, requires further refinements with respect to calibration of available stable funding factors (the numerator) and required stable funding factors as regards certain asset types (the denominator) and that it may unfairly penalise certain business models.<sup>56</sup> With respect to the

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<sup>56</sup> Respondents claimed that banks being dependent on capital markets would be given a better ratio than retail deposit banks which have been stable. It was also recognised that NSFR might favour broker / dealers while penalising the universal banking model.

latter, some respondents called for the phasing in of the ratio to allow banks for adjusting their business models.

### Policy option 2.3: Introduce NSFR adopted by the Basel Committee

Policy option 2.3 reflects the specifications of NSFR announced by the Basel Committee in its Basel III rules text in December 2010. It takes into account the abovementioned concerns by recalibrating certain available stable funding and required stable funding factors.<sup>57</sup>

As a result, average NSFR is higher for most countries when compared to policy option 2.2, and the EU average rises to 91.1% for Group 1 banks and to 93.9% for Group 2 banks, while MS averages continue to be widely dispersed. In terms of distributional impacts, smaller (i.e., Group 2) banks tend to have higher NSFR ratios. EU banking sector's shortfall to meet the NSFR requirement of 100% as of December 2009 is estimated in the vicinity of €3.2 trillion.<sup>58</sup>

As regards implications of this policy option on banks from other major international jurisdictions that are large and active abroad, the EU Group 1 NSFR average is comparable to that of a sample of 85 large international banks from twenty members of the Basel Committee (including eight EU MS) that as of December 2009 stood at 92.7%.<sup>59</sup>

Given the above impact and acknowledging the novelty of this requirement, this policy option entails an observation period that starts in 2012. The observation period would allow for the assessment of any unintended implications of the ratio for institutions of different size and business model, trade financing, financial markets and credit provision to the real economy. The establishment of the actual regulatory requirement, subject to appropriate revisions relative to its preliminary form, would be left to another legislative proposal before 2018.

This policy option would be less costly for the industry than option 2.2, as in effect, compliance with NSFR would start only in seven years from 2010, giving institutions ample time to make necessary adjustments to their funding structure, asset and liability maturity mismatch and activities which are the most vulnerable to liquidity risk in periods of stress. Institutions would still be subject to the costs related to provision of information to supervisors during the observation period (see section 5.8.3).

### Comparison of policy options

Retaining the current scenario (option 2.1) implies that problems related to longer-term funding liquidity risk management may not be addressed. While both policy options 2.2 (NSFR as specified in the February 2010 public consultation) and 2.3 (NSFR adopted by the Basel Committee) entail an effective approach with respect to contributing to the achievement of relevant objectives S-1 (Enhance adequacy of capital and liquidity requirements) and S-2 (Enhance bank risk management) as well as G-1 (Enhance financial stability) and other relevant general objectives, option 2.3 is more effective due to its more precise – from a

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<sup>57</sup> Available stable funding factors for retail and SME deposits are raised, while required stable funding factors for i) residential mortgages and other loans that qualify for the 35% or better risk weight under Basel II standardised approach for credit risk, ii) government and public sector entity securities with risk-weight of 20% under the CRD, and iii) certain off-balance sheet commitments are lowered

<sup>58</sup> Sources: EU QIS, Commission services' calculations. Expected shortfall shall not be confused with related bank costs which may stem (depending on actions taken by banks to comply with the requirement) from substituting sources of funding with lower available stable funding factors with those with higher available stable funding factors.

<sup>59</sup> Source: QIS on the impact of Basel III reforms on the BCBS' countries

prudential angle – calibration. Policy option 2.3 is the most efficient option in terms of achieving the above policy objectives as it would impose lowest adjustment costs on the industry and, via the reduced likelihood of unwelcome side effects for the industry and the financial markets, on other economic agents. Policy option 2.3 is identified as a preferred option.

**Table 5:** Summary of policy option effectiveness and efficiency

Policy Option	Policy Option Comparison Criteria			
	Effectiveness			Efficiency
	Enhance adequacy of capital and liquidity requirements [S-1]	Enhance bank risk management [S-2]	Enhance financial stability [G-1]	
2.1 Retain current approach	3	3	3	3
2.2 Introduce NSFR as specified in the February 2010 public consultation	2	2	2	2
2.3 Introduce NSFR adopted by the Basel Committee	1	1	1	1

Scale of option ranking: 1=most effective / efficient, 3=least effective / efficient

Effectiveness measures extent to which options achieve relevant objectives

Efficiency measures extent to which objectives can be achieved for a given level of resources

## 5.2. Eligibility of capital instruments and application of regulatory adjustments

In the process of preparing the legislative proposal, a number of policy alternatives on various individual aspects of the definition of regulatory capital have been examined. They could be sensibly grouped in the following key policy options:

- **Policy option 3.1:** Retain current approach;
- **Policy option 3.2:** Modify only the eligibility criteria for own funds, as specified in the February 2010 public consultation;
- **Policy option 3.3:** Modify both eligibility criteria and regulatory adjustments as specified in the February 2010 public consultation;
- **Policy option 3.4:** Modify both eligibility criteria and regulatory adjustments as adopted by the Basel Committee;
- **Policy option 3.5:** Modify both eligibility criteria and regulatory adjustments as adopted by the Basel Committee, adjusted in certain areas to take account of EU specificities.

### Policy option 3.1: Retain current approach

Under this policy option, problems related to the definition of capital and outlined in section 3.3 will not be entirely addressed. While CRD II harmonised the criteria and established explicit limits for different types of Tier 1 hybrid capital, further amendments were shown by the crisis to be necessary in order to enhance quality of regulatory capital. As regards regulatory adjustments, current CRD provisions allow for national discretion to make additional adjustments, however, this does not guarantee that a necessary progress would be achieved quickly enough and in a uniform manner across the EU.

### Policy option 3.2: Modify only the eligibility criteria for own funds as specified in the February 2010 public consultation

This policy option would tighten eligibility criteria for the different layers of regulatory capital. The Commission services' public consultation of February 2010 outlined such criteria with respect to core Tier 1, non-core Tier 1 and Tier 2 capital (see Annex VI). As regards core, or, Common Equity Tier 1 (CET1), the resultant ineligibility of certain capital

instruments would have a varying effect on institutions from different MS.<sup>60</sup> Impacts on non-core Tier 1 capital would be mainly driven by elimination of innovative and dated hybrid instruments.<sup>61</sup> As regards Tier 2 capital instruments, EU banks that are organised as cooperative networks / societies would no longer be permitted to include in it commitments of their members (e.g., uncalled capital and commitments to make further non-refundable payments), based on the prudential rationale that capital should be paid up in order to ensure that it may be relied upon when required.

However, the above amendments would address only issues relating to the eligibility of capital instruments. They would not address the regulatory adjustments necessary to ensure that the amount of regulatory capital recognised adequately reflects the amounts that would be available to absorb losses on a going concern or in insolvency. A lack of further harmonisation of regulatory adjustments would result in the maintenance of the current divergent approaches in the EU to adjusting regulatory capital. Therefore, this policy option would only be partially effective in achieving the relevant policy objectives.

*Policy option 3.3: Modify both eligibility criteria and regulatory adjustments as specified in the February 2010 public consultation*

This policy option builds on option 3.2 by addressing additional problems that pertain to application of regulatory adjustments. To this end, it lengthens the list of these adjustments and makes their application more appropriate with respect to tiers of regulatory capital, proposing to apply most of them entirely to the CET1 capital (see Annex VII).

As a result of stricter capital eligibility requirements and re-allocation of regulatory adjustments to CET1 capital, under this policy option the CET1 ratio to risk-weighted assets (RWAs) declines in all countries, while its average for the EU falls from 11.1% by some 7 percentage points for Group 1 banks and from 11.5% by some 5 percentage points for Group 2 banks.<sup>62</sup> Majority of this impact comes from the new regulatory adjustments: QIS showed that total adjustments under this option reduce eligible CET1 capital by some 60% for Group 1 banks, and some 40% for Group 2 banks.<sup>63</sup> In terms of distributional effects, impacts of individual regulatory adjustments on CET1 capital vary from one MS to another, while CET1 ratios of smaller (Group 2) banks are affected less than those of large and internationally active banks.

In their responses to the consultation on the eligibility of instruments for CET1 capital, several public authorities and many industry respondents stated that greater onus should be placed on the substance of a capital instrument, e.g. its ability to absorb losses effectively, than on its legal form. As regards eligibility of Additional Tier 1 capital instruments, there was a significant support among public authority respondents for all such instruments to be required to have a principal write-down or conversion feature with an objective trigger, in line with the approach taken in CRD II, in order to ensure that such instruments absorb losses effectively and help an institution to remain as a going concern. Views of industry

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<sup>60</sup> Impact is relatively more pronounced in several MS due to the exclusion of some classes of shares, silent partnerships, participation capital, preferred shares and supplementary cooperative shares

<sup>61</sup> According to CEBS, as of end of 2006 almost 50% of Tier 1 hybrid instruments in the EEA were innovative hybrids. At the same time, such innovative hybrids constituted a majority of dated hybrid instruments

<sup>62</sup> Current CET1 ratio calculated according to the predominant form of Tier 1 capital (gross of deductions) as applied by the bank or the relevant national supervisor

<sup>63</sup> In terms of individual deductions, at the EU level the most material impact comes from deductions for material holdings of financial institutions, goodwill, DTAs, other intangibles and minority interests

respondents on this topic were mixed. With respect to regulatory adjustments, a significant number of public authority respondents and many industry respondents expressed concern about the appropriateness of the proposed non-recognition of minority interest and full deduction of DTAs and investments in certain other unconsolidated financial entities.

*Policy option 3.4: Modify both eligibility criteria and regulatory adjustments as adopted by the Basel Committee*

This policy option reflects the new definition of capital approach outlined in the Basel III rules text. Importantly, compared to option 3.3 this option entails a number of changes with respect to certain regulatory adjustments, improving upon the underlying prudential rationale and taking account of the impact of the proposals on the industry and potential impact on the economy.

More specifically, it provides some recognition in CET1 to the minority interest in a subsidiary that is a credit institution, investment firm, or firm subject to the same prudential requirements and supervision as credit institutions and investment firms, by deducting only the part of such minority interest that relates to capital above the regulatory minimum plus the capital conservation buffer (please see section 5.5) of such subsidiary.<sup>64</sup> It also allows the netting of long and short positions in capital instruments of other unconsolidated financial entities, under specific circumstances, and includes an exemption for underwriting positions held for five working days or less. The treatment of significant investments in the common shares of unconsolidated financial institutions (i.e., more than 10% of their issued share capital), mortgage servicing rights, and DTAs from timing differences is also modified by giving these items limited recognition in CET1.<sup>65</sup> As a result, regulatory adjustments of Group 1 banks as a percentage of eligible CET1 capital, compared to option 3.3, decline by one third to some 40%, while Group 2 banks experience a less pronounced decline.<sup>66</sup>

Impacts of other individual adjustments at the MS level continue to vary and, when taken together, exert a major albeit less pronounced, than under option 3.3, impact on the CET1 capital ratios. As a result and without considering the impact of other proposals included in the legislative proposal, average EU CET 1 capital ratio for Group 1 banks increases by some 2 percentage points to 5.8% whereas that of Group 2 banks improves slightly to 7.1%.

As regards eligibility of Additional Tier 1 capital instruments, this option would entail a less stringent treatment than under options 3.2 and 3.3, as it would require only instruments classified as liabilities to be required to have a principal loss absorption mechanism, which would effectively have a positive impact on the EU banking sector's Tier 1 capital of an estimated €89 billion.

QIS also showed that under this policy option, combined current CET1 capital for 208 Group 1 and Group 2 banks would decline by some €490 billion<sup>67</sup>, Tier 1 capital by €370 billion and total capital by some €420 billion. Actual capital shortfall for the EU banking sector,

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<sup>64</sup> Equivalent treatment of minority interest has been proposed for Tier 1 and total capital

<sup>65</sup> For each of these adjustments, such recognition is capped at 10% of a bank's common equity after application of all other adjustments. Also, banks have to deduct the amount by which the aggregate basket of the three items exceeds 15% of their CET1 capital, calculated after all regulatory adjustments

<sup>66</sup> In terms of individual deductions, at the EU level the most material impacts are due to goodwill, material holdings of financial institutions and DTAs

<sup>67</sup> Change between current predominant form of Tier 1 capital without any deductions and CET1 capital as defined under option 3.4

however, would depend on the level of calibration of the new minima, implications of other parts of the proposal on the RWAs, and capital buffers that banks hold in excess of current regulatory minima. These aspects are assessed cumulatively in section 5.8 of this report.

Most importantly, it is expected that the new capital definition rules should significantly impact the stability of the financial system by enhancing its capacity to effectively absorb economic and financial shocks thereby preserving the viability of financial institutions.

*Policy option 3.5: Modify both eligibility criteria and regulatory adjustments as adopted by the Basel Committee, adjusted for certain EU specificities*

Under this policy option, a number of modifications have been considered to the approach of the Basel Committee outlined under option 3.4 in order to align it better with EU regulatory and banking sector specificities. The modifications reflect certain features of option 3.3 (Modify both the eligibility criteria and regulatory adjustments as specified in February 2010 public consultation) as well as stakeholder feedback received in relation to public consultations. They include:

- restricting CET1 to instruments that qualify under national law as equity capital<sup>68</sup> and meet the CET1 criteria, rather than to ordinary shares that meet the CET1 criteria – this approach places greater onus on the substance of a CET1 instrument. It recognizes the fact that some EU institutions issue instruments other than ordinary shares having the loss absorbency equivalent to that of ordinary shares;
- derogations from specific CET1 eligibility criteria for institutions that are mutuals, cooperative societies or similar institutions – this will help to ensure that the potential for general derogation from the CET1 criteria afforded by Basel III is applied appropriately and consistently in the EU;
- rather than recognition in CET1 only where associated with an instrument that qualifies as CET1, recognition in CET1 also of share premia that qualified as original own funds under Article 57(a) of Directive 2006/48/EC prior to 31 December 2010 – the purpose of this approach is to provide recognition of the loss absorbing nature and role of such share premia, while also restricting the treatment to instruments issued prior to the entry into force of the stricter definition of capital introduced by CRD II;
- a requirement for all Additional Tier 1 capital instruments, rather than only liabilities, to have principal write down or conversion feature<sup>69</sup> - this approach takes account of the raising of capital quality in CRD II and ensures that the principal amount of both equity instruments and liabilities are able to absorb losses effectively on a going concern basis;
- full, rather than limited, deduction from CET1 of mortgage servicing rights, as for all other intangible assets - such an approach takes account of the relative illiquidity and uncertain value of mortgage servicing rights, and the potential difficulty of realising significant amounts of them in a stressed or emergency situation. EU banks have limited amounts of mortgage servicing rights - by virtue of their US subsidiaries – and therefore impact of this adjustment is expected to be very small;

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<sup>68</sup> This represents a 'substance over form' approach, as it allows instruments other than common shares that meet all the eligibility criteria of Basel III to be included in CET1

<sup>69</sup> This addresses the issue that preference shares, while not being effective at absorbing losses on a going concern basis, would not be required to have a write-down or conversion



- a restriction on the recognition of hedging for the purposes of determining the amounts to be deducted for investments in other unconsolidated financial entities to the trading book. The purpose of this approach is to limit the potential for double counting of capital in the financial system through the provision of hedges by entities that are not subject to an equivalent deduction requirement, and to reflect the fact that such holdings in the non-trading book continue to the maturity of the instrument and are difficult to hedge effectively;
- an alternative approach for deduction of significant holdings in unconsolidated insurance entities combined with enhancements to the current approach to applying the methods laid down in the Financial Conglomerates Directive (FICOD). The purpose of this is to take account of, and to enhance, the cross sector treatment laid down in the FICOD of holdings of capital instruments in banking and insurance;
- recognising minority interest – and certain regulatory capital issued by subsidiaries - to the extent that those subsidiaries are credit institutions or investment firms and the capital is used to meet minimum capital requirements, capital conservation buffer and countercyclical capital buffer (see section 5.5). This recognises the importance of the countercyclical capital buffer, the capital used to meet it, and it aims at avoiding any disincentives to its use;
- clarification of the treatment of DTAs that automatically convert into a claim on the state when a firm makes a loss. Where their ability to absorb losses when needed is ensured, such DTAs would not have to be deducted.

The overall net impact of these modifications on the CET1 ratios of Group 1 and Group 2 banks presented under option 3.4 is assumed not to be of major significance, as some of them would make the new capital requirements more stringent while others would have an opposite effect. Most importantly, the adjustments have been developed with a view to ensure that the relevant policy objectives are attained in the most effective manner and that Basel III framework is meaningfully and flexibly applied to a diverse spectrum of the EU banking firms.

Comparison of policy options

Retaining the current scenario (option 3.1) implies that problems related to quality of capital, may not be addressed effectively, depending on the actions taken in this area by national supervisors and/or the industry. Of the remaining policy options, option 3.2 would be the least effective with respect to contributing to the achievement of the relevant policy objectives due to its focus on eligibility criteria only. Policy options 3.3, 3.4 and 3.5 are perceived to be rather effective although they vary in terms of treatment of individual regulatory adjustments and, additionally, options 3.3 and 3.5 are more aligned with certain EU regulatory and banking sector-specific aspects. In this regard, option 3.5 is more developed as it reflects outcomes of extensive public consultations. Hence, policy option 3.5 is the most efficient option and is identified as a preferred option.

**Table 6:** Summary of policy option effectiveness and efficiency

Policy Option	Policy Option Comparison Criteria						Efficiency
	Effectiveness						
	Enhance adequacy of capital and liquidity requirements [S-1]	Enhance bank risk management [S-2]	Prevent regulatory arbitrage opportunities [S-3]	Enhance level playing field [S-6]	Align prudential requirements for SIFIs with the risks they pose [S-8]	Reduce cyclicalities of bank lending [S-9]	
3.1 Retain current approach	5	5	5	5	5	5	5

Policy Option	Policy Option Comparison Criteria						
	Effectiveness						Efficiency
	Enhance adequacy of capital and liquidity requirements [S-1]	Enhance bank risk management [S-2]	Prevent regulatory arbitrage opportunities [S-3]	Enhance level playing field [S-6]	Align prudential requirements for SIFIs with the risks they pose [S-8]	Reduce cyclicality of bank lending [S-9]	
3.2 Modify only the eligibility criteria as specified in the February 2010 public consultation	4	4	4	4	4	4	4
3.3 Modify both eligibility criteria and regulatory adjustments as specified in the February 2010 public consultation	1-3	1-3	1-3	2-3	1	1-3	3
3.4 Modify both eligibility criteria and regulatory adjustments as adopted by the Basel Committee	1-3	1-3	1-3	2-3	2-3	1-3	2
3.5 Modify both eligibility criteria and regulatory adjustments as adopted by the Basel Committee, adjusted for certain EU specificities	1-3	1-3	1-3	1	2-3	1-3	1

Scale of option ranking: 1=most effective / efficient, 5=least effective / efficient

Effectiveness measures extent to which options achieve relevant objectives

Efficiency measures extent to which objectives can be achieved for a given level of resources

### 5.3. Counterparty credit risk

To address problems related to current rules on the counterparty credit risk (CCR) the Commission services considered a number of revisions in this area with the main policy options as follows:

- **Policy option 4.1:** Retain current approach;
- **Policy option 4.2: Enhance** adequacy and minimize cyclicality of **CCR capital requirement** and enhance incentives for clearing OTC instruments through central counterparties (CCPs);
- **Policy option 4.3: Enhance** adequacy and minimize cyclicality of **CCR capital requirement**, enhance incentives for clearing OTC instruments through CCPs **and differentiate the treatment of exposures to CCPs.**

#### Policy option 4.1: Retain current approach

Under this policy option, problems outlined in section 3.4 would not be addressed. The capitalisation for CCR would remain to be insufficient and the corresponding risk management standards inadequate.

#### Policy option 4.2: Enhance CCR requirement

This policy option amends the CCR framework in several areas in order to ensure a more appropriate capitalisation for CCR. Credit institutions would be subject to an additional capital charge for mark-to-market losses, i.e., credit valuation adjustment (CVA) risk, associated with deterioration in the creditworthiness of a counterparty. The new CVA capital charge would promote sound practices in managing this risk and recognise its hedging which would allow banks to mitigate the impact of this capital charge. As far as financial markets are concerned, the recognition of hedging is likely to cause an increase of demand for both single-name and index credit default swaps (CDS) and contribute to further growth of the corporate CDS market.

To address the systemic risk within the financial sector, this option suggests raising the risk weights on exposures to financial institutions relative to the non-financial corporate sector, as

financial exposures are more highly correlated than non-financial ones.<sup>70</sup> This amendment is expected to encourage diversification of counterparty risk among smaller institutions and, overall, should contribute to less interconnectedness between large or systemically important institutions and, possibly, limit the propagation of a shock originating in a default of a large or systemically important financial institution (SIFI). This option would also mitigate the cyclical nature of CCR capital requirement by requiring to calculate it based on data that includes a period of stress and would strengthen standards for CCR management, including collateral management, stress testing and model back-testing.

This option would also considerably reinforce the existing incentives for institutions to use CCPs for OTC derivatives as it would increase the assessed capital requirements against such exposures if completed on a bilateral basis rather than through a CCP. Assuming that most institutions dealing with OTC derivatives move to CCP clearing, a number of the derivatives currently traded on the OTC markets would have to become more standardized. Standardisation can be a powerful tool of raising market efficiency and liquidity, however, as regards hedging, it might in certain instances weaken the relationship between a derivative and underlying risk/instrument and can therefore not be extended to the entire OTC derivatives market.

Due to proposals under this policy option, RWAs of EU Group 1 banks on average increase by some 10%<sup>71</sup>, with the increase concentrated in 3 MS. Most of the increase is driven by the proposed CVA charge. The average increase in RWAs of Group 2 banks is negligible, illustrating that these banks have typically less exposure to OTC derivatives.

#### *Policy option 4.3: Enhance CCR requirement and differentiate treatment of exposures to CCPs*

This policy option reflects the new CCR framework adopted by the Basel Committee that was outlined in the Basel III rules text in December 2010. It builds on the policy option 4.2 and entails a recalibration and differentiation of the treatment of exposures to CCPs depending on the type of the exposure a credit institution has vis-à-vis a CCP (i.e., collateral & mark-to-market exposures versus default fund contributions<sup>72</sup>) and whether the respective CCP complies with a set of stringent risk management standards.<sup>73</sup> Compared to the existing regime, these changes would lead to an increase of capital requirement for exposures to CCPs. However, institutions would still be expected to use CCPs for OTC derivative clearing as the increase in capital requirement for exposures arising from bilaterally cleared transactions would be significantly greater.

The overall increase in regulatory capital under this policy option would be greater than that under option 4.2. Importantly, it is expected to limit the scope for contagion (banks should be less affected by a default of counterparty) and contribute to strengthening of the financial

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<sup>70</sup> For regulated financial institutions with assets in excess of \$100 billion and unregulated financial institutions regardless of their size

<sup>71</sup> Not including capital charges for exposures to CCPs

<sup>72</sup> The default fund contributions are designed to cover losses, over and above initial margin, following a clearing member default

<sup>73</sup> As CCPs also concentrate risk, a CCP with insufficiently robust risk management processes can actually increase the systemic risk. To address this, in 2010 the Commission adopted a proposal for a Regulation on OTC derivatives, central counterparties and trade repositories, which envisages subjecting CCPs to stringent business conducts and harmonised organisational and prudential requirements such as internal governance rules, audit checks, greater requirements on capital etc; see [http://ec.europa.eu/internal\\_market/financial-markets/derivatives/index\\_en.htm#proposals](http://ec.europa.eu/internal_market/financial-markets/derivatives/index_en.htm#proposals)

stability, which may further translate into lower risk premia banks have to pay for obtaining funds and better availability of financing for the economy.

In the context of this option, the Commission services publicly consulted on the capitalisation of exposures to CCPs and the treatment of incurred CVA in February-March 2011<sup>74</sup>.

The latter deals with the issue of how to treat losses against the CVA risk which a bank in question writes down upfront. Given that incurred CVA has been recognized in the Profit & Loss account, and thus effectively represents an amount that cannot be lost again were the counterparty to default, the Basel Committee suggested a treatment where incurred CVA could be deducted from the exposure amount (Exposure at Default) in the calculation of the capital requirements for the default component of CCR.

A vast majority of respondents to the Commission services' consultation nevertheless expressed serious concerns about such an approach, arguing that it is conceptually inadequate and that the degree of the recognition of incurred CVA is disproportionately low.

The Commission services have extensively analysed the comments received<sup>75</sup> and as subsequently suggested an alternative treatment, which would allow for a greater, however still prudent, degree of recognition of incurred CVA. In essence, such treatment would allow institutions applying the IRB approach to offset the regulatory expected loss for CCR by the amount of incurred CVA, but this offset would be capped at the level of expected loss on the trade/netting set to which it relates. Institutions applying the Standardised Approach would be subject to the same treatment as proposed by the Basel Committee.

The Commission services consider the above alternative treatment for institutions applying the IRB approach conceptually sounder, consistent with the rest of the regulatory framework applied to those institutions and more effective in eliminating the double count referred to above. The benefits of such approach would nevertheless be somewhat diminished by the possible costs implied for internationally active banks by divergence from the treatment proposed by the Basel Committee, provided that such treatment is confirmed and implemented as announced in the Basel III framework published in December 2010.

However, in the view of the Commission services any such divergences would not have material implications for the EU industry overall and therefore are not elaborated further in this assessment.

### Comparison of policy options

Policy option 4.1 entails possible significant costs in terms of inadequate management standards for CCR. In contrast, policy option 4.2 is effective in addressing all key shortcomings outlined in section 3.4. It ensures more adequate and less cyclical capital requirements for CCR, thus, helping to reduce the systemic risk across the financial system.

Additional measures proposed under policy option 4.3 contribute to the effectiveness of this option with regard to enhancing capital requirements (objective S-1) and bank risk management (objective S-2) and reducing the systemic risk as they ensure an appropriate capitalisation for exposures to CCPs and provide incentives to move OTC derivative

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<sup>74</sup> [http://ec.europa.eu/internal\\_market/bank/regcapital/index\\_en.htm#consultation\\_credit\\_risk](http://ec.europa.eu/internal_market/bank/regcapital/index_en.htm#consultation_credit_risk)

<sup>75</sup> [http://circa.europa.eu/Public/irc/market/market\\_consultations/library?l=/financial\\_services/credit-risks&vm=detailed&sb=Title](http://circa.europa.eu/Public/irc/market/market_consultations/library?l=/financial_services/credit-risks&vm=detailed&sb=Title)

contracts to CCPs with the highest risk management standards. As a result, policy option 4.3 is identified as a preferred policy option.

**Table 7: Summary of policy option effectiveness and efficiency**

Policy Option	Policy Option Comparison Criteria				Efficiency
	Effectiveness				
	Enhance adequacy of capital and liquidity requirements [S-1]	Enhance bank risk management [S-2]	Align prudential requirements for SIFIs with the risks they pose [S-7]	Reduce cyclical of bank lending [S-9]	
4.1 Retain current approach	3	3	3	3	3
4.2 Enhance CCR requirement	2	2	2	2	2
4.3 Enhance CCR requirement and differentiate treatment of exposures to CCPs	1	1	1	1	1

Scale of option ranking: 1=most effective / efficient, 3=least effective / efficient

Effectiveness measures extent to which options achieve relevant objectives

Efficiency measures extent to which objectives can be achieved for a given level of resources

#### 5.4. Leverage

To address the build-up of excessive leverage on banks' and investment banks' balance sheets and to contain the cyclical of bank lending, the Commission services investigated a possibility of introducing a non risk-based leverage ratio. The main policy options in this area are as follows:

- **Policy option 5.1:** Retain current approach;
- **Policy option 5.2: Introduce** supplementary non-risk based **leverage ratio as specified in the February 2010 public consultation;**
- **Policy option 5.3: Conduct extensive monitoring of** different types of supplementary non-risk based **leverage ratio.**

##### Policy option 5.1: Retain current approach

Under this policy option the risk of excessive leverage during the next economic upturn would not be addressed other than by increased capital requirements, once adopted. Also, there would be no overall backstop against model. In addition, supervisors may introduce various national treatments in this area, which could undermine the level playing field within the EU and internationally.

##### Policy option 5.2: Introduce leverage ratio as specified in the February 2010 public consultation

This policy option would introduce a leverage ratio as per the definition included in the public consultation of February 2010. In the process of the EU QIS, several possible variations of the ratio were assessed.<sup>76</sup> For the principal variant of the ratio<sup>77</sup> QIS showed that smaller EU banks are less leveraged: the average Group 2 bank leverage ratio of 3.1% is almost double that of 1.6% of Group 1 banks. This is mostly explained by larger Group 1 banks being more impacted by the new definition of Tier 1 capital (see section 5.2) and the proposed treatment for non-traditional banking assets such as derivatives.

<sup>76</sup> For example, both Tier 1 and total capital for the numerator of the ratio were considered, while for the calculation of the exposure base (the denominator) a possibility of excluding high quality liquid assets from the on-balance sheet exposure amount was examined

<sup>77</sup> Numerator defined as the new definition of Tier 1 capital, while denominator defined as both on- and off-balance sheet exposures. As regards off-balance sheet exposures, credit conversion factor of 100% was used, written credit derivatives were measured at 100% of their notional value, other derivatives measured at potential future exposure, and no netting of financial derivatives was recognised

Feedback to the public consultations indicated that the exposure base (i.e., denominator of the ratio) under this option in some cases may give a too wide capture of leverage.<sup>78</sup> Furthermore, both national authorities and the industry expressed concerns that institutions with lower risk business models would be affected disproportionately as low capital requirements of such institutions would result in higher leverage ratios. Given that these institutions are critical for providing credit to the real economy (including to SMEs) a wrong calibration of the leverage ratio might therefore have unintended consequences for the economic recovery.

Policy option 5.3: Conduct extensive monitoring of leverage ratio

While a non risk-based supplementary leverage ratio (although differently defined) already exists in the US, Canada and Switzerland, experience with this measure in the EU is very limited. Therefore, both its definition and its calibration need to be chosen very carefully to avoid any unintended adverse impacts. Importantly, discussions on the design of the ratio at the level of the Basel Committee also confirmed many of these concerns. Therefore, Basel III rules text foresees a review period of a full credit cycle to assess the effectiveness of this policy measure. Such review would assess impacts on lower risk business models; lending to SMEs and trade financing; interaction of the ratio with the risk based capital requirements and other aspects. The review of the leverage ratio would also consider the impact that differences in financial reporting frameworks may have on comparability and the international level playing field for the EU credit institutions.

The Commission services intend to conduct such monitoring for several alternative definitions of the numerator and the denominator of the ratio, including the definitions outlined in Basel III rules and in February 2010 public consultation, which would feed into the development of the most effective variant of this policy measure. Prior to making it a binding measure from 2018, on the basis of the review the Commission services will prepare a report and a proposal on the final design and calibration of the leverage ratio.

Comparison of policy options

Effectiveness of the current scenario (option 5.1) depends on the actions taken in this area by national supervisors and/or the industry which is no guarantee that necessary progress would be achieved quickly enough and evenly across the EU. While most of alternative formulations of the ratio examined under option 5.2 would provide for a certain degree of effectiveness as regards contributing to the achievement of objectives S-1 (Enhance adequacy of capital and liquidity requirements), S-2 (Enhance bank risk management), and S-9 (Reduce cyclicality of bank lending), they also entail a risk of unintended consequences. Policy option 5.3 is expected to be more effective and efficient than option 5.2 due to its more appropriate – from a prudential angle - design and calibration following the monitoring exercise and, therefore, is chosen as a preferred option.

**Table 8:** Summary of policy option effectiveness and efficiency

Policy Option	Policy Option Comparison Criteria			
	Effectiveness			Efficiency
	Enhance adequacy of capital and liquidity requirements [S-1]	Enhance bank risk management [S-2]	Reduce cyclicality of bank lending [S-9]	
5.1 Retain current approach	3	3	3	3

<sup>78</sup> These cases include application of proposed conversion factors of 100% for unconditionally cancellable off-balance sheet exposures such as credit cards and of gross nominal values of derivatives without allowing for netting under the Basel II framework

Policy Option	Policy Option Comparison Criteria			
	Effectiveness			Efficiency
	Enhance adequacy of capital and liquidity requirements [S-1]	Enhance bank risk management [S-2]	Reduce cyclicity of bank lending [S-9]	
5.2 Introduce leverage ratio as specified in the February 2010 public consultation	2	2	2	2
5.3 Conduct extensive monitoring of leverage ratio	1	1	1	1

Scale of option ranking: 1=most effective / efficient, 3=least effective / efficient

Effectiveness measures extent to which options achieve relevant objectives

Efficiency measures extent to which objectives can be achieved for a given level of resources

## 5.5. Capital buffers

In line with the conclusions of its report on the effects of the CRD on the economic cycle, the Commission services examined a possibility of policy instruments that would move in a counter-cyclical fashion to bank capital levels, i.e., would increase in economic upturns and decrease in downturns. The key policy options in this area are as follows:

- **Policy option 6.1:** Retain current approach;
- **Policy option 6.2:** Introduce a capital buffer to enhance individual banks' ability to absorb losses over prolonged periods of market stress, i.e., **capital conservation buffer**;
- **Policy option 6.3:** Introduce a capital buffer to protect banks from periods of risk build-up at the macro level, i.e., **countercyclical capital buffer**;
- **Policy option 6.4:** Introduce a **dual capital buffer**, comprising both a capital conservation buffer and a countercyclical capital buffer.

### Policy option 6.1: Retain current approach

Under this policy option the pro-cyclicality would be addressed only with the policy measures that have been already adopted by the Commission or new measures adopted by MS. However, since the pro-cyclicality is driven by a number of drivers, additional measures are necessary, in particular, to address market failures of behavioural nature which contribute to building up of systemic risk and weaken financial resilience of individual firms in times of stress. Moreover, tackling of the problem of a systemic nature requires certain macro-level and / or cross-border arrangements which are feasible only with the EU level action.

### Policy option 6.2: Capital conservation buffer

The design of a capital conservation buffer was laid out in the Commission services' public consultation of February 2010. The buffer would have a fixed target over the regulatory capital minimum to absorb losses in 'stressed' periods that may span a number of years. Banks would be expected to build up such capital in good economic times. Those banks that fell below the target would face constraints on discretionary distributions of earnings (i.e., dividend payments, share buybacks, discretionary payments on other Tier 1 capital instruments and discretionary bonus payments to staff) until conservation capital buffer target is reached.<sup>79</sup> These rules would be applied at the consolidated group level, however, in order to conserve resources in specific parts of the group national supervisors would have an option to apply the regime at the 'solo' level.

Such approach would be effective at ensuring that the banking sector accumulates capital buffers when it has the earnings capacity to do so. This should enhance resilience of

<sup>79</sup> The further from the target (within the range between the minimum and the target) the level of capital falls, the higher percentage of its earnings in the subsequent year a bank would be required to conserve

individual institutions in periods of stress by positioning them to absorb related losses. However, this approach does not ensure that retention of capital to cover risks at the individual bank level would coincide with the periods of excessive credit growth at the macro level and a concomitant build-up of systemic risks which need to be prevented to protect banks (as well as other economic agents) from consequences of ensuing systemic crises.

### *Policy option 6.3: Countercyclical capital buffer*

The design of a countercyclical capital buffer was laid out in the Commission services' public consultations of February 2010 and October 2010. The buffer would take account of the macro-financial environment in which banks operate. National supervisors would set the buffer for credit exposures in their jurisdiction. The buffer would be subject to an upper bound and would only be imposed when there is evidence that the excess credit growth results in a build-up of the system-wide risk.<sup>80</sup> Banks with exclusively domestic credit exposures would only be subject to the buffer determined by their national supervisors. In relation to exposures located in other MS, banks providing services by means of a branch or free provision of services would apply the buffer as determined by the host MS supervisors, when the buffer is set between 0% and 2.5% of risk weighted assets.<sup>81</sup> When the buffer determined by host MS exceeds 2.5%, home MS authorities would be allowed, but not obliged to apply a buffer rate higher than 2.5%.

Banking groups having subsidiaries in other MS for the purposes of calculating the buffer on the consolidated basis would have to apply the buffer add-ons determined by the competent authorities of the subsidiaries. In practice, this means that cross-border credit institutions would have to look at the geographic location of their credit exposures and calculate their countercyclical capital buffer according to the buffers prevailing in those MS where their exposures are located. For groups, decisions on the level of the counter-cyclical buffer could take place in the context of the joint decision process of Article 129(3) of the CRD whereby the consolidating supervisor and the other relevant competent authorities would consult each other and decide on the application of the buffer at consolidated level and at the level of each subsidiaries. The consequences of not meeting the countercyclical capital buffer would be the same as those of not meeting the capital conservation buffer (i.e., constraints on discretionary distributions of earnings).

This policy option would be effective at ensuring that bank capital regulation is responsive to macro-financial environment and, in turn, would protect the banking sector from systemic risk linked to excessive credit growth. At the level of individual institutions, however, it may not be entirely effective at ensuring that banks have sufficient capital buffers to absorb losses incurred during protracted turbulent periods.

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<sup>80</sup> The size of the buffer would be linked to aggregate private sector credit/GDP gap. When credit/GDP is near or below its long-term trend, the buffer would be set to zero and when credit/GDP exceeds its long term trend by an amount which suggests there could be excess credit growth, the buffer would be greater than 0. Analysis of the credit/GDP gap showed that it does not always work well in all jurisdictions at all times. Thus, rather than relying mechanistically on the credit/GDP guide, supervisors would be expected to apply judgment in setting of the buffer in their jurisdiction. In this context, ESRB may provide guidelines to national supervisors on how to apply the buffer.

<sup>81</sup> The corresponding treatment applies to exposures located in 3<sup>rd</sup> countries. In cases where banks have exposures to jurisdictions that do not operate and publish buffer decisions, national supervisors would have to set buffers for such exposures. Also, ESRB may issue recommendations on level of buffers set at home MS and for 3<sup>rd</sup> countries.



#### Policy option 6.4: Dual capital buffer

The design of a dual capital buffering approach was laid out in the Commission services' public consultations of February 2010 and October 2010. The approach effectively entails a combination of policy options 6.2 and 6.3 and is broadly aligned with the approach of the Basel Committee.<sup>82</sup> Combining the two buffers means that application of the countercyclical buffer would take effect by adjusting the size of the buffer range established by the conservation buffer. Other key modalities of operating such a dual capital buffer would remain as presented in discussion of its individual components. The key advantage of this policy option over the other two alternatives is that by combining them it addresses their respective shortcomings discussed above.

The calibration of this policy option is presented in Table 2 while its impact on the EU banking industry is assessed in section 5.8 (cumulatively with new minimum capital requirements). Capital buffers are expected to protect banks in the downturn period thanks to the release of the buffer and limit the risks of negative spill-overs on the real economy. They may, however, entail a risk of negative impact on credit volume in 'catching up' countries. While the financial stability implications of this rapid credit growth should certainly be addressed, a balance must be struck in order not to unnecessarily slow down the growth acceleration.<sup>83</sup>

#### Comparison of policy options

As discussed above, policy option 6.1 is largely ineffective in tackling relevant problem drivers. Policy option 6.2 is more effective than option 6.3 in terms of enhancing banks' capacity to absorb losses over protracted periods of 'stress' (objective S-1) but is less effective than option 6.3 in terms of operating in a countercyclical manner, which is a precondition for minimizing the cyclicity of bank lending (S-9). Policy option 6.4 addresses the above concerns by combining the two types of capital buffers into one buffering approach. In terms of compliance costs for the banking industry, option 6.2 would be the most costly and option 6.3 would imply the least compliance costs, as the countercyclical buffer would be applied only in times when credit growth at the aggregate level becomes excessive, whereas costs related to option 6.4 would fall in between the two extremes. However, when effectiveness of policy options is considered simultaneously, option 6.4 is identified as the most efficient alternative, and, in turn, as a preferred policy option.

**Table 9:** Summary of policy option effectiveness and efficiency

Policy Option	Policy Option Comparison Criteria			
	Effectiveness			Efficiency
	Enhance adequacy of capital and liquidity requirements [S-1]	Enhance bank risk management [S-2]	Reduce cyclicity of bank lending [S-9]	
6.1 Retain current approach	4	4	4	4
6.2 Conservation capital buffer	1-2	1-3	3	2-3
6.3 Countercyclical capital buffer	3	1-3	1-2	2-3
6.4 Dual capital buffer	1-2	1-3	1-2	1

Scale of option ranking: 1=most effective / efficient, 4=least effective / efficient

Effectiveness measures extent to which options achieve relevant objectives

Efficiency measures extent to which objectives can be achieved for a given level of resources

<sup>82</sup> Proposals foresee the EU-specific involvement of ESRB to foster macro-prudential supervision and integration of 'capital conservation plans' whereby banks that operate in the buffer zone would have to present such plans to their supervisor for approval of capital conservation measures.

<sup>83</sup> This is addressed by allowing for supervisory judgement on the buffer level and on the timing of its activation

## 5.6. Single rule book in banking

The options regarding the deletion of option and national discretions will be referred to in the rest of the analysis as follows:

- **Policy option 7.1:** Retain current approach;
- **Policy option 7.2: Minimum harmonization** of national supervisory approaches;
- **Policy option 7.3: Maximum harmonization** of national supervisory approaches;
- **Policy option 7.4: Maximum harmonisation** of national supervisory approaches **with some exceptions.**

### Policy option 7.1: Retain current approach

Under this option, national options and discretions will be kept in the CRD together with a 'minimum harmonisation' approach allowing MS to lay down stricter prudential rules, leaving the problems outlined in section 3.6 unaddressed.

### Policy option 7.2: Minimum harmonization

Under this approach, options and discretions would be removed, but the CRD would be kept as a minimum harmonisation directive. The removal of other options and discretions would take place in the framework of the existing CRD rules via mutual recognition, deletion, granting choice to institutions and making an option a general rule. Supervisors would still be able to require compliance with stricter rules, because of the possibility of gold-plating. Because of gold-plating, the option might be partially effective with respect to objectives of enhancing supervisory cooperation and level playing field, as certain degree of differences in national supervisory approaches would be preserved.

The option should not represent a significant incremental change to capital requirements and in the long run may result in compliance cost savings, particularly for institutions with cross-border activities.<sup>84</sup> In the short term, the removal of options and discretions would imply increase in compliance costs with a new set of rules, however.<sup>85</sup>

### Policy option 7.3: Maximum harmonization

The deletion of national options needs to be coupled with a maximum harmonisation approach to fully deliver on the objectives of reducing compliance burden, enhancing level playing field, legal clarity and supervisory convergence. This option would also maximize the role of EBA in ensuring a consistent set of harmonised rules.<sup>86</sup> The scope of 'maximum harmonisation' would be limited to Pillar 1 (minimum capital requirements, large exposures rules, liquidity, own funds) and Pillar 3 (disclosure) provisions of the CRD. Other areas of the directive do not lend themselves to maximum harmonisation because of specific risk assessments (e.g., Pillar 2) or the absence of full harmonisation.

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<sup>84</sup> Based on the exercise to measure the baseline administrative costs and burden of the EU legislation, which included the CRD and was conducted in 2008, total annual administrative costs related to the CRD are roughly €851 million with the ensuing administrative burden of €333 million. See *EU Project on Baseline Measurement and Reduction of Administrative Costs*, Report on the Financial Services Priority Area, March 2009

<sup>85</sup> This holds true in particular in relation to banks subject to the IRB approach, where internal systems would have to be slightly changed

<sup>86</sup> As a result, EBA will be expected to develop some 50+ technical standards in various policy areas which will have an impact on its human resources requirements and related costs.

Downside to this approach is that maximum harmonisation may limit the ability of MS to require stricter rules on the financial stability grounds. This shortcoming should not be over-estimated given that supervisors may resort to Pillar 2 to tailor capital requirements to the risks to which a bank is exposed. In addition, to this end Basel III provides for a macro-prudential capital buffer, discussed under section 5.5, whereby, if necessary, national supervisors would be able to set a countercyclical buffer level in excess of 2.5%.<sup>87</sup> Importantly, by ensuring that firms follow the same rules in all EU markets, maximum harmonisation is intended to boost confidence in the stability of credit institution across the EU, especially in time of stress, and thus enhance the financial stability.

It should also be noted that under options 7.1 and 7.2 the application at national level of stricter rules for reasons of the financial stability would only be applicable to domestic banks and subsidiaries of foreign banks in that country. Such regulatory changes would create regulatory arbitrage opportunities for branches in those MS, partly invalidating macro-prudential policy actions. Under this option, a regulation would enable the Commission to adopt temporary increases in minimum standards, preventing regulatory arbitrage and contributing to the effectiveness of macro-prudential policy actions.

Nevertheless, there are circumstances where gold-plating is rooted in market / product specificities or the legal framework of a MS.<sup>88</sup> Thus, consideration of some flexibility to the maximum harmonisation approach seems to be warranted.

#### *Policy option 7.4: Maximum harmonization with some exceptions*

Under this option, the single rule book would provide for some flexibility to resort to gold-plating in areas rooted in market/local product specificities or the legal framework of MS.

Analysis of CEBS' advice and discussions with stakeholders suggest that areas for the application of stricter rules may include the preferential treatment of real estate exposures, lending in foreign currency and 'high risk items' identified by EBA guidelines. In addition, in order to enhance national and EU financial stability, this policy option foresees a possibility for MS to 'gold-plate' the new minimum requirements that would otherwise be phased in from 2013 to 2019 as outlined in Table 3. This means that MS would be allowed to apply in 2013 the level of capital required by Basel III in 2019.

This approach would be similar to the one adopted in other legislative texts (e.g., the MiFID), which provide for a full harmonisation while allowing MS to adopt stricter rules in well identified areas of the text.

#### *Comparison of policy options*

Retaining the current scenario (policy option 7.1) implies that the relevant problems are not addressed and effectiveness of EBA is compromised. Maximum harmonization (policy option 7.3) is more effective than minimum harmonization (policy option 7.2) and maximum harmonisation with some exceptions (policy option 7.4) with respect to attaining objectives of

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<sup>87</sup> Such level should apply only to institutions that are incorporated in their jurisdictions. The buffer should be capped at 2.5% for the purposes of calculating the institution specific countercyclical capital buffer of all other institutions that have credit exposures in the jurisdiction in question.

<sup>88</sup> During the public consultations, some supervisors stressed the need of being able to apply stricter quantitative limits (e.g., lower LTV ratios for a preferential treatment of real estate) given the specificities of their local market

enhancing supervisory cooperation and convergence (S-7), enhancing legal clarity (S-4) and enhancing level playing field (S-6) as it contains both the deletion of national options and the removal of the possibility to supplement the CRD provisions with national legislation. Option 7.3 is perceived to be less effective than option 7.4 in terms of achieving the objective of enhancing financial stability in national MS as it does not cater for specificities of local markets (G-1). In this regard, option 7.4 entails a harmonised and transparent regulatory framework that is intended to enhance the financial stability together with a possibility of applying stricter rules in certain cases. From the efficiency angle, option 7.3 appears to be the most efficient for banking groups with cross-border operations (due to the greater expected savings of administrative costs), whereas for banks with domestic operations, options 7.2 and 7.4 may be more efficient (lower costs due to fewer changes in national rules as a result of their harmonisation at the EU level).

In summary, policy option 7.4 (Maximum harmonization with some exceptions) is identified as a preferred option, as it entails the most balanced trade-off between expected effectiveness in terms of contributing towards relevant policy objectives, including the objective of financial stability, and the net administrative cost implications for the EU banking industry.

**Table 10:** Summary of policy option effectiveness and efficiency

Policy Option	Policy Option Comparison Criteria						Efficiency
	Effectiveness						
	Prevent regulatory arbitrage opportunities [S-3]	Enhance legal clarity [S-4]	Reduce compliance burden [S-5]	Enhance level playing field [S-6]	Enhance supervisory cooperation and convergence [S-7]	Enhance financial stability [G-1]	
7.1 Retain current approach	4	4	4	4	4	2-4	4
7.2 Minimum harmonisation	3	3	1-3	3	3	2-4	1-3
7.3 Maximum harmonisation	1-2	1	1-3	1	1	2-4	1-3
7.4 Maximum harmonisation with some exceptions	1-2	2	1-3	2	2	1	1-3

Scale of option ranking: 1=most effective / efficient, 4=least effective / efficient  
 Effectiveness measures extent to which options achieve relevant objectives  
 Efficiency measures extent to which objectives can be achieved for a given level of resources

**5.7. Choice of policy instrument**

This section discusses the options as regards the most appropriate way of implementing the preferred policy choices discussed in sections 5.1-5.6. The key alternatives that were considered are as follows:

- **Policy option 8.1: Amend the CRD** to integrate the proposed provisions;
- **Policy option 8.2: Limit the scope of the CRD** to authorization and arrangements for ongoing supervision **and propose a regulation** on prudential requirements for credit institutions.

Policy option 8.1: Amend the CRD

The policy options retained in the sections above could be implemented by amending the CRD. This would maintain coherence of rules in the three areas of authorisation, ongoing supervision, and prudential requirements in one single text. This option would leave MS with a certain degree of flexibility to maintain divergent rules at the stage of their transposition into

national law. It would give MS the option of imposing stricter rules on matters which are not fully harmonised under the preferred policy option 7.4 (Maximum harmonisation with some exceptions). Finally, MS could continue to integrate the rules into national legal texts.

### *Policy option 8.2: Limit the scope of the CRD and propose a regulation*

The policy options retained in the sections above could also be implemented by two separate instruments: an amendment of the CRD concerning authorisation of credit institutions and arrangements for their supervision, and a new regulation on prudential requirements. Separating prudential requirements from the other two areas would reflect differences in subject-matter, nature and addressees. Prudential requirements establish criteria for the evaluation of the risk linked to certain banking activities and of the funds necessary to counter-balance those risks. As such, they do not regulate access to deposit taking activities but govern the way in which such activities are carried out in order to ensure protection of depositors and financial stability.

Shaping prudential requirements in the form of a regulation would ensure that those requirements, which already today are worded as obligations for credit institutions ("credit institutions shall..."), will in fact be directly applicable to them. This would prevent the transposition from producing diverging national requirements. At the same time, this instrument could cater for the flexibility needed under option 7.4 (Maximum harmonisation with some exceptions) as rules on authorisation and ongoing supervision would continue to be in the form of a directive. As regards prudential requirements, if in some limited areas flexibility would be needed for MS to lay down stricter rules, this could be accommodated by an appropriate wording in the regulation.

A regulation would clearly demonstrate that credit institutions follow the same rules in all EU markets, which should boost confidence in the stability of credit institutions across the EU, especially in times of stress. Being directly applicable across the EU, it would reduce regulatory complexity and firms' compliance costs, especially for credit institutions operating on a cross-border basis, and would contribute to the elimination of regulatory arbitrage opportunities.

### *Comparison of policy options*

Policy option 8.2 (Limit the scope of the CRD and propose a regulation) is more effective than option 8.1 (Amend the CRD to integrate the proposed provisions) with regard to contributing to the achievement of objectives of preventing regulatory arbitrage opportunities (S-3), enhancing legal clarity (S-4), reducing compliance burden (S-5), enhancing supervisory convergence (S-7), enhancing financial stability (G-1) and safeguarding depositor interests (G-2), as outlined above. It also entails a more efficient alternative since a regulation on prudential requirements would enable the EU to implement any changes faster, as they would not require transposition by national legislators.<sup>89</sup> On this basis, option 8.2 is identified as a preferred policy option.

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<sup>89</sup> This would enable the EU to meet internationally agreed deadlines for implementation and to react quicker when market developments require changes to the rules

**Table 11: Summary of policy option effectiveness and efficiency**

Policy Option	Policy Option Comparison Criteria						Efficiency
	Effectiveness						
	Prevent regulatory arbitrage opportunities [S-3]	Enhance legal clarity [S-4]	Reduce compliance burden [S-5]	Enhance supervisory cooperation and convergence [S-7]	Enhance financial stability [G-1]	Enhance safeguarding of depositor interests [G-2]	
8.1 : Amend the CRD	2	2	2	2	2	2	1
8.2 Limit scope of the CRD and propose a regulation	1	1	1	1	1	1	1

Scale of option ranking: 1=most effective / efficient, 2=least effective / efficient

Effectiveness measures extent to which options achieve relevant objectives

Efficiency measures extent to which objectives can be achieved for a given level of resources

## 5.8. Cumulative impact of the package

This section discusses the cumulative impact of preferred options within individual areas as presented in the preceding sub-sections. It looks at the cumulative impact of proposals in terms of additional capital that EU banking industry needs to raise in order to meet the new minimum capital requirements. Next, impact of the proposal on costs related to information provision to supervisors and third parties is discussed. Finally, impacts of tighter capital and liquidity requirements on the EU economy in the transitional period and in the long-term are assessed.

### 5.8.1. Package of preferred options and relevant transitional provisions

The following table summarizes the twenty seven policy options analysed. Individual options within each policy set are ranked in terms of their relative effectiveness<sup>90</sup> and efficiency<sup>91</sup> with regard to achieving applicable longer term policy (specific) objectives. Preferred options, where identified in the impact assessment, are highlighted.

**Table 12: Summary of policy option effectiveness and efficiency**

Policy Option Set	Policy Options	Policy Option Comparison Criteria									Efficiency
		Effectiveness									
		Enhance adequacy of capital requirements	Enhance bank risk management	Prevent regulatory arbitrage opportunities	Enhance legal clarity	Reduce compliance burden	Enhance level playing field	Enhance supervisory cooperation and convergence	Align prudential requirements for SIFIs with the risks they pose	Reduce cyclicality of provisioning and capital requirements	
Liquidity Coverage ratio	1.1 Retain current approach	3	3								3
	1.2 Introduce LCR as specified in Feb 2010 PC	2	2								1
	1.3 Introduce LCR adopted by Basel Committee subject to observation period	1	1								2
Net Stable Funding ratio	2.1 Retain current approach	3	3								3
	2.2 Introduce NSFR as specified in Feb 2010 PC	2	2								2
	2.3 Introduce NSFR adopted by Basel Committee	1	1								1
Eligibility of capital instruments and application of regulatory adjustments	3.1 Retain current approach	5	5	5			5		5	5	5
	3.2 Modify only the eligibility criteria as specified in Feb 2010 PC	4	4	4			4		4	4	4
	3.3 Modify eligibility criteria and regulatory adjustments as specified in Feb 2010 PC	1-3	1-3	1-3			2-3		1	1-3	3

<sup>90</sup> Measures extent to which options achieve relevant objectives

<sup>91</sup> Measures extent to which objectives can be achieved for a given level of resources

Policy Option Set	Policy Options	Policy Option Comparison Criteria									Efficiency
		Effectiveness									
		Enhance adequacy of capital requirements	Enhance bank risk management	Prevent regulatory arbitrage opportunities	Enhance legal clarity	Reduce compliance burden	Enhance level playing field	Enhance supervisory cooperation and convergence	Align prudential requirements for SIFIs with the risks they pose	Reduce cyclicality of provisioning and capital requirements	
	3.4 Modify eligibility criteria and regulatory adjustments based on Basel approach	1-3	1-3	1-3			2-3		2-3	1-3	2
	3.5 Modify eligibility criteria and regulatory adjustments based on Basel approach with some adjustments for EU specificities	1-3	1-3	1-3			1		2-3	1-3	1
Counterparty credit risk	4.1 Retain current approach	3	3						3	3	3
	4.2 Enhance CCR requirement	2	2						2	2	2
	4.3 Enhance CCR requirements and differentiate treatment of exposures to CCPs	1	1						1	1	1
Leverage ratio	5.1 Retain current approach	3	3							3	3
	5.2 Introduce leverage ratio as specified in Feb 2010 PC	2	2							2	2
	5.3 Conduct extensive monitoring of leverage ratio	1	1							1	1
Capital buffers	6.1 Retain current approach	4	4							4	4
	6.2 Conservation capital buffer	1-2	1-3							3	2-3
	6.3 Countercyclical capital buffer	3	1-3							1-2	2-3
	6.4 Dual capital buffer	1-2	1-3							1-2	1
Single rule book	7.1 Retain current approach			4	4	4	4	4			4
	7.2 Minimum harmonization			3	3	1-3	3	3			1-3
	7.3 Maximum harmonization			1-2	1	1-3	1	1			1-3
	7.4 Maximum harmonization with some exceptions			1-2	2	1-3	2	2			1-3
Choice of policy instrument	8.1 Amend the CRD			2	2	2		2			2
	8.2 Limit scope of the CRD and propose a regulation			1	1	1		1			1

Scale of option ranking: 1=most effective / efficient, 5=least effective / efficient

The proposed calibration, including phase-in and grandfathering arrangements, of the package is aligned with the Basel III rules text and is shown in Tables 2 and 3 above.<sup>92</sup> To set the new level of minimum capital requirement and capital buffers, the Basel Committee conducted a number of supporting analyses.<sup>93</sup> In terms of the new minimum going-concern capital, it found that, for instance, the median of the 99<sup>th</sup> percentile distributions of historical annual risk-weighted returns across six jurisdictions of the Committee is about -5%.<sup>94</sup> With some adjustments for the impact that Basel III is expected to have on RWAs and eligible capital, this served as a basis for the new level of CET1 and T1 capital requirements.

As regards calibration of capital buffers, cumulative net income of 73 banks from 14 countries over the financial crisis period (from Q3 2007 to Q4 2009) as a share of year-end 2006 RWAs was analysed. This analysis showed that mean losses<sup>95</sup> of banks with negative cumulative net income over this period equalled 5% of RWAs. During major crises, when access to capital

<sup>92</sup> It needs to be noted that Switzerland has announced its intention to proceed with more stringent requirements than agreed by the Basel Committee. However this pertains to requirements for its two systemically important financial institutions. Similarly, the Independent Commission on Banking of the UK in its interim report of April 2011 suggested that large UK retail banking operations hold equity capital of 10% of their RWAs and that such capitalization should become the international standard for systemically important financial institutions. However, the prudential requirements for such institutions at both the international and the EU level have not been finalised.

<sup>93</sup> See <http://www.bis.org/publ/bcbs180.pdf>

<sup>94</sup> Risk-weighted return measured by RORWA and calculated as the ratio of net income to RWAs

<sup>95</sup> When measured with pre-tax, pre-distribution net income

markets is limited, cumulative losses of such extent can be absorbed only by those banks that have adequate capital buffers, accumulated during more favourable economic conditions.

The rationale for the proposed transitional provisions as well as impacts on the industry, other economic agents and financial stability are discussed in the remainder of section 5.8.

### 5.8.2. Cumulative impact on the industry

When estimating capital shortfall due to the CRD IV package, the impact of new CET1 minimum requirement and capital buffers is assessed together. Table 13 shows estimated impact on capital ratios separately for Group 1 and Group 2 banks after application of the CRD III and IV proposals, assuming a full implementation of both proposals as of December 2009.

**Table 13:** Capital ratios for Group 1 and Group 2 banks, in %:

Group	CET1		T1		Total	
	Gross <sup>1</sup>	New <sup>2</sup>	Old	New	Old	New
Group 1	10,7	4,9	10,3	5,6	14,0	8,1
Group 2	11,1	7,1	10,3	7,6	13,1	10,3

**Notes:** <sup>1</sup> 'Gross' is the ratio of new gross CET1 (without deductions) relative to old RWA. <sup>2</sup> New CET1 shows net CET1 (with deductions) relative to new RWA. 'New' ratios do not reflect the effect of transitional and grandfathering provisions which will mitigate the effective impact on banks' capital ratios in the period up to 2023

**Source:** CEBS

In terms of impact on the CET1 ratio, large EU banks (average CET1 ratio of 4.9%) are affected more than a sample of 74 large international banks from eighteen Basel Committee countries whose average CET1 ratio as of December 2009 stood at 5.7% upon application of equivalent rules.

Changes in capital ratios are driven by the changes in capital definition rules and RWAs. The preferred policy options outlined in this report are expected to increase the RWAs of Group 1 banks on average by 24.5%, and the RWAs of Group 2 banks – by a modest 4.1%. The extent of capital shortfalls that the EU banking industry would face due to the proposals is estimated in the range of €370 billion as of December 2009, at CET1 of 7% (consisting of a minimum requirement of 4.5% and capital conservation buffer of 2.5%).<sup>96</sup> Under the proposal, the existing public sector injections estimated at some €90 billion would be grandfathered until 1 January 2018.<sup>97</sup> In the long run they would add to the CET1 capital shortfall, raising it to some €460 billion or 2.9% of the EU banking sector's RWAs.<sup>98</sup> However, the estimate should be viewed as the high end of the capital shortfall because:

- it is based on bank capitalisation levels as of December 2009 which most likely will have increased in response to supervisory and market pressure even if the CRD were not amended,
- estimates do not incorporate the impact of phasing-in and grandfathering provisions that will spread the impact for most banks during implementation period. More specifically, capital shortfall that the EU banking industry would face at CET1 of 3.5%, effective from 2013, is

<sup>96</sup> Of this figure, some €37 billion is attributable to the CRD III proposal (in terms of Tier 1 capital, as definition of CET1 did not exist prior to CRD IV proposal)

<sup>97</sup> The figures on state aids were not available for all participating MS

<sup>98</sup> Expected shortfall shall not be confused with related cost of capital. On the implications of the proposal on the expected cost of equity please see section 5.8.5.



immaterial, whereas capital shortfall at CET1 of 4.5%, effective from 2015, is estimated at €84 billion<sup>99</sup>,

- it does not capture the interaction between liquidity and capital proposals (i.e., larger proportion of liquid assets that banks will hold in order to comply with LCR will reduce the amount of their RWAs relative to total assets), and

- only the minimum capital requirement is a critical requirement whose breaching would trigger supervisory intervention, whereas consequences of falling behind the capital buffer target are confined to banks' curtailing their discretionary distributions of earnings.<sup>100</sup>

The industry is not expected to raise the entire shortfall amount in the capital markets. For instance, combined net profit of some 100 biggest EU banks in 2009 was around €33 billion and bank profits are likely to rise as economic situation improves and provisions for non-performing loans decline.<sup>101</sup>

As regards the impact of new liquidity requirements, the implications of LCR are discussed in section 5.1.1., while those of NSFR - in section 5.1.2. It should be noted that the estimated shortfalls to comply with LCR and NSFR are not additive since depending on the actions taken to minimize them, decreasing the shortfall in one standard may result in a decrease in the shortfall of the other.

### 5.8.3. *Administrative costs*

Implementation of legislation entails costs for businesses. Costs that are linked to providing information either to public or private parties are called administrative costs. The share of these costs that is specifically linked to information that businesses would not collect and provide in the absence of a legal obligation is called administrative burdens. The Commission's Better Regulation strategy is aimed at measuring administrative costs and reducing administrative burdens. In the area of prudential banking regulation, certain information requirements are necessary to provide for the desired level of financial stability and creditor protection and, hence, should be set at a level that ensures an equilibrium between ensuing administrative burdens and the benefits that they yield. With regard to the legislative changes brought forward with this initiative, it has to be noted that they were undertaken with a view to achieving multiple operational, specific and general objectives (see section 4 of the impact assessment) and had to be designed accordingly.

In August-September 2010, the Commission services distributed a questionnaire to the GEBI members about the impacts of CRD IV proposal on administrative burdens (see Annex VIII). Analysis of replies showed that, overall, the biggest impacts on both the on-going burdens and the related one-off implementation costs are expected due to new measures in the area liquidity risk management, comprising roughly 70% of all administrative burdens. Proposals for the counterparty credit risk were also identified as a source of significant administrative burdens for Group 1 banks. As regards proposal for the 'single rule book', the number and, particularly, the diversity of replies received were insufficient to assess its varying impact by

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<sup>99</sup> This estimate assumes full deductions, i.e., does not account for phase-in arrangements for deductions (40% in 2015)

<sup>100</sup> Counter-cyclical capital buffer is not considered in the above calculation as it would only be in effect when there is an excess credit growth that is resulting in a system wide build-up of risk, but would stay at zero at all other times

<sup>101</sup> Source: Bloomberg, Orbis, Commission services' calculation

MS (which depends on the degree to which options and discretions are exercised) and bank type. In this regard, banks with more cross-border activity would benefit from harmonisation of the current national provisions the most as the ensuing administrative burden savings are expected to reduce their burdens related to Basel III measures.

#### 5.8.4. *Economic impact in transitional period*

A key factor determining banks' responses to new capital and liquidity standards is the length of the period during which the new requirements will be phased in. If the transition period is short, banks may choose to curtail credit supply or adjust capital composition in order to lift capital ratios. A longer transition period could substantially mitigate the impact, allowing banks to retain more of their profits (by reducing dividend payments or improving operational efficiency), issue new equity, reduce fixed costs or take other necessary steps to adjust.

To inform the policy question of appropriate transitional provisions, the Basel Committee and the FSB set up a Macroeconomic Assessment Group (MAG) whose members were macroeconomists and econometricians from central banks, regulatory agencies and international institutions. For the full analysis of MAG please see its Interim and Final Reports that were published in August and December 2010.<sup>102</sup> When applying MAG's key findings in the EU context, it is important to note that its work was based on a high number of macroeconomic models developed and used for policy analysis in central banks and international organisations, with a high representation of models pertaining to MS or broader regions of the EU. The group's Interim Report was based on the results of 89 individual macroeconomic models, of which 51 models relate to the EU<sup>103</sup>, whereas its Final Report used 97 modelling simulations, of which 49 relate to the EU.<sup>104</sup>

MAG modelled implementation scenarios of 2, 4, 6, and 8 years. The key findings as regards transitional periods of 4 and 8 years - as they were given more consideration in Basel III deliberation process - are compared in Table 14. The table also shows the outcomes of the macroeconomic modelling conducted by ECB and the Commission (for more details on the Commission model please see Annex IX).<sup>105</sup> Overall, it shows that shorter implementation scenarios have a greater impact on annual GDP growth rates since the projected decline in the level of GDP relative to baseline would take place over a shorter time. This implies sharper adjustment costs for the industry and the macro-economy. A longer implementation period shall minimize any potential transitory effects on GDP and credit availability. This is in part because the maximum GDP loss is estimated to occur around the end of the transition period, which could be at a more mature and resilient stage of the current recovery.

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<sup>102</sup> See <http://www.bis.org/publ/othp10.htm>, <http://www.bis.org/publ/othp12.pdf>

<sup>103</sup> Of them, 6 models relating the euro area, 9 to FR, 7 to DE, 8 to IT, NL and ES each, and 5 to the UK.

<sup>104</sup> Of them, 20 models relating the euro area, 7 to NL and IT each, 5 to the UK, 4 to FR and 3 to DE and ES each.

<sup>105</sup> For a comparison of various public and private sector quantitative models, please see Annex X

**Table 14:** Overview of the implementation period scenarios for new capital standards

Implementation period	Result / Model	Source	Timing of estimated decline in GDP since start of implementation	Decline in GDP below baseline per percentage point increase in capital requirement, %	Estimated decline in the EU GDP below baseline due to capital shortfall, %	Estimated annual decline in the EU GDP growth below baseline, %
			A	B	C=B*2.9	D=(1+C)^(1/(A/4))-1
Four years	Median of 89 models	MAG	18 quarters	0.19	0.55	0.10
	Median of 16 models with impact on lending standards	MAG	18 quarters	0.32	0.93	0.16
	Median of 11 models with impact on lending standards and endogenous monetary policy	MAG	18 quarters	0.17	0.49	0.09
	Multi country model (with impact on lending standards)	ECB	18 quarters	0.19	0.55	0.10
	Christiano-Motto-Rostagno model	ECB	18 quarters	0.29	0.84	0.15
Eight years	Median of 97 models	MAG	35 quarters	0.17	0.49	0.05
	Median of 12 models with impact on lending standards	MAG	35 quarters	0.23	0.67	0.06
	Median of 14 models with impact on lending standards and endogenous monetary policy	MAG	35 quarters	0.16	0.46	0.04
	Multi country model (with impact on lending standards)	ECB	35 quarters	0.08	0.25	0.03
	Christiano-Motto-Rostagno model	ECB	35 quarters	0.39	1.12	0.09
	DSGE bank-augmented model	European Commission	36 quarters	0.14	0.42	0.04

Sources: Basel Committee, ECB, European Commission

Lengthening of the implementation period would also give banks more time to adjust their business models and cost structures, reduce the severity of the impact of lending cuts on bank-dependent sectors, allow more time for stable non-bank channels of credit intermediation to develop, and give markets more time to absorb the asset sales, debt issues and equity issues that might accompany banks' balance sheet adjustments. Hence, the transitional phase-in and grandfathering provisions for the capital requirements agreed by the Basel Committee and outlined in Table 3 are likely to accommodate the above adjustment processes the most as they effectively imply an eight-year transition period from 2011 to 2018.

As regards the optimum implementation timing for the new liquidity requirements, given their novelty and the related possibility of unintended consequences on financial institutions of different sizes and business lines, observation periods coupled with review clauses are justified. LCR, including any revisions will be introduced on 1 January 2015, while NSFR, with appropriate revisions, will move to the minimum standard on 1 January 2018.<sup>106</sup>

In summary, work of the Basel Committee's MAG, ECB and the Commission on the assessment of macroeconomic costs show that *the transition to stronger capital and liquidity standards is likely to have a limited impact on the aggregate output.*

<sup>106</sup> The increased holding of liquid assets due to LCR is expected to reduce the EU GDP by 0.11% below the baseline after four and a half years from the start of implementation (Sources: the Basel Committee (MAG), EU QIS, Commission services' calculations)

### 5.8.5. Long-term economic impact

It shall be emphasised that the above analyses measured only transitional costs without considering benefits from enhanced financial stability and mitigated pro-cyclicality which would start to accrue immediately, and which have been assessed by the Basel Committee in a separate analysis of the long-term economic impact (LEI).<sup>107</sup> By examining the historical data and a number of studies on the economic costs of systemic crises, it concluded that there are *clear net long term economic benefits from increasing the minimum capital and liquidity requirements from their current levels*. LEI analysis implies annual net benefits of increase in the EU GDP in the range of 0.3%-2% which stem from a reduction in the expected frequency of systemic banking crises<sup>108</sup> and are optimized when CET1 capital is calibrated in the range of 6% to 9%. It needs to be noted that the approach adopted by the Committee was rather conservative and that actual net economic benefits can be expected to be higher. The quantification of benefits did not include those stemming from a reduced severity of future crises and reduced pro-cyclicality in the system. On the cost side assumptions were equally conservative, including a full pass through of costs to customers via lending rates, no reduction in cost of debt and equity (with an ROE assumption based on a high historical average). According to the Modigliani-Miller (MM) propositions<sup>109</sup>, however, increases in banks' capital levels as a result of Basel III shall reduce their leverage and, by making returns to their investors less volatile, the cost of equity. In this respect, macro-economic modelling of the Commission services showed that when the MM propositions are assumed to hold at least partially (50%), economic costs of the new rules in terms of their impact on the GDP are reduced in half by 2020-2030 (see Annex IX).<sup>110</sup> The cost of debt may go down as well because of better capitalization levels.

In addition to the benefits from reducing output losses associated with reduced frequency of banking crises, higher capital and liquidity requirements may also reduce the amplitude of normal business cycles. When considering a possibility of introducing a counter-cyclical capital buffer, which causes the capital requirement to increase in step with the credit-to-GDP ratio<sup>111</sup>, LEI analysis showed that the volatility of output would be reduced substantially, with the standard deviation declining by almost one fifth with respect to a baseline in which no countercyclical capital rules are implemented.

Another model developed jointly by the Commission services and academics<sup>112</sup> looked at the long term macro-economic impact of Basel III in seven MS. Regarding the effects on the probability of a systemic banking crisis, the research finds that its reduction depends on how much banks will recapitalize under Basel III. Results show that when banks recapitalize to 10.5%<sup>113</sup> level, the probability of a systemic banking crisis is reduced within the range of 29%

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<sup>107</sup> See <http://www.bis.org/publ/bcbs173.htm>

<sup>108</sup> Based on LEI analysis, the Commission services estimate that complying with the LCR requirement and the new capital requirements can be expected to reduce the probability of a systemic crisis by some 70%

<sup>109</sup> Modigliani, F., and M. Miller, *The cost of capital, corporation finance and the theory of investment*, The American Economic Review, 48, 1958

Miller M., *Do the M&M propositions apply to banks?*, Journal of Banking & Finance, 19, 1995

<sup>110</sup> When MM propositions are assumed to hold entirely (i.e., 100%), the scenario of regulatory change in terms of economic costs (measured as impact on the GDP) by 2020-2030 does not differ from the baseline scenario.

<sup>111</sup> Based on the simulations that increase the capital requirement in the neighbourhood of  $\pm 2$  percentage points around the steady state

<sup>112</sup> Marchesi M., S. Zedda, F. Campolongo, R. De Lisa, J. Cariboni, M. Petracco Giudici, *Basel III: a macro-economic cost-benefit analysis*, 2010, JRC EUR Report 61485, EUR 24603 EN (mimeo, forthcoming)

<sup>113</sup> Consisting of total capital requirement of 8% and conservation buffer of 2.5%

to 89%. The analysis found substantial net economic benefits of the new framework for two MS and a more neutral net economic effect in the remaining five MS analysed.

## 5.9. Impacts on SMEs

A recent study<sup>114</sup> launched by the Commission found that bank credit constitutes the most significant external source of SME financing. In this respect, the study found that there is a significant positive effect of the business cycle on bank loans to medium-sized firms, with the effect on small firms also significant but smaller. This effect might be explained by a number of regulatory and market failures, including the problem of asymmetric information.<sup>115</sup> When economic conditions become depressed and collateral values decline, information asymmetries with respect to the quality of clients' balance sheets make obtaining the bank credit difficult even for clients with profitable projects. When economic conditions improve and collateral values rise, the opposite situation tends to occur. In this regard, lending to SMEs is affected more than lending to large companies as SMEs are not subject to external ratings and extensive disclosure requirements.

Therefore, SMEs, to the extent that they are credit rationed by banks, are expected to be the primary beneficiaries of smoothened pro-cyclicality brought about by the enhanced countercyclical properties of the EU bank capital regulation, including capital buffers, improved adequacy and quality of regulatory capital and the leverage ratio. These changes will allow SMEs to engage in projects that are profitable and vital for the economic growth and prosperity not only during an expansionary leg of the cycle, but, more importantly, when the economic climate turns sour. As importantly, the proposals will benefit SMEs and their workforce further by smoothening the cyclicality of demand for the products and services that they generate, given that SMEs contribute some 60% of the total value added of the EU's non-financial business economy.<sup>116</sup>

According to the Commission macroeconomic model, compliance with the new capital framework is expected to reduce the stock of loans on average by 1.8% and increase loan rates on average by some 29 basis points by 2020-2030.<sup>117</sup> However, it needs to be stressed that costs of a comparable extent most likely would arise even in the absence of a regulatory reform, due to the market pressure and expectations with respect to enhanced post-crisis bank capital levels and liquidity management.

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<sup>114</sup> EIM, *Cyclicality of SME Finance*, March 2009

<sup>115</sup> The drivers behind such cyclicality are outlined in section 3.5

<sup>116</sup> Eurostat, *European business facts and figures*, 2009

<sup>117</sup> Specification of the Commission's QUEST model and more detailed presentation of modelling of the Basel III impacts on the EU economy are provided in Annex IX. It needs to be noted that modelling outputs in Annex IX are expressed as a change in a variable for 2.5 percentage point increase in Tier 1 capital ratio. For this reason, estimates have to be rescaled to assess the impact of a shortfall of CET1 capital of 2.9% of risk-weighted assets. In this calculation, it was assumed that capital shortfalls expressed as percentage points of Tier 1 and CET1 capital are comparable, given that CET1 is part of Tier 1. Hence, impact of the proposal on loan rates is derived as follows: 0.25 (average increase in loan rate by 2020-2030, 0% MM offset, expressed in percentage points) / 2.5 (increase in Tier 1 ratio, expressed in percentage points) x 2.9 (regulatory capital shortfall in percentage points expressed as CET1 capital over risk weighted assets) = 0.29 percentage points. Using the same rationale, impact of the proposal on the stock of loans is derived as follows: -1.51 (average decrease in stock of loans by 2020-2030, 0% MM offset, expressed in %) / 2.5 (increase in Tier 1 ratio, expressed in percentage points) x 2.9 (regulatory capital shortfall in percentage points expressed as CET1 capital over risk weighted assets) = -1.8%.

While the proposals are expected to lead to a higher cost of bank credit – which is compensated by social benefits - across the entire spectrum of bank customers, SMEs are expected to be impacted less than their large counterparts. Even though the start of Basel III transitional period has been set for 2013, most banks have embarked on a de facto transition to complying with the new rules following the publication of the framework in late 2010 and early evidence (Q4 2010 and Q1 2011) on the impact of costs related to bank capital and liquidity position on credit standards for loans and credit lines shows that more euro area banks tightened their credit standards for large enterprises than for SMEs.<sup>118</sup>

SMEs are expected to be affected less severely also to the extent that they transact more with smaller (or Group 2) banks<sup>119</sup>, whose capital and liquidity shortfalls have been estimated to be smaller than those of the largest EU (or Group 1) banks (see Table 15). In a similar vein, it is expected that the proposals, by accommodating certain specificities of the EU cooperative, mutual and similar banks (e.g., see policy options 1.3 and 3.5), will reduce the compliance costs for these institutions and in turn result in smaller indirect costs to their customers, including SMEs.

**Table 15:** Overview of impacts of various proposals by bank group

Policy area / proposed measure(s)	EU averages	
	Group 1 banks	Group 2 banks
Liquidity risk <sup>1</sup> :		
Liquidity Coverage Ratio, %	66.5	87.1
Net Stable Funding Ratio, %	91.1	93.9
Rules on capital definition, CET1 capital ratio, %	5.8	7.1
Rules on counterparty credit risk, % change of total RWAs	9.7	0.2
Leverage ratio, % <sup>1</sup>	2.5	3.5
Combined impact of CRD III and CRD IV on:		
Total RWAs, % change	24.5	4.1
CET1 capital ratio, %	4.9	7.1

**Notes:** <sup>1</sup> Based on Basel III definitions, in the EU will be subject to monitoring periods and follow-on re-calibration

**Source:** CEBS

The extent to which costs of Basel III implementation would be passed onto bank customers is also unclear given that exposure to the new measures, as shown by the EU QIS, is not uniform across banks while their market power on the lending market may be too weak.<sup>120</sup> In this regard, upon full application of CRD III and the CRD IV proposal some 25% of Group 1 banks and some 75% of Group 2 banks had CET1 capital ratio in excess of 7% already at the end of 2009 (see Chart 1). Furthermore, the distribution of CET1 ratios of Group 2 banks indicates that the smaller the bank the higher its CET1 ratio.<sup>121</sup> In competitive markets, such asymmetric shocks are typically much more difficult to pass onto customers, including SMEs.

<sup>118</sup> ECB, *The euro area bank lending survey*, April 2011

<sup>119</sup> Some research shows that smaller banks are more prone to lend to SMEs because they are better suited for the 'relationship lending', which is primarily based on information gathered by the loan officer through continuous, personalized and direct contacts with SMEs, their owners and managers, and the local community in which they operate. E.g., see Berger, A., L. Klapper, G. Udell, *The Ability of Banks to Lend to Informationally Opaque Small Businesses*, Journal of Banking Finance 25, 2001

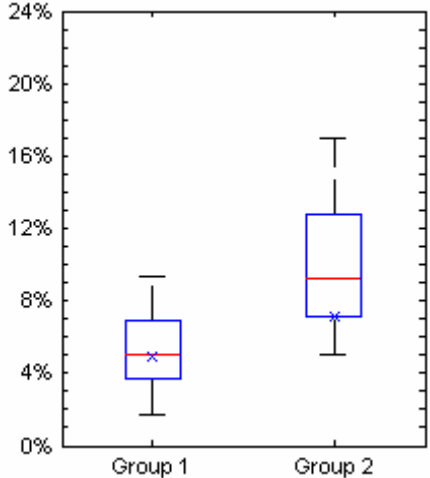
<sup>120</sup> ECB euro area bank lending surveys show that pressure from competition plays an important role in offsetting the impact of factors that drive banks to tighten their credit standards. See ECB, *The euro area bank lending survey*, April 2011

<sup>121</sup> As roughly three quarters of banks in the Group 2 sample had CET1 capital ratios in excess of the sample mean of 7.1%.

Moreover, monitoring periods foreseen for LCR, NSFR and the leverage ratio in combination with extended phase-in and inclusion of grandfathering provisions are expected to give banks necessary time to adjust their business models accordingly and provide lending to companies to support economic growth.

Also, the proposal includes a review clause on the preferential risk weight for exposures to SMEs under €1 million that is currently available for banks applying the standardised approach for credit risk. The preferential treatment is retained in the proposal and EBA is tasked with preparing an analysis for the Commission on whether the current level of the risk weight and the cap for its application are commensurate with the actual credit loss history of such exposures over a full economic cycle.

**Chart 1:** Distribution of CET1 capital ratios for Group 1 and Group 2 EU banks following the application of CRD III and the CRD IV proposal <sup>122</sup>



Source: CEBS, EU QIS

Most importantly, higher cost of credit in the long run will be offset by important *economic and social benefits accruing not only to SMEs but a wide range of stakeholders, including corporate and individual borrowers and creditors, governments, and the EU citizens in general*, due to the anticipated reduction in a frequency of banking crises, the extent of net economic benefits whereof was assessed in the preceding section.

**6. MONITORING AND EVALUATION**

It is expected that the proposed amendments will start entering into force in 2013. The amendments are tightly inter-linked with other provisions of the CRD, that are already in effect since 2007-2008 or that will come into effect following the implementation of CRD II and CRD III. The current and recent proposals underscore the importance of timely and appropriate changes of the rules in response to the market events. Therefore, it is likely that individual provisions of the CRD will continue to be formally evaluated on a piecemeal basis,

<sup>122</sup> In the plot, the mean is shown with the "x", the median is shown with the red line, 25<sup>th</sup> and 75<sup>th</sup> percentiles of the distribution are delineated by the blue box, while the black horizontal lines mark 10<sup>th</sup> and 90<sup>th</sup> percentiles of the distribution. In the EU QIS, sample means were calculated on the basis of the 'composite bank'; in this case, by dividing the sum of CET1 capital by the sum of risk-weighted assets. A median represents the value that separates the higher half of the sample from the lower half. An X<sup>th</sup> percentile distribution represents the value that separates X% of lower values from (100%-X%) higher values of the sample.

following the outcomes of various monitoring exercises both at the EU and the international level or a necessity to act as dictated by the markets.

Special arrangements will be put in place by the Basel Committee and EBA to ensure that necessary data for the monitoring of leverage ratio and the new liquidity measures is collected to allow for the calibration of these policy tools. Additionally, the Commission services will continue to participate in the working group of the Basel Committee and the joint task force established by ECB and EBA, that monitor the dynamics of bank capital positions, globally and in the EU, respectively.



## GLOSSARY

<b>Administrative burden</b>	Costs specifically linked to information provision that businesses would not collect and provide in the absence of a legal obligation
<b>Business-as-usual factor</b>	Expresses costs of providing the information that would be collected and processed by businesses even in the absence of the legislation as a percentage of total information provision-related costs
<b>Call option</b>	A contract between two parties, whereby the buyer of the option has the right, but not the obligation to buy an agreed quantity of a particular commodity or financial instrument from the seller of the option at a certain time (the expiration date) for a certain price.
<b>Central counterparty (CCP)</b>	An entity that interposes itself between counterparties to a contract traded within one or more financial markets, becoming the buyer to every seller and the seller to every buyer
<b>Consolidating supervisor</b>	The supervisor responsible for the supervision on a consolidated basis of a banking group. As a rule, this is the supervisor of the Member State where the parent bank of the group is based
<b>Contestable market</b>	Market served by a small number of firms, but which is characterized by competitive pricing because of the existence of potential short-term entrants
<b>Contingent capital</b>	Debt that converts into equity when there is a crisis or when certain triggers are met
<b>Covered bond</b>	A corporate bond with a recourse to a pool of assets that secures or "covers" the bond if the originator (usually a financial institution) becomes insolvent
<b>Counterparty credit risk (CCR)</b>	The risk that the counterparty to a transaction could default before the final settlement of the transaction's cash flows. An economic loss would occur if the transactions or portfolio of transactions with the counterparty has a positive economic value at the time of default. Unlike a firm's exposure to credit risk through a loan, where the exposure to credit risk is unilateral and only the lending institution faces the risk of loss, CCR creates a bilateral risk of loss: the market value of the transaction can be positive or negative to either counterparty to the transaction. The market value is uncertain and can vary over time with the movement of underlying market factors.
<b>Credit risk migration</b>	Risk that a portfolio's quality will deteriorate over time without allowing a re-pricing of its constituent loans or instruments to compensate for the increase in their default risk
<b>Credit risk</b>	Risk of losses in on and off-balance sheet positions resulting from the failure of a counterparty to perform according to a contractual arrangement
<b>Credit mitigation</b>	<b>risk</b> Technique used by a credit institution to reduce the credit risk associated with an exposure which the credit institution holds
<b>Run-off (deposit)</b>	<b>rate</b> Rate that reflects the amount of funding maturing over a given period of time and/or that are expected to be withdrawn
<b>Expected Positive Exposure (EPE)</b>	The weighted average over time of expected exposures where the weights are the proportion that an individual expected exposure represents of the entire time interval. When calculating the minimum capital requirement, the average is taken over the first year, or, if all the contracts in the netting set mature before one year, over the time period of the longest maturity contract in the netting set.

<b>Flexibility of payments (of capital instruments)</b>	A criterion that requires that the capital instrument must contain features permitting the noncumulative deferral or cancellation of payment of coupons or dividends in times of stress
<b>Funding liquidity</b>	Ability to meet their liabilities, unwind or settle their positions as they come due
<b>Going concern</b>	Concept that refers to a company's ability to continue functioning as a business entity. Hence, 'going concern capital' instruments are those that are effective in maintaining a bank as a going concern
<b>Haircut</b>	A percentage that is subtracted from the par value of the assets that are being used as collateral
<b>Herding behaviour</b>	A tendency of market participants to conform in their behaviour with that of their peers
<b>Hybrid capital instruments (hybrids)</b>	Securities that contain features of both equity and debt. The ultimate purpose of issuing such instruments is to cover economic capital needs and to provide support in the event of financial stress or potential losses. Hybrids help to diversify both the investor and capital base of a bank, and are often structured to qualify as regulatory capital on the one hand and achieve tax deductibility on the other.
<b>Hypothecation</b>	A practice where a borrower pledges collateral to secure a debt
<b>Innovative hybrids</b>	A specific type of hybrid instruments that include an incentive to redeem, like a step-up or other feature. Non-innovative instruments are hybrid instruments with no incentive to redeem. Innovative instruments were assigned a limit of 15% of 'original own funds' by the CRD II.
<b>Internal Based approach Ratings (IRB)</b>	Advanced approach by which a bank can use its own credit assessments to calculate its regulatory capital requirements for credit risk. Depending on the risk factors the bank is allowed to estimate, a distinction is made between a foundation IRB and an advanced IRB approach
<b>Leverage</b>	Degree to which a credit institution's exposures exceed its capital level
<b>Loss absorption (of capital instruments)</b>	A criterion that requires that the capital instrument must be available to absorb losses, both on a going concern basis and in liquidation, and to provide support for depositors' funds if necessary
<b>Loss given default (LGD)</b>	The loss, measured as a percentage of the exposure at default, which is likely to occur in case a borrower defaults; one of the required input parameters to derive the risk weight under the internal ratings-based approach
<b>Margin</b>	Margin is collateral that the holder of a financial instrument has to deposit to cover some or all of the credit risk of his counterparty. When the margin posted falls below the minimum margin requirement, a <i>margin call</i> issued.
<b>Market liquidity</b>	An asset's ability to be sold without causing a significant movement in the price and with minimum loss of value
<b>Market risk</b>	Market risk is the risk of losses due to price fluctuations of financial instruments in the trading book
<b>Minority interest</b>	The share capital of an entity that is fully consolidated in the banking group's regulatory accounts but is not owned by the group
<b>Mortgage backed security (MBS)</b>	Securitization where underlying exposures include mortgage loans, most commonly on residential property, in which case securitization is referred to as residential mortgage

	backed security (RMBS)
<b>National discretion</b>	Discretion refers to a situation in which competent authorities or Member State are given a choice as to whether to apply, or not to apply, a given provision
<b>National option</b>	An option refers to a situation in which competent authorities or Member States are given a choice on how to comply with a given provision, selecting from a range of alternatives
<b>Operational risk</b>	Risk of loss resulting from inadequate or failed internal processes, people and systems or from external events, and includes legal risk
<b>Original own funds</b>	The most reliable and liquid element of a bank's capital that comprises share capital, retained earnings and hybrid capital instruments which meet the criteria agreed at G10 level. Subject to technical differences, original own funds correspond to the Basel Accord terminology of Tier 1 capital
<b>Permanence (of capital instruments)</b>	A criterion that requires that the capital instrument must be permanently available so that there is no doubt that it can support depositors and other creditors in times of stress
<b>Pro-cyclicality</b>	Procyclicality of the financial system can be defined as the tendency of financial activity to amplify business fluctuations which may lead or contribute to financial instability
<b>Prudential filters and deductions</b>	Adjustments to the accounting figures, which reduce or eliminate unwanted effects of reporting for the calculation of regulatory capital
<b>Required stable funding factor</b>	A factor that approximates the amount of a particular asset that could not be monetised through sale or use as collateral in a secured borrowing during a liquidity event lasting one year. In the context of NSFR, such amounts are expected to be supported by stable funding
<b>Re-securitization</b>	Securitization where one or more of the underlying exposures meet the definition of a securitization
<b>Securitization</b>	Transaction or scheme, whereby the credit risk associated with an exposure or pool of exposures is tranching, with payments in such transaction or scheme being dependent upon the performance of the underlying exposure or pool of exposures. The subordination of tranches determines the distribution of losses during the ongoing life of such transaction or scheme
<b>Repo (repurchase agreement)</b>	In a repo contract, the borrower agrees to sell a security to the lender and to buy the same security from the same lender at a fixed price at some later date
<b>Securities financing activities</b>	While the rationale behind a repo contract is borrowing or lending of cash, in securities financing, the purpose is to temporarily obtain a security for other purposes such as covering short positions
<b>Single rule book</b>	In the context of CRD IV, the term pertains to the removal of national options and discretions together with maximum harmonisation of legal provisions
<b>Standardized approach</b>	Method by which a bank can use external ratings (if available) by external credit assessment institutions to calculate its regulatory capital requirements for credit risk
<b>Sub-prime mortgages</b>	Mortgages that are usually granted to borrowers with lower credit ratings
<b>Synthetically dated</b>	Hybrids that become effectively dated as a result of exercising of the embedded call

<b>hybrids</b>	option
<b>Tier 1 capital</b>	See <i>Original own funds</i>
<b>Tier 2 capital</b>	Regulatory capital that is used to absorb losses on a gone concern basis, i.e., when a company is in liquidation
<b>Trading book</b>	Comprises those instruments held for short-term resale or to hedge other financial instruments that are held for short-term resale
<b>Wrong-way specific generalised</b>	<p><b>risk, and</b> Specific wrong-way risk arises when the exposure to a particular counterparty is positively correlated with the probability of the default of the counterparty, i.e., when the credit exposure and default risk increase together</p> <p>Generalised wrong-way risk relates to a situation where the probability of default of counterparties is adversely correlated with general market risk factors</p>

## ANNEX I: EXTENDED IMPACT ANALYSIS

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## 1. INTRODUCTION

The extent of the financial crisis has exposed unacceptable risks pertaining to the current regulation of financial institutions and markets. These risks proved substantial and systemic in times of serious turbulence. According to the IMF<sup>123</sup> estimates, between 2007 and 2010 crisis-related writedowns and loan provisions on bank assets originated globally reach \$2.3 trillion, roughly half of which (or \$1.3 trillion, equivalent to 8% of the EU GDP) is now attributable to European banks. The crisis which started in the financial sector plunged the EU economy in a severe recession, with the EU GDP contracting by some 5.7% or €0.7 trillion in 2009.

In order to restore confidence and stability in the banking sector and ensure that credit continues to flow to the real economy, both the EU and its Member States (MS) adopted a broad range of unprecedented measures with the taxpayer ultimately footing the bill of global rescue and recapitalization initiatives. In this context, between October 2008 and October 2010 the European Commission (Commission) has approved €4.6 trillion (equivalent to 39% of the EU GDP) of state aid measures<sup>124</sup> to financial institutions of which more than €2 trillion were effectively used in 2008 and 2009. Combined with fiscal measures aimed at pulling EU economies out of the recession, supportive measures to the banking industry contributed to higher budget deficits and pushed sovereign indebtedness levels up. This intensified markets' perception of rising sovereign risks, imposing second-round costs on the EU Member States' fiscal stance and ultimately constraining economic policy options in the medium term.

The unprecedented level of fiscal support to banks needs to be matched with a robust and internationally coordinated reform addressing the regulatory shortcomings exposed during the crisis. In recognition of these regulatory weaknesses, the Commission already proposed certain amendments to bank regulation, revising capital requirements for securitization positions and provisions on home-host supervisory issues and crisis arrangements in October 2008<sup>125</sup> (CRD II) as well as amendments to capital requirements for the trading book and for re-securitizations, and to the supervisory review of remuneration policies in July 2009<sup>126</sup> (CRD III).

However, to prevent recent and present problems from occurring in the future and ensure that risks linked to the broader issues of financial instability and pro-cyclicality are more effectively contained, additional internationally coordinated changes to the EU capital and liquidity regulation of banks are needed. Such changes would provide for restoring businesses' and citizens' trust in financial institutions as reliable and resilient intermediaries

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<sup>123</sup> IMF, *Meeting New Challenges to Stability and Building a Safer System* (Global Financial Stability Report), April 2010

<sup>124</sup> Measures comprise €3.5 trillion of guarantees, €156 billion of other liquidity and bank funding support, €546 billion of approved state recapitalisations and €402 billion of asset relief

<sup>125</sup> Consisting of a 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, Commission Directive 2009/27/EC of 7 April 2009 amending certain Annexes to Directive 2006/49/EC, and Commission Directive 2009/83/EC of 27 July 2009 amending certain Annexes to Directive 2006/48/EC

<sup>126</sup> Directive 2010/76/EU of the European Parliament and of the Council of 24 November 2010 amending Directives 2006/48/EC and 2006/49/EC as regards capital requirements for the trading book and for re-securitizations, and the supervisory review of remuneration policies

for translating their deposits into productive investment that is key for the long-term health of the EU economy.

**2. PROCEDURAL ISSUES AND STAKEHOLDER CONSULTATION**

**2.1. Stakeholder consultation**

Throughout the project the Commission services have closely followed and participated in the work of international forums, particularly the Basel Committee<sup>127</sup> and its various working groups in charge of developing policy proposals in individual areas of the proposal.

The European Banking Committee (EBC) and the Committee of European Banking Supervisors (CEBS) – the committees of the Lamfalussy process - have been extensively involved and consulted throughout the project as well and their views have contributed to the preparation of this impact assessment and the proposal that it accompanies. Consultative work with other stakeholder groups has been conducted in part through these committees.

*2.1.1. CEBS*

2.1.1.1. EU Quantitative Impact Study

In November 2009, the Commission invited CEBS to conduct a comprehensive quantitative impact study (QIS) on the impact of the legislative proposal that this impact assessment accompanies on the EU banking industry. 246 banks from 21 member countries of CEBS participated in the study, including 50 Group 1<sup>128</sup> banks and 196 Group 2 banks (see Table 1). The analyses were performed based on data at consolidated group level as of 31 December 2009, i.e., subsidiaries of European banks were excluded to avoid double counting. The total capital of participating banks amounted to €1,464 billion which represents approximately 70% of the consolidated European banking sector. In total, all 50 EU Group 1 banks participated in the QIS. The coverage of Group 2 banks was lower: 4%, or 196 of more than 4,500 Group 2 banks participated, representing 38% of the risk weighted assets (RWAs) of Group 2 banks of the participating countries. Importantly for the interpretation of the data, almost all participating countries indicated that the submitted Group 2 data is representative of their Group 2 bank population.

**Table 1: Participation of Group 1 and Group 2 banks in the EU QIS**

	AT	BE	DK	FI	FR	DE	EL	HU	IE	IT	LU	NL	NO	PL	PT	SI	ES	SE	UK	EU
<b>Bank count</b>	18	4	5	14	11	78	4	3	9	22	1	22	8	5	7	2	7	6	13	<b>246</b>

**Note:** Due to confidentiality concerns data for CY and CZ have been omitted while the number of their banks reflected in the EU total.

**Source:** CEBS

<sup>127</sup> The Basel Committee on Banking Supervision consists of central bank and supervisory authority representatives from twenty seven countries. Nine EU Member States are represented – Belgium, France, Germany, Italy, Luxembourg, the Netherlands, Spain, Sweden, and the UK. The other countries represented are Canada, Japan, Switzerland, the US and, from 2009, Argentina, Australia, Brazil, China, Hong Kong, India, Indonesia, Korea, Mexico, Russia, Saudi Arabia, Singapore, South Africa and Turkey. The European Commission, along with the European Central Bank, participates as an observer in the Committee and in its working groups.

<sup>128</sup> Group 1 banks are those that have Tier 1 capital in excess of €3 billion, are well diversified, and are internationally active. All other banks are considered Group 2 banks



According to ECB<sup>129</sup>, in 2009, total assets of credit institutions in the EU27 reached €42,144 billion (for more on the economic and financial importance of the banking sector in Europe, see Annex II). A significant share thereof is owned by Group 1 banks. Given differences as regards their size, nature of activities, risk profile and risk management approaches, results from the EU QIS throughout this impact assessment report are used separately for Group 1 and Group 2 banks, and cumulative impact on the EU industry, where necessary, is estimated by applying extrapolation. Please note that EU-level averages<sup>130</sup> and totals, when quoted in the impact assessment, may include NO banks. Importantly, MS-level averages and totals have been anonymized randomly on request of the MS participating in the QIS in order to preserve confidentiality of results, yet still presented in the report to illustrate distributional effects of the new rules.

#### 2.1.1.2. Work on national options and discretions

In the area of national options and discretions, CEBS played a key role as a source of technical expertise. The committee's work was carried out in response to the Commission's calls for advice of March 2007. CEBS' technical advice was received in October 2008<sup>131</sup>, following extensive public consultation of the draft advice.

The industry was consulted by CEBS as part of the preparation of its technical advice, which included an ad hoc joint CEBS-industry expert group.<sup>132</sup> The position of the industry on all national options and discretions is available on CEBS web site.<sup>133</sup> Twenty responses were received to the public consultation. In the view of most respondents of the industry, in line with the objective of a single market, all national options and discretions should be removed. However, certain respondents stressed that there are also some cases where the existence of local market conditions or legislative specificities justify the adoption of different approaches so that certain options and national discretions should be maintained.

#### 2.1.2. CRD Working Group

In the area of national options and discretions, the Commission services held six meetings of the CRD Working Group (CRDWG), whose members are nominated by the EBC, in December 2008, March and April 2009, October 2010, and February and March 2011. The group worked on preparing a single rule book in the EU, considering the technical advice of CEBS and the potential removal of the remaining options which was not suggested by CEBS. For a detailed list of provisions analysed by the CRDWG, please refer to Annex II.

Other parts of the proposal were discussed by the CRDWG in June and October 2010, and February and March 2011. It shall be noted that working sub-groups of the CRDWG in the areas of liquidity, capital definition, leverage ratio, counterparty credit risk and capital buffers have also been established in 2010 to conduct work at even more technical level and to develop legislative drafts in the respective areas.

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<sup>129</sup> ECB, *EU Banking Structures*, September 2010

<sup>130</sup> Unless noted otherwise, averages were calculated by creating a composite bank at a country and a total sample level which means that all country and total sample averages effectively are weighted averages

<sup>131</sup> See <http://www.c-eps.org/getdoc/354c6e4c-f22a-46a0-9025-0c55f460a5a6/2008-17-10-Final-Advice-on-options-and-national-di.aspx>

<sup>132</sup> See <http://www.c-eps.org/getdoc/1d48fde8-6672-4df5-a526-b406472c6af2/National-Discretions.aspx>

<sup>133</sup> See <http://www.c-eps.org/getdoc/5d174851-eb98-4a34-a542-6ab9b6f89eaa/CP18.aspx>

### 2.1.3. *Other public consultations*

The preparatory work related to the CRD IV legislative proposal started already in summer of 2009 when the Commission services conducted a first public consultation<sup>134</sup> on the latest wave of possible amendments to the CRD. This was followed by another public consultation that ran from February to April of 2010<sup>135</sup> that included a second round of questions on the 'single rule book' as well as consulting on a list of potential policy measures pertaining to liquidity and counterparty credit risk management, definition of capital, leverage ratio, conservation and countercyclical capital buffers and appropriate treatment of systemically important financial institutions. A third public consultation elaborating on the possible design of the countercyclical capital buffer ran from October to November 2010.<sup>136</sup> A fourth public consultation on capital requirements for certain types of counterparty credit risk was conducted in February – March 2011.<sup>137</sup>

Responses to these consultations constitute an important source of data and key stakeholder views as regards the impacts and effectiveness of potential policy measures outlined in the consultation. Feedback to the public consultations included calls for assessing implications of certain important aspects of the proposal. These aspects include implementation dates and phase-in of new rules, grandfathering of existing provisions and cumulative impact of individual measures of the package on the industry, the economy and the financial stability.

Also, on 26 April 2010 the Commission services conducted an open public hearing on the CRD IV proposal. The event was open to all stakeholders who have responded to the consultation of February 2010 and actively attended by all the stakeholder groups, including industry, regulators, supervisors, non-financial companies, international organisations.

### 2.1.4. *Consultations with the industry*

In addition, the Commission services conducted separate extensive consultations with the industry, including the Group of Experts in Banking Issues (GEBI), various EU banking industry associations and individual banks.

A number of policy measures with a potentially material impact on the industry, such as treatment of deferred tax assets and of minority interests, and design of new liquidity requirements, as well as industry's assessment of costs and benefits of the entire package were discussed by the GEBI members at the Group's meetings in April and October 2010. In August – September 2010, the GEBI was invited to provide input into assessment of administrative burdens related to the CRD IV (see Annex VIII).

## **2.2. Consultation with other services of the Commission**

### 2.2.1. *Inter-service Steering Group*

An Inter-Service Steering Group (ISSG) was set up to follow progress and feed in views from other services of the Commission, including Directorates-General for Enterprise and Industry, Economic and Financial Affairs, Taxation and Customs Union, Health and Consumers, Competition, Legal Service, and Secretariat General. Experts from the Directorate-General for

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<sup>134</sup> See [http://ec.europa.eu/internal\\_market/consultations/2009/capital\\_requirements\\_directive\\_en.htm](http://ec.europa.eu/internal_market/consultations/2009/capital_requirements_directive_en.htm)

<sup>135</sup> See [http://ec.europa.eu/internal\\_market/consultations/2010/crd4\\_en.htm](http://ec.europa.eu/internal_market/consultations/2010/crd4_en.htm)

<sup>136</sup> See [http://ec.europa.eu/internal\\_market/consultations/2010/capitalbuffer\\_en.htm](http://ec.europa.eu/internal_market/consultations/2010/capitalbuffer_en.htm)

<sup>137</sup> See [http://ec.europa.eu/internal\\_market/consultations/2011/credit\\_risk\\_en.htm](http://ec.europa.eu/internal_market/consultations/2011/credit_risk_en.htm)

Economic and Financial Affairs contributed to this impact assessment by conducting analysis of implications of the proposal on the macro-financial stability and of macro-economic impacts during a transitional period (see Annex IX). The ISSG met four times in June - September 2009 and five times in January – October 2010.

**3. PROBLEM DEFINITION**

**3.1. Background**

Capital requirements rules stipulate the minimum amounts of own financial resources that banks must have in order to cover the risks to which they are exposed. The aim is to ensure the financial soundness of these institutions and, in particular, to ensure that they can weather difficult periods and that their depositors are protected.

In the EU, harmonised capital requirements are a key component in the single market in financial services: mutual recognition of requirements is the basis for banks' and investment firms' 'single market passport', meaning that they can operate throughout the EU on the basis of approval by the appropriate regulatory authority in their own MS. The current EU bank capital framework is represented by the Capital Requirements Directive (CRD) comprising Directives 2006/48/EC and 2006/49/EC and reflecting the proposals of the Basel Committee for the Basel II Framework<sup>138</sup> (Basel II) and Trading Book Review<sup>139</sup>. It covers both credit institutions and investment firms.

With the adoption of the CRD, capital requirements became more comprehensive<sup>140</sup> and risk sensitive<sup>141</sup>. The CRD also enhanced the role of the 'consolidating supervisor' by assigning it responsibilities and powers in coordinating the supervision of cross-border groups and laid out a three-pillar structure (see Box 1) representing additional marked differences from a predecessor legislation.

**Box 1: Three pillar structure of the CRD:**

Pillar 1 covers the minimum capital required for credit risk, operational risk and market risk; the minimum capital requirements became much more risk-sensitive and comprehensive than in the past, facilitating improved coverage of the real risks run by the institution.

Pillar 2 covers the review and evaluation of the credit institution's fulfilment of the requirements of the CRD by the supervisor and any resulting action; new rules include requirements for an 'internal capital assessment' by financial institutions, whereby they would need to assess their capital needs considering all the risks they face. These rules also require supervisors to evaluate institutions' overall risk profile to ensure that they hold adequate capital.

Pillar 3 covers the disclosure by institutions and facilitates a better understanding of the soundness and stability of financial institutions.

<sup>138</sup> See <http://www.bis.org/publ/bcbs107.htm>

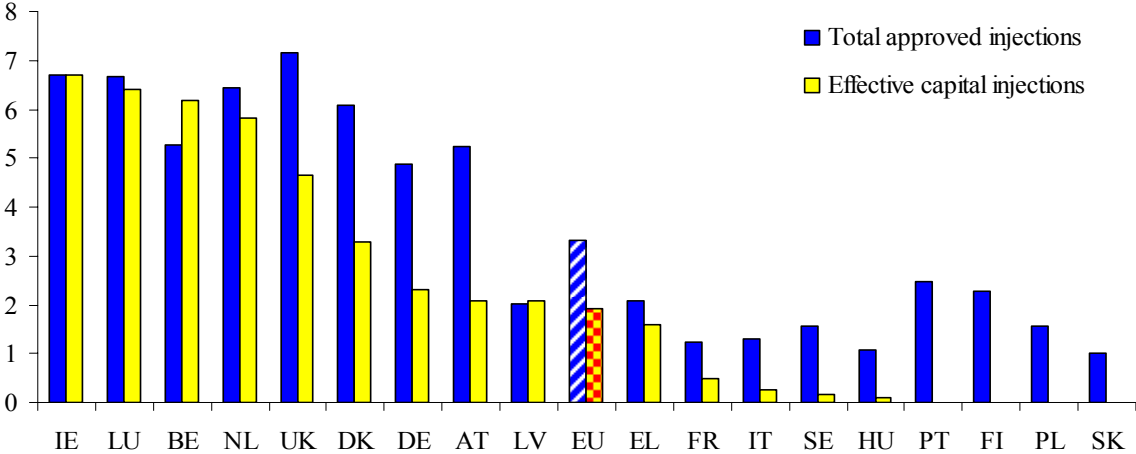
<sup>139</sup> See <http://www.bis.org/publ/bcbs116.htm>

<sup>140</sup> Rules were expanded to cover 'operational' risk, e.g., the risk of systems breaking down

<sup>141</sup> Rules include a possibility for institutions to adopt approaches to determining regulatory capital that are appropriate to their situation and to the sophistication of their risk management. For instance, the Internal Ratings Based approach enabled institutions to determine capital requirements for credit risk of their portfolios, by using their own 'risk inputs' such as probability of default and loss given default. The calculation of these risk inputs was made subject to a strict set of operational requirements to ensure that they are robust and reliable.

The financial crisis has unveiled a number of shortcomings of Basel II and necessitated unprecedented levels of public support in order to restore confidence and stability (see Chart 1). This prompted a broad EU and international effort to identify the reasons behind the problems and to develop effective policies to tackle them head-on.

**Chart 1:** Public capital injections in the banking sector, in % of 2009 GDP



Source: European Commission

As part of its efforts to deal with the financial crisis, already in November 2008, the Commission mandated a High Level Group (HLG) chaired by Mr. Jacques de Larosière to propose recommendations for reforming the European financial supervision and regulation. The thirty one recommendations<sup>142</sup> of the HLG represented a comprehensive set of concrete possibilities for regulatory<sup>143</sup>, supervisory and global repair action and were elaborated in the Commission's Communication<sup>144</sup> for the spring European Council of 4 March 2009.

Most of the proposals that this impact assessment accompanies and the amendments to the CRD (CRD III) already adopted by the Commission in July 2009 are listed in the detailed action plan included in the Communication. Such 'phased' approach to revising the current rules reflects the balance between, on the one hand, a necessity to swiftly tackle the problems that transpired during the crisis and restore the financial stability, and, on the other hand, given the level of integration within the global financial system, reaching an international consensus on measures that would be effective in containing the problems identified (see Table 2 for more details on the three waves of the CRD amendments). With respect to the latter, the G-20 Declaration of 2 April 2009 on Strengthening of the Financial System<sup>145</sup> conveyed the commitment of the global leaders<sup>146</sup> to address the crisis with internationally consistent efforts that are aimed at strengthening transparency, accountability and regulation by, among others, improving the quantity and quality of capital in the banking system once the economic recovery is assured, introducing a supplementary non-risk based measure to contain the build-up of leverage in the banking system, developing a framework for stronger

<sup>142</sup> See [http://ec.europa.eu/internal\\_market/finances/docs/de\\_larosiere\\_report\\_en.pdf](http://ec.europa.eu/internal_market/finances/docs/de_larosiere_report_en.pdf)

<sup>143</sup> Recommendations called for the Basel Committee to urgently amend rules with a view to gradually increase capital requirements, reduce their pro-cyclical impacts and tighten norms for liquidity management. They also called for EU to adopt and confirm with the Basel Committee a common definition of own funds clarifying whether and to what extent hybrid capital instruments should be counted as Tier 1 capital.

<sup>144</sup> See [http://ec.europa.eu/commission\\_barroso/president/pdf/press\\_20090304\\_en.pdf](http://ec.europa.eu/commission_barroso/president/pdf/press_20090304_en.pdf)

<sup>145</sup> See [http://www.g20.org/Documents/Fin\\_Deps\\_Fin\\_Reg\\_Annex\\_020409\\_-\\_1615\\_final.pdf](http://www.g20.org/Documents/Fin_Deps_Fin_Reg_Annex_020409_-_1615_final.pdf)

<sup>146</sup> European leaders expressed their support for these measures at the European Council of 19-20 March 2009

liquidity buffers at financial institutions and charging FSB<sup>147</sup>, the Basel Committee and CGFS<sup>148</sup>, while working with accounting rule setters, to implement the recommendations<sup>149</sup> of FSB to mitigate the pro-cyclicality.

In response to the mandate given by the G-20, in September 2009 the Group of Central Bank Governors and Heads of Supervision (GHOS), the oversight body of the Basel Committee, agreed<sup>150</sup> on a number of measures to strengthen the regulation of the banking sector. These measures were endorsed by the FSB and the G-20 leaders at their Pittsburgh Summit of 24-25 September 2009<sup>151</sup> and were fleshed out in detail and made available for stakeholder comments in two consultation documents in December 2009<sup>152</sup>. In February – April 2010 the Commission conducted a parallel public consultation within the EU, going beyond the set of measures covered by the documents of the Basel Committee.

In December 2010, the Basel Committee issued detailed rules of new global regulatory standards on bank capital adequacy and liquidity that collectively are referred to as Basel III.<sup>153</sup> The proposal that this impact assessment accompanies directly relates to the standards covered by Basel III.

The following sub-sections present analysis of main problems and drivers underlying them for the CRD areas under review in this proposal. Problem drivers are identified in *italics* and a 'problem tree' is included at the end of the section.

**Table 2:** Three 'waves' of the CRD amendments by the Commission 2008 - 2011

Timing of proposals	Major CRD provision areas changed	Justification / key objectives
October 2008	Revision of large exposures regime	Area 'left open' at the time of the CRD adoption in 2006
	Establishing a more harmonized treatment of hybrid capital instruments within original own funds	Area 'left open' at the time of the CRD adoption in 2006
	Revision of home-host supervisory and crisis arrangements	Change in response to the financial crisis, to provide for attainment of long-term policy objectives of bank capital regulation
	Derogations for bank networks from certain prudential requirements	Area 'left open' at the time of the CRD adoption in 2006
	Revision of treatment of life insurance as eligible collateral	Inconsistency identified in the CRD transposition process

<sup>147</sup> The Financial Stability Board was convened in April 1999 to promote international financial stability through information exchange and international co-operation in financial supervision and surveillance. It brings together national authorities responsible for financial stability in significant international financial centres, international financial institutions, sector-specific international groupings of regulators and supervisors, and committees of central bank experts. FSB seeks to co-ordinate the efforts of these various bodies in order to promote international financial stability, improve the functioning of markets, and reduce systemic risk.

<sup>148</sup> The Committee on the Global Financial System (CGFS), monitors developments in global financial markets for the central bank Governors of the G10 countries

<sup>149</sup> The report of the FSB on Addressing Procyclicality in the Financial System ([http://www.financialstabilityboard.org/publications/r\\_0904a.pdf](http://www.financialstabilityboard.org/publications/r_0904a.pdf)) set out fifteen recommendations to mitigate mechanisms that amplify procyclicality by covering three areas: bank capital framework, bank loan loss provisions as well as leverage and valuation issues. The proposal that this impact assessment accompanies directly relates to a number of recommendations issued by the FSB.

<sup>150</sup> See <http://www.bis.org/press/p090907.htm>

<sup>151</sup> See [http://www.g20.org/Documents/pittsburgh\\_summit\\_leaders\\_statement\\_250909.pdf](http://www.g20.org/Documents/pittsburgh_summit_leaders_statement_250909.pdf)

<sup>152</sup> See <http://www.bis.org/publ/bcbs164.htm>, <http://www.bis.org/publ/bcbs165.htm>

<sup>153</sup> See <http://www.bis.org/publ/bcbs189.htm>, <http://www.bis.org/publ/bcbs188.htm>

Timing of proposals	Major CRD provision areas changed	Justification / key objectives
	Revision of capital requirements for Collective Investment Undertakings under the IRB approach	Inconsistency identified in the CRD transposition process
	Revision of capital and risk management requirements for securitization positions	Change in response to the financial crisis, to provide for attainment of long-term policy objectives of bank capital regulation
July 2009	Revision of capital requirements for the trading book	Changes in response to the financial crisis, to provide for attainment of long-term policy objectives of bank capital regulation, including enhancing stability and limiting procyclicality of the financial system
	Revision of capital requirements for re-securitization positions in the banking book	
	Enhancing disclosure requirements of securitization risks	
	Enhancing supervisory review of remuneration policies	
June 2011	Enhancing and harmonizing requirements for liquidity risk management	Change in response to the financial crisis, to provide for attainment of long-term policy objectives of bank capital regulation, including enhancing stability and limiting procyclicality of the financial system
	Revision and harmonization of definition of capital rules, regulatory adjustments	
	Revision of capital requirements for the counterparty credit risk	
	Introduction of a supplementary non-risk based measure to contain leverage	
	Introduction of capital buffers	
	Single rule book in banking	Making supervisory rules more consistent by reducing number of national options and discretions to provide for reduction of compliance burden and enhanced level playing field

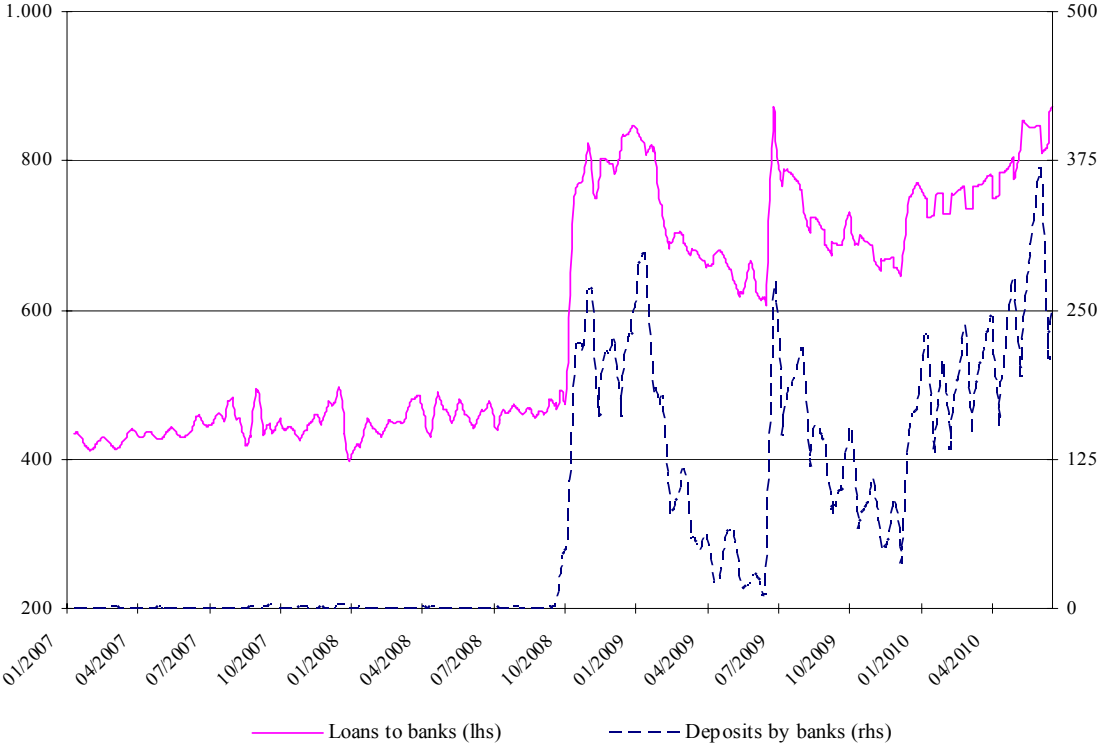
### 3.2. Management of liquidity risk

The global financial crisis that started in summer of 2007 has evidenced the crucial role of interacting market and funding liquidity for the banking sector. It brought to light *shortcomings of current liquidity risk management, including stress testing exercises of institutions and asset and liability maturity mismatches*, and evidenced the need to review banking supervisors' approach to liquidity risk management. Structured products and interbank market operators suffered liquidity constraint, eventually leading to drying out of liquidity, resulting in choking balance sheets of banks. The inability to mobilize resources led to a severe liquidity constraint on some banks, pressing central banks in providing emergency liquidity support. The propagation of the crisis from certain structured products to mature financial markets through the interplay of balance sheets and exposure to credit risk highlighted the connection between market liquidity risk and funding liquidity risk, and the vulnerability of banks' balance sheet to liquidity risks.

Funding liquidity risk arises because inflows and outflows of funds at banks are not synchronised. A bank is deemed to be liquid as long as at each point in time outflows of liquidity are smaller or equal to the sum of inflows and the bank's stock of liquidity. Therefore, it should manage its liquidity risk with a view to ensure that the above constraint is never breached. However, the existing liquidity risk management approaches, including stress tests, and supervisory regimes were shown to be inadequate in fully grasping risks inherent to the underlying market practices such as (i) originate-to distribute securitization; (ii) reliance on wholesale funding with short term maturity instruments; (iii) proliferation of complex financial instruments with underestimated underlying risks. Also, assumptions pertaining to (iv) asset market liquidity, as well as (v) interaction between market liquidity and funding liquidity turned out to had been erroneous while (vi) behavioural aspects of financial institutions played an immense role in the course of the crisis. These factors contributed to a demise of several financial institutions and strongly undermined health of many others, threatening the financial stability and necessitating unprecedented levels of public sector (see

Chart 1) and central bank liquidity support (for the extent of the ECB liquidity support since 2007 see Chart 2). They are analysed in more detailed below.

**Chart 2:** ECB loans to the euro area credit institutions and deposits of euro area credit institutions with the ECB, 10-day moving average in € billion, January 2007 – June 2010



Sources: ECB, European Commission services' calculation

i. Securitization was used widely by financial institutions to expand funding sources and create additional balance sheet capacity. As the process of pooling assets, selling them to a special purpose vehicle, obtaining credit ratings and issuing securities takes time, market stress during this timeframe resulted in banks having to warehouse and, therefore, fund assets for longer than planned: according to the ESF, in 2008, 95% of all European securitization issuance was retained by banks (and used for repo with the ECB and the Bank of England) with primary issuance market effectively closed due to significantly diminished investor appetite for these instruments.<sup>154</sup>

ii. In the run-up to the crisis, many financial institutions have increasingly turned to the capital markets for funding their own operations as well as those of related entities with instruments of shorter maturity and became more reliant on wholesale funding sources such as commercial paper, repurchase agreements ('repos'), and interbank markets. Events during the crisis illustrated clearly that during times of market stress investors exhibit heightened risk aversion by demanding higher compensation for risk, requiring banks to roll over liabilities at considerably shorter maturities or refusing to extend financing altogether. Some forms of securitization such as off-balance sheet structured investment vehicles and conduits raised funds by selling asset backed commercial paper (ABCP) of average maturity of 90 days while the assets backing it typically comprised pools of loans, mainly mortgages. To ensure funding liquidity of such off-balance sheet vehicles, 'sponsoring' banks

<sup>154</sup> European Securitisation Forum, ESF Securitization Data Report, Q4 2008

committed to provide a credit line, the so-called 'liquidity backstop', effectively exposing themselves to liquidity risk pertaining to maturity mismatch of these entities. When investors, following the spike in sub-prime mortgage defaults became concerned about the value of structured products and lost confidence in the reliability of their ratings, their appetite for ABCP evaporated and banks sponsoring these vehicles were called upon to provide liquidity. As banks had to fulfil such contingent asset funding commitments, some of them ran into funding difficulties. In July 2007, IKB, a German bank was unable to service a liquidity guarantee of €8.1 billion it had provided to its Rhineland Funding conduit and the state-owned development bank that owned 38% of the IKB took over the liquidity facility committed to Rhineland Funding.<sup>155</sup> Other European banks had also to provide liquidity to their ABCP conduits to varying degrees.<sup>156</sup> Additional liquidity needs were also created when institutions felt compelled to provide support to affiliated investment vehicles even when there was no contractual obligation to do so, since they perceived that a failure to do so would impact their reputation adversely. For instance, in June 2007 Bear Stearns, a large US investment bank, in order to protect its reputation, injected \$3.2 billion into two of its hedge funds that had trouble meeting margin calls due to losses on asset backed securities (the two funds filed for bankruptcy protection shortly thereafter).

In addition to the commercial paper, financial institutions extensively used other wholesale funding sources such as repo and interbank markets. Repos allow institutions to obtain typically short-term funding, under the condition of periodic margin calls, mobilizing resources entailing opportunity costs.<sup>157</sup> Recent changes in risk management practices made such transactions more sensitive to liquidity risk: margin calls were made on a daily or intraday basis compared to weekly or monthly ten years ago and re-use of collateral had notably increased. While the use of collateral was aimed at mitigating counterparty credit risk, it gave rise to funding liquidity risk when counterparties had to provide additional collateral on short notice due to changes in market price and in response to increased haircuts, reflecting deteriorated market liquidity, asset quality and their own counterparty risk. Moreover, financial institutions and investment banks in particular increasingly relied on overnight repos, effectively requiring them to roll over a significant part of their funding on a daily basis. Bear Sterns failed in March 2008 once it found itself unable to secure funding on the repo market and was subsequently taken over JPMorgan Chase, in a deal that effectively wiped out its shareholders value. Lehman Brothers, another investment bank, filed for bankruptcy in September 2008, in part because of difficulties in addressing similar funding liquidity-related problems.

iii. The use of derivative instruments of ever increasing complexity created additional challenges for management of liquidity risk. Predicting their cash flows and correlations with other financial assets in times of stress proved to be difficult. AIG, largest insurer in the world, suffered from a liquidity crisis when its credit ratings were downgraded below "AA" levels in September 2008.<sup>158</sup> As AIG was active in underwriting derivatives insuring mortgage backed securities, the credit rating downgrade imposed that it posts additional

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<sup>155</sup> IKB also received a rescue package of some €3.5 billion from German government and private and state sector banks to cover potential losses from structured investments it had made

<sup>156</sup> E.g., HBOS provided liquidity support to its Grampian programme that had some \$36 billion commercial paper outstanding

<sup>157</sup> Formally, the collateral is sold to the lender, subject to an agreement to repurchase it at an agreed price and moment in time

<sup>158</sup> This risk materialised once on September 15, 2008 S&P and Moody's downgraded AIG long-term credit ratings by three and two notches, respectively, among other justifications citing 'reduced flexibility in meeting additional collateral needs'.



collateral. Fearing contagion to the rest of the market through balance sheet interplay, the US government bailed AIG out with support reaching some \$180 billion by end-2009.

iv. Assumptions pertaining to asset market liquidity were another source behind the recent funding shock. Financial institutions can satisfy their liquidity needs by selling assets or hypothecating them. If asset markets are liquid, assets can be sold at their fair value or hypothecated at low haircuts. However, because of their nature, banks' assets have to a large extent a potential to become illiquid, in particular in stressed conditions, when they can only be sold at a discount or hypothecated at much higher haircuts. This is in particular true for complex instruments that were not actively traded among a large number of participants which made assessing their price and secondary market liquidity challenging as more and more parties withdrew from the relevant markets. Financial institutions had made overly optimistic assumptions about the asset market liquidity of certain structured products, such as asset backed securities and loan books. They had often assumed continuous high liquidity of these markets, and indeed some had treated loan securitisation, asset backed securities held on balance sheet and ABCP programs as very resilient sources of liquidity in the event of funding difficulties, not anticipating that the liquidity of such markets may disappear.

v. Many financial institutions also underestimated the extent of a vicious feedback loop between market liquidity and funding liquidity. Rising arrears on US sub-prime mortgages that were extensively packaged in residential mortgage-backed securities caused investors to lose faith in the ratings of structured securities and led to heightened concerns about accuracy of their valuation. The loss of investor confidence in a wide range of structured securities was transmitted through a fall in their price as market liquidity for such securities evaporated. This led to an increase in funding risk as margins and haircuts related to these securities increased, which, in turn, forced additional deleveraging and selling, effectively creating a vicious circle between deteriorating market liquidity and disappearing funding liquidity. Also, as long as the institution's solvency is unquestioned, it will find it relatively easy to obtain credit on a secured or even unsecured basis. However, as many banks held large positions in difficult-to-value and potentially impaired securities,<sup>159</sup> concerns about their solvency arose that aggravated further banks funding difficulties, as discussed below.

vi. The flow of funds between banks was determined not only by contractual relationships, which have been formed prior to the crisis, but also by endogenous behavioural reactions of banks. In stressed conditions, institutions with a liquidity surplus tend to refrain from lending in the interbank market because of precautionary hoarding of liquidity for their own potential liquidity needs. In fact, as of August 2007 money markets tightened as banks started hoarding liquidity, as explained above, to meet contingent claims with respect to their off-balance sheet vehicles and conduits, meet margin calls on repo and derivative transactions, or to better position themselves against possible funding shortfalls. Such behaviour was further intensified due to a lack of understanding about the level of exposure to difficult-to-value and potentially impaired assets and, in relation to this, financial health of other institutions. The combination of these factors made banks reluctant to lend funds to each other, as evidenced by TED<sup>160</sup> spread (see Chart 3). These concerns prompted banks in

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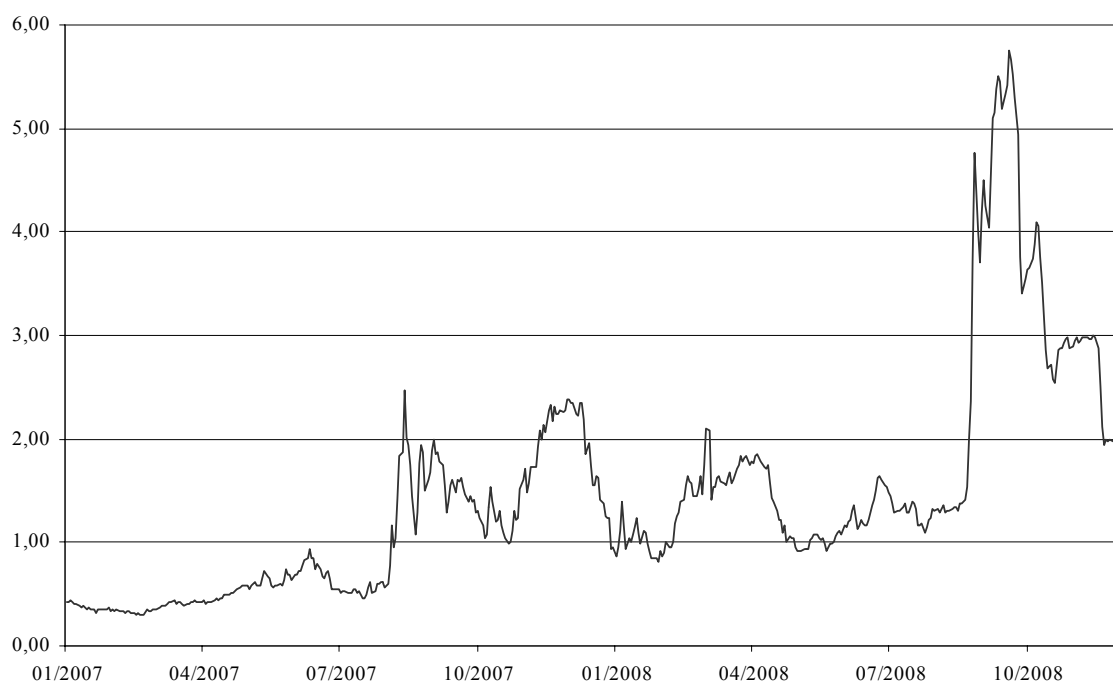
<sup>159</sup> Notably, structured securities the value of which depends on underlying assets that may not be fully transparent to the public

<sup>160</sup> The difference between the three-month London interbank offered rate (LIBOR) and the interest rate on the three-month US Treasury bill; TED is an acronym formed from T-Bill and ED, the ticker symbol for the Eurodollar futures contract. It is a widely used proxy to measure the liquidity in the interbank market because, at times of uncertainty, it reflects both the fact that banks charge higher interest rate to

the euro area to park their short term liquidity with the ECB rather than engage in inter-bank lending admittedly at higher rates (for dynamics of the euro zone banks' deposits with the ECB see Chart 2). Absent liquidity on the interbank market, several financial institutions relying on wholesale funding faced liquidity tightening. Mortgage lender Northern Rock collapsed in September 2007, following a first wave of illiquidity in the interbank market that started a month before. Failures of Bradford & Bingley and HBOS in September 2008 were also partially driven by their reliance on wholesale funding markets.<sup>161</sup>

The nature, magnitude and duration of the liquidity shock were not fully anticipated by the financial sector and, particularly, by banks that had been aggressive in leveraging their balance sheets and reliance on inter-bank funding. The shock underscored shortcomings in liquidity risk management, including stress testing exercises, of institutions as risk management had focussed predominantly on firm-specific constraints and not enough on the implications of market-wide disruptions or combinations of firm-specific and market-wide shocks. While higher capital levels had been thought to allow banks to absorb unexpected losses and provide reassurance to markets, events of 2007-2008 demonstrated that even well capitalised banks faced serious liquidity problems, that had been precipitated in part by asset and liability maturity mismatches. These events illustrated how quickly and severely liquidity risks can materialise and certain sources of funding can disappear, compounding concerns related to the valuation of assets, capital adequacy and financial stability in general.

**Chart 3:** TED spread in percentage points, January 2007 – December 2008



**Sources:** US Federal Reserve, European Commission calculation

While interventions of central banks and deposit guarantee schemes can limit the impact of liquidity shocks, they raise the problem of moral hazard wherein banks may be insufficiently prudent in managing their liquidity risk ex-ante, expecting the central bank to provide the

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each other for unsecured loans but also a reduction in T-bill rate as institutions increase their demand for collateral of the highest quality.

<sup>161</sup> According to Barclays Capital, over decade leading to the crisis, European bank wholesale funding as % of balance sheet has increased from 40% to 70%, while the simple funding gap expressed as loans less deposits has tripled from approximately \$1 trillion to over \$3 trillion.

necessary liquidity in times of stress. Moreover, the crisis also confirmed the perceived ‘stigma’ of borrowing from the central bank which led some institutions to withdraw lines and cut exposures, thus exacerbating rather than easing of funding pressure and compromising effectiveness of central bank intervention.

In recognition of the need for credit institutions to improve their liquidity risk management, the CRD was amended in 2009 to include minimum qualitative standards for institutions' liquidity risk management and the supervisory review of that risk management.<sup>162</sup> However, these amendments fell short of providing for harmonised quantitative standards, thereby leaving regulatory standards in this important field un-harmonised while in the area of capital requirements, both a quantitative standard and qualitative requirements on the internal management exist in European legislation. While a number of MS impose some form of quantitative regulatory standard for liquidity, *no harmonised sufficiently explicit regulatory treatment on the appropriate levels of short-term and long-term liquidity exists at the EU level*. There are differences in national liquidity regimes that arise from different degrees of resilience to liquidity stress that different MS aim at. Linkages to certain nationally determined factors such as insolvency regimes, deposit insurance arrangements, central bank credit and collateral policies or structure of the banking sector also play a role.

Such differences in national liquidity regimes may give rise to potential level-playing field issues, particularly, for firms that have cross-border operations. As regards supervisory reporting, diversity in current national approaches imposes additional costs on cross-border institutions and hampers effective communication and cooperation between supervisory authorities. In addition to the lack of comparability of national reporting frameworks, effectiveness of supervision was impacted adversely by inadequate timeliness and content, e.g., missing off-balance sheet items, of supervisory reports. Finally, the absence of a harmonised liquidity regime leads to liquidity supervision being carved out from the principle of home country supervision over branches of credit institutions within the EU, whereas in all other areas of prudential rules, a level of harmonisation has been reached that allows credit institutions to exercise their freedom of establishment without their branches being subject to host country rules and supervision.

### **3.3. Eligibility of capital instruments and regulatory adjustments**

The EU banking system entered the crisis with capital of insufficient amount and quality. Mounting losses forced banks to rebuild their capital bases at the time when it was most difficult to do so, in turn, necessitating governments to provide support to the banking sector in many countries and on a massive scale (see Chart 1) and contributing to the onset of economic downturn. More specifically, the existing CRD provisions on definition of capital were shown to suffer from the following shortcomings:

- i. *Certain capital instruments did not meet the expectations of markets and regulators with regard to their loss absorption, permanence and flexibility of payments capacity on a going-concern basis*. This in particular pertains to the effectiveness in relation to the above three criteria of hybrid capital instruments (hybrids) and certain types of non-hybrid instruments that make part of 'original own funds'. The original CRD as adopted back in 2006 did not establish an EU framework for the recognition of hybrids within banks' Tier 1 capital despite the fact that the criteria of loss absorption, flexibility of payments and permanence which are critical for determining an instrument's inclusion as a component of Tier 1 capital

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<sup>162</sup> Directive 2009/111/EC amending Directive 2006/48/EC

had been agreed at the G10 level and announced in the Sydney Press Release<sup>163</sup> in 1998. As a result, several MS (non-members of G10) did not have a regime for including hybrids within Tier 1 capital, while supervisors in jurisdictions with such a regime had discretion to assess whether instruments satisfy the criteria agreed at the G10 level. This shortcoming was largely addressed with the adoption of the CRD II that established a harmonised set of stringent criteria for Tier 1 hybrid capital<sup>164</sup> and introduced explicit limits<sup>165</sup> on different types of Tier 1 hybrid capital, such as convertible capital, innovative hybrids and other hybrids. However, these provisions take effect only as of end 2010.

As regards the flexibility of payments, the crisis has shown that when these instruments included a possibility to defer or cancel a dividend (coupon) to enable banks to conserve resources during difficult times<sup>166</sup>, such possibility was not widely exercised. This was in part driven by a stigma of dividend cancellation being interpreted by the market as a signal of distress. In fact, since banks routinely paid dividends on their common shares, they had to pay them on hybrids as well (so called 'dividend pusher' clause), as in most cases issuers of both bonds and equities must pay coupons on bonds before they pay dividends on shares. While supervisors have the authority under certain conditions to restrict dividend payments by banks, they not always exercised this option because of the consideration that banks would find it difficult to raise additional capital if they cancelled or cut dividends/coupons. Also, bank creditors did not exercise an appropriate level of market discipline as they fully expected that due payments would be continually made. Effectively, the outflow of dividends and coupons contributed to the weakening of the banking sector at the time when capital was most needed.

As regards permanence, there were instances of banks calling hybrids despite the higher cost of replacing them at the time of crisis.<sup>167</sup> This was in particular true when market expectations were based on instrument's contractual terms that provide for a step-up in the interest rate if call is not exercised which effectively made such hybrids synthetically-dated.<sup>168</sup> Even though seemingly in the interest of banks' shareholders, skipping the call options (e.g., RBS, Bradford & Bingley, KBC Group) or cancelling/deferring coupon payments (e.g., BayernLB, Commerzbank, Lloyds, RBS, Allied Irish Banks, Bank of Ireland, Cajasur) on hybrid capital – where banks had the discretion to suspend payments - became more prevalent only later in the crisis, in the context of state aid to financial

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<sup>163</sup> See <http://www.bis.org/press/p981027.htm>

<sup>164</sup> Article 63a

<sup>165</sup> Article 66; CRD II admits hybrids up to 50% of Tier 1 capital.

<sup>166</sup> According to CEBS, in 2006 only 19% of hybrids reported by EEA banks as Tier 1 capital did not have a right for the issuer to suspend payments, while as regards the remaining instruments, issuers had a right to do so in case of solvency difficulties, breach of regulatory solvency or other limits fixed by supervisors and in other situations

<sup>167</sup> In fact, the markets were caught by surprise when in December 2008 Deutsche Bank broke this convention by announcing that it would not buy back €1 billion of subordinated lower Tier 2 bonds. Its decision was based on economic grounds: accepting the step-up allowed the bank to pay annual interest of about 4% versus 7% if it tried to replace it with a new debt. As a result, credit default swaps on the Markit iTraxx Financial Index linked to subordinated bonds of 25 European banks and insurers jumped 20 basis points, reflecting investors' concern that Deutsche Bank's decision would encourage other borrowers to skip a call on all hybrids – whether Tier 2 or Tier 1 hybrids (sources: Bloomberg, Financial Times). Other instances of skipping a call on hybrid securities had been rare: in April 2008, Italian bank Credito Valtellinese Scrl chose not to call bonds of €150 million.

<sup>168</sup> According to CEBS, in 2006 42% of hybrids (mostly innovative instruments) reported by EEA banks as Tier 1 capital had a step-up feature at the time of their issue

institutions, and was in part due to the Commission policy that included the objective of 'burden sharing'.<sup>169</sup>

In relation to loss absorption, the CRD II provisions<sup>170</sup> require hybrid securities to provide 'for principal, unpaid interest or dividend to be such as to absorb losses and to not hinder recapitalisation of the credit institutions'.<sup>171</sup> According to CEBS<sup>172</sup>, in 2006 for 39% of hybrids reported by EEA banks as Tier 1 capital, issuers had a right to write down a principal on a going concern basis either permanently or temporarily, while 1% of hybrids had a possibility of conversion to ordinary shares. For instance, payment of principal and interest on Bradford & Bingley's hybrid capital was deferred until after its repayment of liability to the UK government that was provided to the bank in the process of its nationalisation.<sup>173</sup> However, such instances of hybrid capital instruments absorbing losses during the crisis have been rare. More importantly, as in case with flexibility of payments and permanence criteria, events of the crisis demonstrated that majority of Tier 1 hybrids met the three criteria of Tier 1 capital only once bank recapitalization by governments commenced.

As a result, the crisis effectively delineated those capital instruments that acted as a 'going-concern' capital from those that acted rather as a 'gone-concern' capital. This made both market participants<sup>174</sup> and regulators<sup>175</sup> to consider using much stricter definitions of capital, which among other elements also excluded hybrids, to measure banks' strength on a going-concern basis.

- ii. *The list of regulatory adjustments proved to be incomplete* as a number of balance sheet items whose valuation and/or loss absorption potential is less certain on a going-concern basis in times of market distress (such as minority interests, deferred tax assets, pension fund assets) have been effectively removed by market participants and regulators from regulatory capital ratios as reported by individual institutions. This list is not harmonised

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<sup>169</sup> Commission communication on the return to viability and the assessment of restructuring measures in the financial sector in the current crisis under the State aid rules, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:195:0009:0020:EN:PDF>

<sup>170</sup> Article 63a

<sup>171</sup> When a credit institution incurs huge losses it may need to be recapitalised. Availability of the hybrid principal and flexibility to stop the payment of coupons on hybrid may not be sufficient to attract new share capital as investors would be concerned that new capital provided to recapitalise the institution is used directly to benefit existing hybrid holders. To address this, hybrids must contain a mechanism that makes the recapitalisation easier by limiting the potential future outflows to the holders of hybrids.

<sup>172</sup> CEBS, Report on a quantitative analysis of the characteristics of hybrids in the European Economic Area (EEA), March 2007

<sup>173</sup> See <http://corporate.bbg.co.uk/media-centre/latest-news/2010/2010-02-23.aspx>

<sup>174</sup> For instance, Standard & Poor's calculates an individual bank 'total adjusted capital' (TAC) with a definition different from that of regulatory requirements. The credit rating agency limits the inclusion of Tier 1 hybrid instruments for most banks to 25%. When combined with additional adjustments to TAC (such as for pension deficits, intangibles) as well as adjustments to risk weighted assets under Basel II, Standard & Poor's risk adjusted capital ratio for a global sample of 45 banks in mid 2009 was equal to 6.3%, markedly below their average regulatory Tier 1 ratio of 9.7%. S&P, *S&P Ratio Highlights Disparate Capital Strength Among The World's Biggest Banks*, November 2009, <http://www.standardandpoors.com/ratings/articles/en/us/?assetID=1245195414308>

<sup>175</sup> For instance, in early 2009, the US conducted a stress test on 19 largest banking groups by measuring their financial health on the basis of 'Tier 1 common capital', effectively excluding hybrids. 'Tier 1 common capital' was calculated as Tier 1 capital (that excludes certain intangible assets, including goodwill and deferred tax assets) less non common elements, including qualifying perpetual preferred stock, qualifying minority interest in subsidiaries, and qualifying trust preferred securities; for more information please see <http://www.federalreserve.gov/newsevents/press/bcreg/bcreg20090507a1.pdf>

across the EU, as Article 61 of the CRD provides MS with a discretion as regards deductions of items that are not included in Article 57.

Minority interest represents shares issued by a group entity and is available primarily to absorb losses which occur in this entity. Currently, national practices as regards the inclusion of minority interest, including extent thereof, in 'original own funds' across the EU differ, as Article 65 of the CRD provides for a discretion. According to estimates of HSBC<sup>176</sup>, at the end of 2009 minority interests contributed €95 billion to European bank capital (or 46% of the global total of €206 billion) of which €75 billion were included in Tier 1 and €60 billion in core Tier 1. Over 65 European banks had capital contribution from minority interests, of which 15 had minority interest in excess of €1 billion that in some cases constituted over 20% of their Tier 1 capital. However, minority interest may not necessarily be readily available to absorb losses elsewhere in a group, including the consolidating entity. Therefore, in cases where a group entity is overcapitalised, inclusion of minority interest at the consolidated entity level may represent an artificial enhancement to its capital ratios. For this reason it may be warranted to subject minority interest to a haircut and regulators in some EU MS (e.g., IT) and international jurisdictions have been already following this rationale.

Deferred tax assets (DTAs) can be defined as the amounts of income taxes that may be recovered by a company in the future. They may arise due to (i) temporary timing differences between statutory and tax accounting profits (e.g., limitations to deductions for tax purposes in the current period), (ii) unused tax losses that can be carried forward to use against future taxable profits, or (iii) tax credit carry forwards which are unused tax credits that can be used against future taxable profits. However, DTAs whose realisation through reduced future tax payments is contingent on a financial institution's ability to generate profits raise prudential concern as they may not provide protection to depositors in case of insolvency. Moreover, DTAs can be written down in a period of stress when banks' future profitability becomes less certain. As a result, as crisis evolved market participants, including investors, industry analysts and credit rating agencies, grew increasingly concerned about the impact of DTAs on the quality of regulatory capital measures of banks.<sup>177</sup> According to the CEBS, regulators in several MS (e.g., SE, DK), already require that DTAs be deducted from banks' Tier 1 capital while in AT tax losses carried forward are not allowed under national GAAP.

- iii. The crisis also showed that *regulatory adjustments when applied were not applied to the appropriate layer of regulatory capital*. Under the CRD, the current adjustments are generally applied on a 50%-50% basis to Tier 1 and Tier 2 (although in some cases solely to Tier 1 capital).<sup>178</sup> This allowed banks to report high Tier 1 ratios, despite the fact that they had low levels of Tier 1 capital when considered 100% net of the adjustments such as adjustment for investments in other financial institutions in excess of 10% of the common stock of such financial institutions. A deduction in this case is warranted to prevent a reduction in capital as a result of loss absorption in one financial institution from being immediately reflected as a loss of capital in the investing financial institution. Furthermore, current provisions of the CRD enabled some banks to circumvent this requirement

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<sup>176</sup> See [http://ec.europa.eu/internal\\_market/bank/docs/gebi/hsbc\\_en.pdf](http://ec.europa.eu/internal_market/bank/docs/gebi/hsbc_en.pdf)

<sup>177</sup> According to Fitch Ratings, DTAs of US banks rated by the agency increased by 300% over the 12 month period ending June 2009, which, given the uncertainty surrounding certain banks' operating performance, increases the risk that they would need to write down their DTAs; Fitch Ratings, *US Banks' Deferred Tax Assets*, September 2009

<sup>178</sup> Article 66

altogether by virtue of a national discretion allowing to treat the above investments in other financial institutions as equity and debt instruments as part of banks' trading book in cases where they acted as market makers in these securities.<sup>179</sup>

The above shortcomings contributed to the banking sector entering the crisis with reported Tier 1 capital ratios that were not reflective of institutions' effective capacity to absorb losses on a going-concern basis. As the crisis deepened and banks faced growing losses and writedowns which directly reduced their retained earnings, their fundamental solvency was called into question. Moreover, *variations in the definition of Tier 1 capital stemming from differences in application of regulatory adjustments across the MS* obstructed the comparability and reliability of this measure. This led to the loss of confidence in Tier 1 as measure of capital adequacy by market participants and regulators who instead focused on alternative measures mostly based on common equity and adjusted for the balance sheet elements whose value and loss absorption potential proved to be uncertain during market distress, such as tangible common equity or core Tier 1 capital.

As importantly, the crisis has confirmed the importance of banks having sufficient capital buffers in good times to enable them to weather difficult times, as accessing private equity and hybrid capital markets for most European banks during the crisis proved to be rather difficult, which made the taxpayers provide the funding for the resultant shortfall of capital and impeded the flow of bank credit the real sector of the EU economy (please see section 3.5 for more detailed discussion of the escalation of pro-cyclical effects).

### **3.4. Counterparty credit risk**

According to the data of the International Swaps and Derivatives Association (ISDA), the total outstanding notional amount of the over-the-counter (OTC) derivatives from 2001 to 2007 on average grew at the annual rate of 37%, reaching \$454 trillion globally in 2007<sup>180</sup> whereas according to the International Capital Markets Association (ICMA), the value of outstanding repo contracts on the books of 68 European institutions reached some €6.4 trillion in 2007. The crisis revealed a number of shortcomings in the current regulatory treatment of counterparty credit risk (CCR) exposures arising from derivatives, repos and securities financing activities. It showed that the existing CRD provisions did not ensure appropriate management and adequate capitalisation of financial institutions against the CCR that materialised during the crisis which was driven by a number of factors, of which the most material are the following:

- i. *The current framework did not adequately capture specific and generalised wrong-way risk.* Specific wrong-way risk arises when the exposure to a particular counterparty is positively correlated with the probability of the default of the counterparty<sup>181</sup>, i.e., when the credit exposure and default risk increase together. Generalised wrong-way risk relates to a situation where the probability of default of counterparties is adversely correlated with general market risk factors.<sup>182</sup> During the crisis, a key observation was that defaults and deteriorations in the creditworthiness of trading counterparties occurred precisely at the time when market volatilities, and therefore counterparty exposures, were higher than usual.

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<sup>179</sup> Directive 2006/49/EC, Annex VII, part D

<sup>180</sup> According to ISDA, of 500 biggest global companies in 2008 (based on 2008 Fortune Global 500) 471 used some type of the OTC derivatives.

<sup>181</sup> Annex III, Part 1, point 28

<sup>182</sup> Annex III, Part 1, point 27 and Part 6, point 34

Although the current rules<sup>183</sup> require monitoring of specific wrong-way risk, no standard practice has been developed by institutions and many of them entered into transactions with substantial exposure to this type of risk. A particular example of such transactions related to the purchase of credit protection from the so-called 'monoline'<sup>184</sup> insurers. Monolines such as AMBAC, MBIA and ACA provided insurance on mortgage-backed securities and other structured products. When defaults on sub-prime mortgages soared and monolines' ability to make payments on all the insurance contracts signed became less certain, their creditworthiness was downgraded by the credit rating agencies, leading to a tsunami of margin calls and subsequent demise of several monolines on one side and mark-to-market losses combined with increased capital charges in relation to the insured securities for banks that held them, on the other.<sup>185</sup>

*The framework also did not directly require capital for mark-to-market losses due to credit valuation adjustments (CVA). Roughly two-thirds of counterparty credit losses were due to CVA losses and only one third were due to actual defaults.<sup>186</sup> The current framework addresses CCR as a default and credit migration risk, but does not fully account for market value losses short of default.*

- ii. The calculation of CCR associated with a derivative contract or credit guarantee between financial institutions accounts for a degree to which the market values of their assets are correlated. An increase in probability of default at one institution is likely to coincide with deterioration in asset quality at the counterparty, implying an increased probability that the counterparty will default on the derivative or guarantee contract. Under the current CRD provisions, counterparty exposures associated with OTC derivatives are assigned the same asset value correlation (AVC) as that which is used for a direct loan to a counterparty.<sup>187</sup> *However this approach does not recognize the unique, systemic risk associated with such exposures given the extent to which they are concentrated at large financial institutions, whose counterparties generally are other large financial institutions.* The crisis confirmed that large financial institutions were more interconnected than reflected in the capital framework. As a result, when markets entered the downturn, institutions' counterparty exposures to other financial firms also increased. During the crisis, financial institutions proved to be relatively more sensitive to systemic risk than non-financial firms and their credit quality deteriorated simultaneously. Evidence suggests that asset values of financial firms are more correlated with each other in comparison to those of non-financial firms. The work conducted by the Basel Committee of AVCs between some 12,400 firms from 1995 to 2008 showed that average AVC for financial firms with assets of at least \$25 billion relative to the financial sector index was at least 25% higher than the average AVC for non-financial firms relative to the overall market index.

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<sup>183</sup> Annex III, Part 6, points 35 and 39

<sup>184</sup> Monoline insurers guaranteed the timely repayment of the bond principal and interest in case an issuer of the debt defaulted. Essentially, monolines provided a back-up guarantee to the debt issued by lower rated borrowers in exchange for insurance premiums and, therefore, had to be highly rated by the credit rating agencies in order to fulfil such a role. For instance, a borrower rated A, by paying a premium to a monoline could use for its debt the monoline's AAA rating which made the debt attractive to additional investors and reduced the interest rate to be paid on the debt.

<sup>185</sup> In January 2008 Barclays Capital estimated that potential losses for banks globally due to downgrades of monoline insurers could be in the range of \$48-\$143 billion

<sup>186</sup> According to estimates of the Basel Committee

<sup>187</sup> After quantifying exposure at default as a multiple ( $\alpha$ ) of the expected positive exposure (EPE) to the counterparty, the Basel II formula for corporate loans is applied



- iii. *The existing framework did not provide sufficient incentives to move bilaterally cleared OTC derivative contracts to multilateral clearing through central counterparties (CCPs). CCPs can play an important role in the efforts to reduce the systemic risk arising from the intricate web of exposures formed by holdings of derivatives products by banks and other financial institutions. However, regulatory capital requirements for bilaterally cleared trades were not sufficiently high to offer an attractive incentive to clear OTC derivative trades through a CCP. Instead, the need to post initial margin when clearing trades with a CCP apparently more than offset the fact that no regulatory cost was involved for such trades.*
- iv. *Calculation of capital based on Effective Expected Positive Exposure (EPE) did not provide sufficient incentives for posting adequate initial margins throughout the cycle. Initial margining was typically very low at the start of the crisis and increased rapidly during the turmoil. The raising of initial margin during the crisis served to protect the institutions, but also triggered weakened position if not the failure of certain counterparties, thus exacerbating the crisis (see section 3.2 on funding liquidity problems related increase in margin calls on complex transactions).*
- v. *The crisis also revealed a number of significant shortcomings in institutions' risk management of counterparty credit exposures, including in particular the areas of back-testing, stress testing, and collateral management. The difficulties in statistical interpretation of back-testing results for CCR suggest that many firms did not appropriately consider problems that were identified by back-testing. The use of models with poor back-testing results contributed to an underestimation of potential losses. Stress testing of CCR was not comprehensive, was run infrequently, sometimes on an ad hoc basis; and, in many institutions, provided inadequate coverage of counterparties or the associated risks. The crisis also highlighted a number of areas of concern that were related to the management and operation of the collateral management process.*

### **3.5. Pro-cyclicality of lending**

Pro-cyclical effects can be defined as those which tend to follow the direction of and amplify an economic cycle. Within the financial system, such effects have a significant bearing. In particular, bank lending could contribute to amplify business fluctuations, which in turn may exacerbate financial instability. Recent empirical evidence confirms that shocks to credit supply have the potential to affect economic activity in the predominantly bank-based euro area. Other theories, such as the monetary theory of the business cycle<sup>188</sup> emphasize the role played by an artificial credit expansion in fostering a boom-bust cycle. The theory underlines the potential for generating economic cycles by the fractional reserve banking sector when bank credit is misaligned from the intermediation of real savings. The cyclical nature of bank lending has many, often interconnected sources that include both market and regulatory failures.<sup>189</sup>

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<sup>188</sup> The theory was pioneered by Ludwig von Mises and F.A. von Hayek obtained the Economics Nobel Prize in 1974 for his contribution to it.

<sup>189</sup> For a thorough description of the main sources of pro-cyclicality please see: BIS, *Addressing financial system procyclicality: a possible framework*, Note for the FSF Working Group on Market and Institutional Resilience, September 2008; and Masschelein, N., *Monitoring pro-cyclicality under the capital requirements directive: preliminary concepts for developing a framework*, NBB Working Paper Document No. 120, 2007

### 3.5.1. *Underlying market failures and systemic aspects*

The cyclical nature of bank lending is in part driven by several market failures such as *limitations in the measurement of risk, information asymmetries* between borrowers and lenders and *inappropriate responses of financial institutions to changes in the economic conditions*:

- i. Financial institutions have difficulties in assessing absolute level of risk (while they fare better at assessing relative risk), especially over a prolonged period, and so rarely identify booms with consequences for systemic risk. Hence, when macro-economic conditions were favourable, banks engaged in a rapid expansion of their balance sheets without due consideration about implications for system-wide financial stability.

Measures of risk may be quite low as vulnerabilities and risk accumulate during the expansion phase but spike once tensions arise, for example, the market risk embedded in banks' trading book can be easily underestimated if measured over short holding periods. Such limitations to perception of risk are in part attributable to the paucity of information regarding the dynamics of systemic risk and are explained by certain theories of behavioural finance such as disaster myopia<sup>190</sup> and cognitive dissonance<sup>191</sup>.

The misperception of risk may be exacerbated by a strong industry-wide drive for profit and moral hazard of implicit safety nets. The decisions made by each market participant may be rational in their own terms to promote the success of an individual institution during a period of growth (or to preserve capital or liquidity during a downturn), but may be sub-optimal when considering the system as a whole.<sup>192</sup>

- ii. When economic conditions are depressed and collateral values decline, information asymmetries with respect to the quality of clients' balance sheets can imply that even borrowers with profitable projects find it difficult to obtain funding. When economic conditions improve and collateral values rise, the opposite situation may occur. This reasoning suggests that pro-cyclical effects may be more pertinent to borrowers which are more prone to asymmetric information, including small and medium-sized enterprises not subject to external ratings and extensive disclosure requirements.
- iii. Inappropriate financial institutions' responses to changes in economic conditions in some cases are explained by short-term bias of remuneration structures or herding behaviour<sup>193</sup>. Remuneration policies in financial institutions had an enhancing pro-cyclical effect where they entailed disproportionate rewards on the upside and insufficient penalties on the downside, e.g., bonuses based on short-term profits that are paid immediately, with no risk adjustment or deferred payment to take account of future performance of the business unit or institution as a whole.

The crisis also showed that while in the absence of raising capital by the private sector greater efforts should have been made to rebuilding of regulatory capital (in order to limit the rate and level of its depletion due to accumulating losses), many banks maintained

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<sup>190</sup> Tendency to underestimate the likelihood of high-loss low-probability events

<sup>191</sup> Tendency to interpret information in a biased way, so that it reinforces the prevailing belief entertained by the economic agent

<sup>192</sup> For a comprehensive review see Borio, C., C. Furfine, and P. Lowe, *Procyclicality of the financial system and financial stability: issues and policy options*, BIS Paper No 1, 2001

<sup>193</sup> A tendency of market participants to conform in their behaviour with that of their peers

generous discretionary distributions to their shareholders, providers of other capital instruments and employees. In some cases banks that had depleted their capital buffers used the distribution of capital as a way of signalling their financial strength to the markets. Such practices put shareholders' interests above those of depositors and created peer pressure on other banks to follow suit. As a consequence, financial institutions in aggregate ended up increasing distributions at the exact point in time when they should have been conserving their earnings and capital. According to Acharya et al.<sup>194</sup> dividends of 21 large banks from the US and Europe increased from 0.4% of their assets in 2000 to 1.1% in 2007 and were still at 0.7% through the first three quarters of 2008, in spite of a deepening financial crisis.

In light of the financial crisis, the effect of pro-cyclical feedback mechanisms on the financial system has been examined by a number of international groups, including the FSB, the Basel Committee, the G-20 and, within the EU, a working group of the Economic and Financial Committee (EFC). Several of these groups, including FSB, the Basel Committee and the G20, published their findings and / or recommendations in spring 2009. In line with the above, the Commission in its Communication of 4 March 2009, announced that it would pursue certain measures aimed at enhancing level of capital and introducing counter-cyclical buffers and a supplementary metric to better control leverage and liquidity risks.

In order to address the harmful effect of poorly designed remuneration structures, in 2009 the Commission adopted the CRD III proposal which included provisions to supplement the requirements of the CRD with an express obligation for credit institutions and investment firms to establish and maintain, for those categories of staff whose professional activities have a material impact on their risk profile, remuneration policies and practices that are consistent with effective risk management.

To improve the adequacy of bank capital requirements, the CRD III proposal also included provisions for increase in regulatory capital requirements for the trading book activities and re-securitizations held in the banking book. During the financial crisis, weakness of the minimum capital requirements in these areas led to additional stress on banks' capital positions which, in turn, contributed to the tightening of bank lending standards. Importantly, measures to address the risk capture in the area of CCR (see section 3.4) that are part of the current CRD IV proposal shall have a positive effect on limiting the cyclicity of the minimum capital requirements.

In 2010, the European Parliament and the Council adopted the Commission's proposal to set up a European Systemic Risk Board (ESRB)<sup>195</sup> to oversee the stability of the financial system as a whole. ESRB would identify systemic risks at the European level and issue risk warnings. Adding a robust macro-prudential overlay to the current micro-prudential approach should help to address sources of pro-cyclicality linked to limitations in the risk measurement and inappropriate responses of market participants to risk. This should support the timely identification of cycles and the build-up of risks in the system which, when accompanied by robust links to supervisors and policymakers, could enable action to be taken earlier to avoid excessive volatility and pro-cyclicality in a downturn.

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<sup>194</sup> Acharya, V., I. Gujral, and H. S. Shin, *Bank Dividends in the Crisis: A Failure of Governance*, 31 March 2009 (<http://www.voxeu.org>)

<sup>195</sup> Regulation (EU) No 1092/2010 of the European Parliament and of the Council of 24 November 2010 on European Union macro-prudential oversight of the financial system and establishing a European Systemic Risk Board

### 3.5.2. Leverage and lending cyclicality

However, the measures proposed by the Commission so far were designed to address only some specific aspects of the above-listed market failures and, therefore, may not be entirely effective in limiting the extent of leverage build-up in the balance sheets of financial institutions and the concomitant overextension of credit. On 23 June 2010 the Commission adopted a report to the European Parliament and to the Council on the effects of the CRD on the economic cycle<sup>196</sup> noting that it would examine additional measures which i) limit the build-up of leverage in the banking sector and ii) curb the excessive risk-taking in times of economic growth but could be drawn down during economic downturns to increase the resilience of the banking sector and to support the credit flow into the economy.

The financial crisis has shown that credit institutions' leverage – the degree to which their exposures exceed their capital levels – can increase to unsustainable levels and have a pro-cyclical effect on the financial system. In the run up to the crisis, many investors, including banks, actively sought higher yields as high levels of available liquidity resulted in risk premia falling to historically low levels. Exceptionally low interest rates, combined with issues of moral hazard and market contestability, pushed banks to search for higher returns, whether through an increase in leverage or investment in more risky financial products.

One feature of current risk-based minimum capital requirements is that they vary over the economic cycle, e.g., they decrease as borrowers' creditworthiness improves during economic expansions. Provided credit institutions could meet their risk-based capital requirements, there is no explicit regulatory constraint on their leverage. *The lack of a limit to their leverage and irresponsiveness of regulatory capital requirements to the build-up of risk at the macro level* enabled banks to grow their balance sheets by taking on more risks.

In this regard, the analysis of credit growth, using credit-to-GDP gap as indicator, from 1995 to 2009 carried out by the ECB for 19 MS showed that credit in the years preceding the financial crisis grew at a fast pace in a number of them (such as IE, LV, LT and HU), signalling the building up of financial imbalances, accumulation of risk at the systemic level and imminence of significant credit-related losses for their banking sectors (see Table 3).<sup>197</sup> A corresponding calculation that has been conducted by the Basel Committee to measure the level of this metric for five years prior to the outbreak of a crisis for a sample of very severe banking crises, including those that e.g. took place in Nordic countries in 1991 and Mexico in 1994, showed average credit-to-GDP gaps consistently in excess of 10%.<sup>198</sup>

When financial asset prices started to fall, the opposite feedback loop was in high gear: assets had to be marked-to-market for losses incurred and banks had to de-leverage by selling them in order to minimize regulatory capital requirements and meet margin calls from their counterparties, prompting further asset price declines (see section 3.2 for the interaction between market liquidity and funding liquidity).

Analysis by IMF<sup>199</sup> based on the sample of 36 large international commercial and investment banks showed that leverage might be a useful indicator of vulnerability of a bank. According

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<sup>196</sup> See [http://ec.europa.eu/internal\\_market/bank/docs/regcapital/monitoring/23062010\\_report\\_en.pdf](http://ec.europa.eu/internal_market/bank/docs/regcapital/monitoring/23062010_report_en.pdf)

<sup>197</sup> In some EU-12 MS, fast pace of credit growth can in part be attributed to their lower pre-crisis levels of credit/GDP

<sup>198</sup> See <http://www.bis.org/publ/bcbs172.pdf?noframes=1>

<sup>199</sup> IMF, *Responding to the Financial Crisis and Measuring Systemic Risk* (Global Financial Stability Report), April 2009

to this analysis, in the period from January 2005 till June 2007 (before the start of the current cycle and the beginning of the sub-prime crisis), leverage<sup>200</sup> of non-intervened<sup>201</sup> banks was equal to 7.6, while leverage of intervened commercial banks and intervened US investment banks was equal to 9 and 13.7, respectively.

**Table 3:** Credit-to-GDP gap for selected EU countries in %, annual averages<sup>202</sup>

	AT	BE	BG	CZ	DK	EE	FI	GR	HU	IE
1995		-2.1			0.4		-24.9			0.7
1996		2.2		-0.2	3.2		-27.9		0.5	1.3
1997	-0.1	4.9		1.5	3.9		-27.8		0.4	5.1
1998	-0.6	5.0	7.6	-3.0	7.0		-25.3		-0.3	4.5
1999	-0.3	5.8	13.3	-3.2	7.5	0.3	-18.0		0.1	10.2
2000	0.6	4.3	13.0	-3.1	7.3	0.5	-13.8		2.1	9.2
2001	-0.4	3.5	12.3	-3.8	8.8	0.5	-11.1	-0.1	1.4	4.6
2002	-2.2	0.3	12.5	-4.4	9.4	2.0	-5.3	-0.4	-3.4	-0.3
2003	-3.8	-1.0	14.1	0.7	9.4	2.2	1.1	-0.5	1.2	-2.1
2004	-3.2	0.6	15.9	5.1	9.4	4.1	5.9	0.2	5.1	6.2
2005	-3.2	-1.0	17.5	9.0	11.7	9.2	9.6	1.9	6.9	19.0
2006	-2.7	-2.0	12.5	12.4	15.7	15.4	12.5	3.2	6.6	28.4
2007	-3.4	6.1	19.2	15.0	20.3	14.5	13.0	3.6	5.5	31.6
2008	-1.8	8.7	22.7	16.8	21.4	7.3	16.1	4.4	8.2	40.2
2009	-0.2	9.1	15.7	15.9	22.0	5.1	21.5	-0.2	14.0	39.4

	LT	LU	LV	MT	PL	PT	RO	SI	SK
1995						-0.6			
1996	0.1			-0.2	0.1	1.9		-0.3	
1997	0.5			-0.7	-0.1	6.0		-0.1	0.0
1998	1.2			-1.7	-0.3	12.6	0.1	1.3	0.4
1999	1.9		-0.5	0.6	0.4	26.0	-1.4	2.1	0.7
2000	0.7	0.3	0.3	-0.8	-0.1	32.8	-0.8	1.7	0.1
2001	0.8	0.7	1.8	-2.3	-1.1	30.6	0.8	1.1	-6.0
2002	2.0	-1.7	2.7	-6.3	-1.7	19.0	2.2	-1.1	-1.8
2003	4.3	-1.8	3.5	-5.5	-1.7	8.2	3.3	-1.5	2.4
2004	7.5	-2.7	5.1	-2.5	-1.6	-3.4	3.5	1.0	4.0
2005	9.6	-1.1	9.5	-1.1	-2.4	-8.1	3.9	4.5	7.1
2006	14.0	-1.7	14.4	1.1	-0.2	-2.1	6.5	7.4	10.1
2007	15.8	3.8	10.7	2.6	3.7	-1.5	8.9	10.9	11.4
2008	13.0	8.7	-0.3	3.1	7.6	4.4	15.5	12.4	12.5
2009	10.3	9.3	-1.0	5.4	9.2		9.3	11.5	13.2

**Note:** Green: 2%<gap<5%; Orange: 5%<gap<10%; Red: gap>10%; No colour: gap<2%. Results for 2009 are most likely distorted due to the impact of the financial crisis on macroeconomic variables.

**Sources:** Individual countries' data, ECB calculation

Another analysis<sup>203</sup>, conducted by the Basel Committee looked at leverage ratios for 117 banks from 19 countries in 2006 and 2007, of which 27 banks were identified as 'severely stressed' during the financial crisis. The results of the analysis showed that severely stressed banks entered the crisis with indicators showing a higher degree of balance sheet leverage. For instance, average leverage, when measured by tangible common equity as a percentage of tangible assets, for the group of severely stressed banks was equal to 2.65% in 2006 in comparison to 3.81% for the group of non-stressed banks.<sup>204</sup>

Even though certain targeted measures to the CRD that are expected to contribute to containing the build-up of excessive bank leverage have been proposed and might be supplemented by additional amendments in the future, given that leverage is also driven by factors outside the bank capital framework and works in a pro-cyclical fashion which - as the recent events have shown - has damaging consequences for a wide range of economic agents,

<sup>200</sup> Measured as a ratio of debt to common equity

<sup>201</sup> Intervened institutions are those that have gone bankrupt or that have received government capital injections or have had assets purchased by government or received loans to facilitate a merger or acquisition

<sup>202</sup> Credit-to-GDP gaps calculated as a difference between the ratio and its long term trend, whereas the trend is derived based on quarterly data using a one-sided Hodrick-Prescott filter with a choice for the smoothing parameter  $\lambda$  a value of 400,000

<sup>203</sup> See <http://www.bis.org/publ/bcbs180.pdf>

<sup>204</sup> Difference statistically significant at 5% level

it is appropriate to consider developing a measure that controls the overall extent to which financial institutions can leverage their capital.

The need to introduce a leverage ratio as a back-stop measure to the risk-based capital requirements results from the difficulty of quantifying systemic risk, in particular at the micro-level of financial institutions. As the current crisis has demonstrated, the entire financial sector can move into a high-gear of balance-sheet expansion in the boom phase, blurring the analysis of risk by financial institutions. As the ex-ante identification of systemic risks and formation of asset-bubbles is largely a probabilistic exercise, the introduction of a 'hard' leverage ratio would help alleviate an excessive expansion of credit.

### **3.6. Options, discretions and minimum harmonisation**

#### *3.6.1. Current framework*

The CRD is a recast of the Consolidated Banking Directive (2000/12/EC). In 2000, seven banking directives and their amending directives were replaced by one single Directive. In 2006, the CRD introduced the Basel II framework in European legislation. As a result, the CRD provisions include a significant number of options<sup>205</sup> and discretions<sup>206</sup>. In particular, the recast of 2000/12/EC to introduce the Basel II framework has resulted in 101 options and discretions which have been identified by CEBS.<sup>207</sup> To a large extent, insertion of national options and discretions in the CRD has been used to facilitate compromises between diverging positions of MS and the European Parliament and to better accommodate specificities of local markets.

In addition to the aforementioned availability of options and discretions, the CRD is a 'minimum harmonisation' Directive. This is explicitly acknowledged in recital 15 of Directive 2006/48/EC<sup>208</sup> and means that MS may 'add' stricter prudential rules, which gives rise to a practice known as 'gold-plating'.

Divergences in national rules stemming from the possibility of application of national options and discretions and gold-plating are exacerbated by the process of transposition itself. Finally, national rules transposing the CRD are interpreted in accordance with local traditions and approaches thereby deepening the divergences in application of the CRD across the MS further.

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<sup>205</sup> An option refers to a situation in which competent authorities or MS are given a choice on how to comply with a given provision, selecting from a range of alternatives. For example, for purposes of risk-weighting institutions or local authorities, MS may apply either the central government risk-weight based method or the credit assessment based method. Options granted to credit institutions to flexibly make use of prudential treatments reflecting different risk management processes are not included in this list.

<sup>206</sup> Discretion refers to a situation in which competent authorities or MS are given a choice as to whether to apply, or not to apply, a given provision. For example, a competent authority under particular circumstances can apply a 50% risk-weight to commercial real estate, or waive capital requirements at solo level for domestic subsidiaries.

<sup>207</sup> Competent authorities are required under Article 144 (b) of the CRD to disclose 'the manner of exercise of the options and discretions available in Community legislation'. CEBS has developed a 'supervisory disclosure framework' for that purpose (<http://www.c-eps.org/Supervisory-Disclosure.aspx>)

<sup>208</sup> "The Member States may also establish stricter rules than those laid down in Article 9(1), first subparagraph, Article 9(2) and Articles 12, 19 to 21, 44 to 52, 75 and 120 to 122 for credit institutions authorised by their competent authorities. The Member States may also require that Article 123 be complied with on an individual or other basis, and that the sub-consolidation described in Article 73(2) be applied to other levels within a group"

### 3.6.2. Policy context: the new EU financial architecture

This accumulation of national options and discretions and the possibility to make 'additions' at national level when transposing the directive have resulted in administrative burden for firms operating in different MS. This has been explicitly recognised by the Ecofin Council in the context of the review of the Lamfalussy process. In its conclusions of 4 December 2008, the Ecofin invited MS "to keep under review the options and discretions implemented in their national legislation, limit their use (wherever possible) and report to the Commission on these findings". The Ecofin also invited the Institutions "to introduce a 'review clause' in future EU legislation on all options and discretions included in the respective acts". When this review clause comes into effect after a specified time, the necessity and use of the options and discretions should be reviewed and, where necessary, abolished where there is no demonstrated need.

Likewise, the High Level Group on Financial Supervision in the EU chaired by Jacques de Larosière<sup>209</sup> invited the EU to develop a more harmonised set of financial regulation. As a follow-up to this report, Commission Communication of 4 March 2009 emphasised that "key differences in national legislation stemming from exceptions, derogations, additions made at national level or ambiguities contained in current directives should be identified and removed, so that a harmonised core set of standards is defined and applied throughout the Member States", and called for a 'rolling' plan to deliver a single rule book. In the context of the future European supervision architecture, the European Council also stressed the need to establish a European single rule book applicable to all financial institutions in the Single Market.<sup>210</sup>

As a follow-up to the de Larosière report, in 2009 the Commission has proposed the creation of a European System of Financial Supervisors that already became operational as of January 2011. At the EU-level, the four existing Lamfalussy Level 3 Committees of Supervisors have been replaced by three new European Supervisory Authorities (ESAs), i.e., EBA, a European Insurance and Occupational Pensions Authority (EIOPA), and a European Securities and Markets Authority (ESMA), each of them having a legal personality and their Joint Committee for common issues such as anti-money laundering, financial conglomerates, accounting and others. These new ESAs took on all the missions of the previous Committees and received additional increased responsibilities, defined legal powers and greater authority.

In particular, the ESAs have been entrusted with the task of developing technical standards in areas specified in their respective sectoral legislation. The areas, where the Authorities are empowered to develop technical standards for endorsement by the Commission, concern issues of a highly technical nature where uniform conditions for implementing Community acts are needed.

For standards to be best developed, requirements of the CRD should not diverge, i.e., there should be no possibility to apply stricter rules, or different options and national discretions at a national level. The technical standards developed by the new ESAs (Article 7 of the proposed Regulations) will be adopted by the Commission in the form of regulations (or decisions).

Against this background, maximum harmonisation and the removal of options and discretions would be instrumental in allowing the new authorities to develop technical standards that will

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<sup>209</sup> See [http://ec.europa.eu/internal\\_market/finances/docs/de\\_larosiere\\_report\\_en.pdf](http://ec.europa.eu/internal_market/finances/docs/de_larosiere_report_en.pdf) (recommendation No 19)

<sup>210</sup> Brussels European Council 18 and 19 June 2009

become legally binding once endorsed by the Commission, and, thus, in fully underpinning the reform of the EU supervisory architecture.<sup>211</sup> In addition, further clarity and consistency of the Community legislation would limit scope for disagreement between supervisors, and, where disagreement will occur, powers granted to the Authorities will enable them to resolve the matter with reference to Community legislation and, in particular, already accepted standards.

### 3.6.3. *Scope of the exercise*

CEBS has identified 101 national options and discretions to be disclosed in its supervisory disclosure framework in accordance with Article 144 of the CRD. The way MS have implemented these options and discretions is disclosed on CEBS' web-site.<sup>212</sup> Additional potential national discretions have been identified by the industry representatives in their responses to CEBS' questionnaire of July 2007. In total, CEBS analysed 152 options and discretions.<sup>213</sup> Annex II provides an insight into extent to which they have been exercised by individual MS. Majority of the national discretions and options can be grouped into the following categories:

- i. national options and discretions reflecting the diversity of domestic market because of local economic or institutional conditions;<sup>214</sup>
- ii. national options and discretions reflecting different supervisory approaches;<sup>215</sup>
- iii. provisions in the CRD under which supervisors shall make a supervisory judgment (based on criteria or some conditions) that are not strictly speaking 'national options', but some MS have implemented these provisions as an option.<sup>216</sup>

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<sup>211</sup> For a presentation of technical standards, please see the Commission staff working document accompanying the draft Council and Parliament Regulation on a European Banking Authority, draft Council and Parliament Regulation on a European Insurance and Occupational Pensions Authority, draft Council and Parliament Regulation on a European Securities and Markets Authority

<sup>212</sup> See <http://www.c-ebs.org/Supervisory-Disclosure/Options-and-national-discretions.aspx>

<sup>213</sup> CEBS proposed to keep as a national discretion only 28% of them with accompanying proposals, i.e., deletion of the option, making an option a general rule, letting the choice of the use of an option to credit institutions for the 65% of the provisions analyzed. Of the 28% that were proposed to be kept, about one third would expire by the end of 2011, meaning that any change in the text of the CRD would have no or limited validity by the time the provision would have been amended through the legislative process.

<sup>214</sup> An example of an 'institutional condition' would be the structure of institutions in a MS, such as local and regional authorities. Accounting treatment, company law, supervisory philosophy, and so on, do not fall into this category. For example, in Annex VI, Part 1, point 15, the Competent Authorities may, in exceptional cases, treat exposures to public sector entities as exposures to the central government in whose jurisdiction they are established where, in their opinion, there is no difference in the risk between such exposures because of the existence of an appropriate guarantee from the central government. In Annex VIII, Part 1, point 28, MS may also recognize as eligible providers of unfunded credit protection, other financial institutions authorised and supervised by competent authorities and subject to prudential requirements equivalent to those applied to credit institutions.

<sup>215</sup> For example, in terms of scope of application, some supervisors make use of solo-consolidation: under Article 70, MS may allow, on a case-by-case basis, for the purpose of the calculation of the individual requirements of the parent institution, and subject to certain conditions, the incorporation of subsidiaries whose material exposures or liabilities are all to that parent institution. Another example is Article 80(3) that allows MS to choose between two alternative methods for risk-weighting exposures to credit institutions: (a) on the basis of the risk-weight of the corresponding central government and (b) on the basis of the credit assessment of the institution itself.



This impact assessment and the legislative proposal that it accompanies do not tackle certain national options and discretions that will be addressed in separate exercises in line with the review clauses specified in the legislation.<sup>217</sup>

Part of the divergence in national rules stems from the fact that the CRD, as explained earlier, is a 'minimum' harmonisation directive, allowing MS to establish stricter rules than those laid down under some of its provisions. 'Regulatory additions' made at national level are threefold:

- i. additions in areas which are not explicitly covered by sectoral legislation (e.g., supervisory provisioning policy that is implemented in some MS);
- ii. additions explicitly allowed in the Directive in areas which lack full harmonisation (e.g., Article 61 on the composition of own funds), or not sufficiently harmonised (e.g., supervision of liquidity in accordance with Article 41); and
- iii. additions in areas which are fully harmonised: the Commission has been informed of the degree to which Member States resorted to 'gold-plating' in a report on the transposition of the CRD in the 27 Member States.<sup>218</sup>

Only the third category of regulatory additions is discussed in this section. The second category is discussed in the context of the problem definition of bank liquidity (section 3.2) and capital definition framework (section 3.3). Other harmonization-related aspects will be tackled at the time of revision or introduction of respective provisions.

#### 3.6.4. *Problems stemming from diverging national rules*

The EU banking market is becoming increasingly integrated: currently around 70% of EU banking assets is in the hands of some 40 banking groups with substantial cross-border activities. Especially in the EU-12, banking markets are dominated by foreign (mostly Western European) financial groups. In these countries, on average 65% of banking assets are held by foreign-owned banks; while in EE, the CZ and SK this statistic is in excess of 92%. However, efficiency of the internal market in wholesale and retail banking services is undermined by divergences in national rules on capital and liquidity requirements.

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<sup>216</sup> For example, in Article 84(2) when IRB approach is used by an EU parent or financial holding company and its subsidiaries, the competent authorities may allow the minimum requirements to qualify for IRB approach to be met by parent and subsidiaries considered together. This is a supervisory decision to be applied on a case basis after considering the features of banks' IRB system, i.e. centralised system/decentralised system.

<sup>217</sup> These include:

- i) options pertaining to provisions on the regulatory treatment of 'large exposures'. CRD II significantly reduced the number of options and discretions, but some options have been left as a result of compromises. The Parliament and the Council agreed to review them by the end of 2011;
- ii) options pertaining to the scope of application (i.e., application of requirements at solo, sub-consolidated and consolidated level), subject to a specific review clause by the end of 2011.

<sup>218</sup> DLA Piper UK LLP, *Study on the Implementation of Directive 2006/48/EC and Directive 2006/49/EC by the 27 Member States*, final report, February 2009.

Examples include the regime of past due items, risk weight of 100% instead 75% for retail exposures, risk-weight of 50 % instead of 35% for residential real estate, concept of loss for operational risk, eligibility criteria for collateral, more sophisticated definition of dilution risk for receivables, restrictive transposition of the use test for IRB banks, restrictive definition of the retail exposure class under the IRB framework, higher capital requirements for foreign currency risk.

*As a result of 'gold-plating', national options and discretions available in the legislation, there is a high level of divergence in how the rules are implemented by MS and subsequently applied by the national supervisory authorities who also have a possibility under certain provisions to exercise judgment or make a choice, thus expanding the scope of national divergences further. These divergences have several consequences:*

- i. Where the legal text does not include criteria on which judgements or choices are made by supervisors, some options and national discretions may result in a lack of legal clarity.
- ii. While all MS have a supervisory treatment that appears to be legally compliant, any given exposure might receive very different treatment from one MS to another. The lack of a consistent approach across the EU is a major concern for industry as the effects of disparate approaches have a direct effect on firms' ability to properly and fairly compete in another MS, leading to an uneven playing field.
- iii. The different rules in different MS also make it more difficult for depositors, investors and other stakeholders to make effective comparisons between the financial situation and stability of credit institutions from different MS, leading to increased market uncertainty especially in situations of financial stress.
- iv. The different application of the legislation in different MS is particularly burdensome for firms operating cross-border. They have to calculate and report different sets of requirements according to the rules of the consolidating supervisor, the supervisor of the subsidiary (or the host supervisor) for national discretions pertaining to the features of a local market which gives rise to additional supervisory reporting costs.
- v. The presence of divergences hampers the development of a single reporting framework in the EU in order to allow cross-border banks to minimize their supervisory reporting costs. In this regard, CRD II requires competent authorities to apply a uniform reporting format by the end of 2012 and EBA is already developing a common reporting framework ('COREP'). However, a uniform reporting format does not mean that the contents of the data to be reported are identical throughout the EU. This is because there is no harmonisation of data definitions which is driven by, among other factors, differences in the CRD implementation and in supervisory approaches because of the proliferation of national options and discretions.

#### *3.6.5. Further problems stemming from treatment of divergences at consolidated level*

Consequences of regulatory divergences are particularly pertinent when considering their treatment at consolidated level. Under the CRD, as a general rule the consolidating supervisor (home competent authority) should apply 'home' country rules at a consolidated level, unless otherwise provided for in the directive. Where rules are not harmonised, this may result in banking groups with a subsidiary in another jurisdiction having to apply diverging rules at a solo level (host country) and at a consolidated level (home country).

There are legal and practical exceptions to this general principle:

- i. Mutual recognition (possible recognition of the host treatment at home level). The CRD provides 18 cases of explicit reference to mutual recognition of national discretions

implemented by another national authority<sup>219</sup> and the supervisory disclosure framework discloses the way those 18 cases of national discretions are applied, and whether MS allow for mutual recognition. Mutual recognition of the host supervisor's national discretion provides some degree of flexibility by allowing at consolidated level the use of local rules and at the same time reduces administrative burdens incurred by the parent credit institution in relation to the subsidiaries. It also allows credit institutions to apply the 'host' treatment for exposures directly held by the credit institution, and thus ensure a level playing field between firms providing services in the same MS. The CRD contains only a limited number of mutual recognition-based provisions. However, mutual recognition of national discretions should not be seen as an optimum or definitive solution, as it might result in embedding national discretions in Community legislation. Mutual recognition only lends itself to national discretions justified because of local or institutional conditions (see above).

- ii. Reporting practices vary from one country/bank to another. Under a 'building' block approach, the consolidating bank aggregates the capital requirements calculated by each legal entity of the group, and therefore essentially bases the calculation of capital requirements on host country rules. This reporting practice comes down to broadly recognising the treatment of host countries (i.e., mutual recognition). In certain circumstances, i.e., when the prudential treatment depends on the booking of an exposure, this reporting practice might lead to regulatory arbitrage.<sup>220</sup>
- iii. The CRD provides the possibility to apply 'home' discretions at 'host' level. This is discussed, on a case by case basis, in colleges of supervisors involving all relevant supervisors of banking groups. In the context of the joint decision for using advanced approaches to credit risk and operational risk, supervisors may decide to apply any blend of 'home' and 'host' discretions. However, due to the number of options and discretions available in the CRD, positions of national authorities with regard to suitability of specific prudential approaches or measures vis-à-vis parts of the group may diverge, hindering efficiency and effectiveness of supervisory cooperation. In case of disagreement, the consolidating supervisor may have the last say.<sup>221</sup> Effectively, mutual recognition under Article 129 delivers banking group-specific outcomes as practices may vary from one college of supervisors to another. This approach may lead to potential problems of different treatment of different cross-border groups, and may have implications for the level playing field in the host jurisdiction.

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<sup>219</sup> For example, regarding the preferential treatment of commercial real estate (i.e. 50% risk weight under Annex VI, Part 1, section 9.2) that MS may allow under specific conditions, when this discretion is exercised by the competent authority of one MS, the competent authority of another MS may allow their credit institutions to risk weight at 50% such exposures fully and completely secured by mortgages on commercial property.

<sup>220</sup> For example, if subject to mutual recognition, the option to risk-weight banks using the assessment of a credit rating agency or the rating of the sovereign may lead to regulatory arbitrage. The risk-weighting of exposures to credit institutions differs depending on whether it is determined (a) on the basis of the risk-weight of the corresponding central government or (b) on the basis of the credit assessment of the institution itself. If a banking group may apply option (a) at solo level in Member State X while its home country (Member State Y) applies option (b), and if option (a) results in lower capital requirements, the group will be incentivised to book its exposure to credit institutions in Member State X.

<sup>221</sup> Article 129(2)

### **3.7. Risks inherent in baseline scenario**

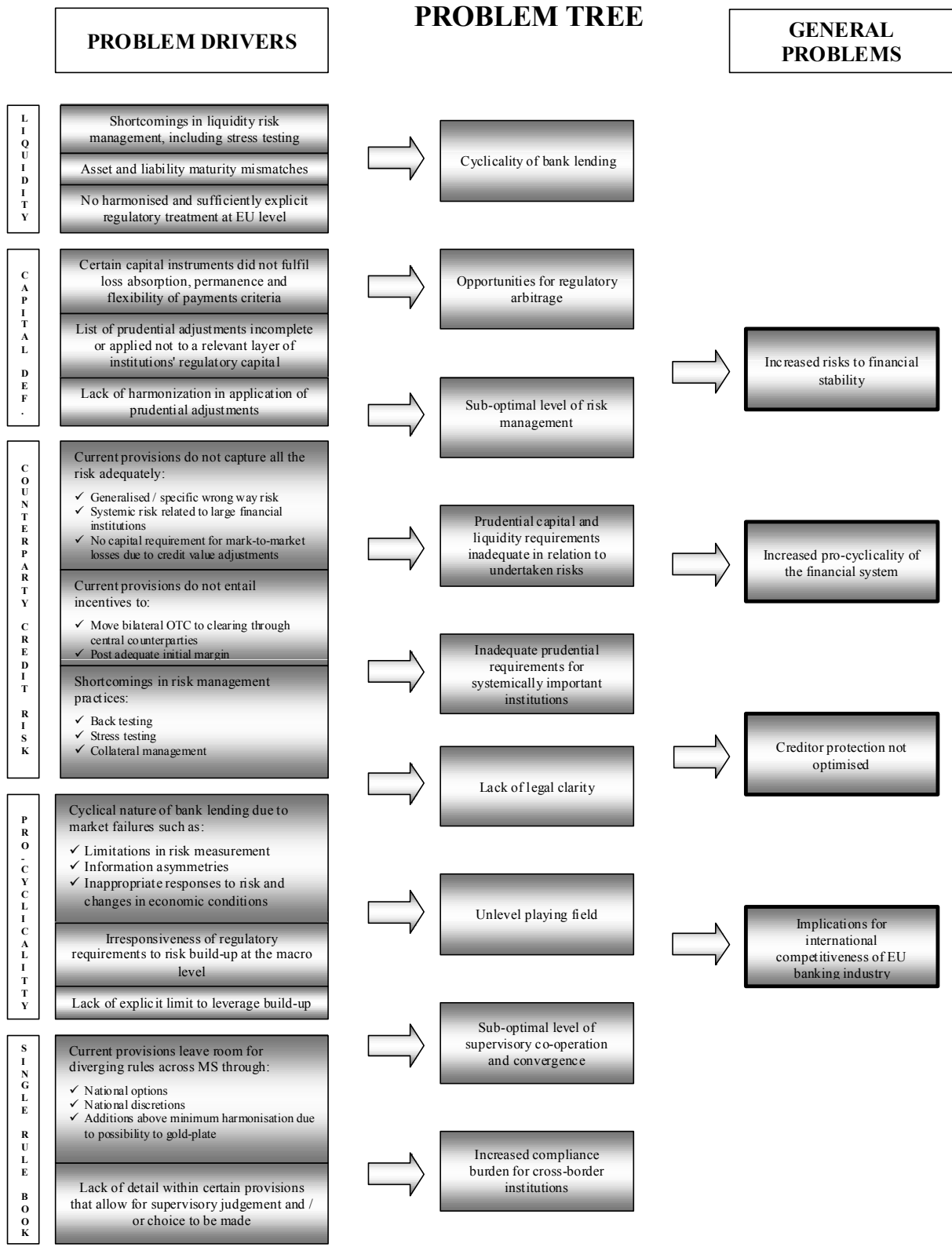
There is a broad international consensus that problems outlined in sections 3.2 - 3.6 individually, and even more so when taken together, played a significant contributing role in exacerbating economic cycle and precipitating extreme financial instability that in turn evoked the global economic recession, damaging soundness and international competitiveness of the EU banking sector and subjecting a wide range of stakeholders, including bank creditors, shareholders, employees, borrowers and taxpayers, to unprecedented economic costs. If no action in these areas is taken, the risk that systemic shocks of a similar scale occur in the future will not be addressed.

### **3.8. Is action necessary at EU level?**

Based on the nature of problems outlined in the above analysis, several major justifications that meet the principle of subsidiarity for action at the EU level become apparent. They include a need to enhance the integration of EU internal banking market (by removing national options, discretions and possibilities to gold-plate), address several market (e.g., in the area of countercyclical policy measures) and regulatory failures (e.g., capital definition and liquidity risk management rules, capital requirements for CCR) that were brought to light by the financial crisis, correct for regulatory arbitrage opportunities which are made possible by the current legislation (due to the availability of certain national options and discretions) and ensure a consistent EU approach for tackling various issues covered by the scope of this report, which would do away with the need for MS to pursue individual approaches that risk fragmenting internal market.

Most importantly, only a common EU-level approach could be expected to effectively provide for financial stability and tame excessive financial pro-cyclicality, as currently policies that are directed toward these key **systemic** aspects are either geared to national needs or are absent altogether. With respect to the latter, the crisis clearly demonstrated the ineffectiveness of the national liquidity risk supervision approaches.

As regards the proportionality of proposed EU actions, it is implicitly assessed in section 5 in the process of comparison of potential policy options in terms of their effectiveness and efficiency vis-à-vis the relevant policy objectives.



#### 4. OBJECTIVES

The overarching goal of this initiative is to ensure that the effectiveness of bank capital regulation in the EU, represented by the CRD, is strengthened and its adverse impacts on depositor protection and pro-cyclicality of the financial system are contained, while maintaining the competitive position of the EU banking industry. This translates into the following four general policy objectives to:

- Enhance financial stability (G-1);
- Enhance safeguarding of depositor interests (G-2);
- Ensure international competitiveness of EU banking sector (G-3);
- Reduce pro-cyclicality in the financial system (G-4).

In light of the problems presented in sections 3.2 - 3.6 five sets (in the areas of liquidity risk management, definition of capital, counterparty credit risk, procyclicality, and single rule book) of operational objectives have been identified to address the applicable problem drivers. Effective realization of such operational objectives should contribute to the achievement of the following longer-term specific policy objectives to:

- Enhance adequacy of capital and liquidity requirements (S-1);
- Enhance bank risk management (S-2);
- Prevent regulatory arbitrage opportunities (S-3);
- Enhance legal clarity (S-4);
- Reduce compliance burden (S-5);
- Enhance level playing field (S-6);
- Enhance supervisory cooperation and convergence (S-7)
- Align prudential requirements for systemically important financial institutions (SIFIs) with the risks that they pose (S-8);
- Reduce cyclicality of bank lending (S-9);

and, in turn, should facilitate the attainment of the four general policy objectives.

Table 4 provides an overview of the linkage between:

- identified problems and drivers underlying them (indicated in italics in the problem definition);
- operational, specific and general objectives to address the problem drivers; and
- policy options to achieve the objectives.

**Table 4: Summary of problems, objectives and policy options**

Problems	Problem Drivers	Operational Objectives	Specific Objectives									General Objectives				Policy Options	
			S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8	S-9	G-1	G-2	G-3	G-4		
			Enhance adequacy of capital and liquidity requirements	Enhance bank risk management	Prevent regulatory arbitrage opportunities	Enhance legal clarity	Reduce compliance burden	Enhance level playing field	Enhance supervisory cooperation and convergence	Align prudential requirements for SIFIs with the risks they pose	Reduce cyclical nature of bank lending	Enhance financial stability	Enhance safeguarding of depositor interests	Ensure international competitiveness of EU banking sector	Reduce pro-cyclicality in the financial system		
<p><b>Liquidity risk management</b></p> <p>- Existing liquidity risk management approaches and supervisory regimes inadequately captured risks inherent to the underlying market practices and trends, contributing to demise of several institutions and strongly undermining health of many others, threatening the financial stability and necessitating unprecedented levels of central bank liquidity and government support.</p> <p>- Differences in national liquidity regimes give rise to level-playing field issues for cross-border firms and hamper effectiveness of supervision as well as cooperation between supervisory authorities.</p>	Shortcomings in liquidity risk management, including stress tests	Ensure that institutions have sufficient high quality liquid assets to withstand an acute stress scenario lasting for 30 days	√	√												1.1-1.3	
	Asset and liability maturity mismatches	Ensure that institutions fund their activities with more stable sources of funding on an ongoing structural basis	√	√							√	√	√	√			2.1-2.3
	No harmonized and sufficiently explicit regulatory treatment at EU level	Develop appropriately explicit and harmonized EU level regime for management of liquidity risk	√				√	√	√								
<p><b>Definition of capital</b></p> <p>- Banking sector – due to the drivers outlined - entered the crisis with reported Tier 1 capital ratios and, thus, capital that were not reflective of banks' capacity to absorb losses on a going-concern basis. As the crisis deepened and banks faced growing losses and writedowns, their fundamental solvency was called into question, leading to broader financial instability and necessitating extensive public sector support</p> <p>- Variations in the definition of Tier 1 capital stemming from differences in application of regulatory adjustments across the MS obstructed its comparability and reliability, leading to market participants' and regulators' focus on alternative measures</p>	Certain capital instruments did not fulfil loss absorption, permanence and flexibility of payments criteria	Enhance loss absorption, permanence and flexibility of payments of going-concern capital instruments	√	√													
	List of regulatory adjustments incomplete or applied not to a relevant layer of institutions' regulatory capital	Enhance loss absorption of regulatory capital by appropriate application of regulatory adjustments from the relevant layers of capital	√	√							√	√	√	√			3.1-3.5
	Lack of harmonization in application of regulatory adjustments	Develop a harmonised set of provisions in the area of definition of capital			√		√	√	√								
<p><b>Counterparty credit risk</b></p> <p>- Existing CRD provisions did not ensure appropriate risk management of financial institutions as well as adequate and non-cyclical regulatory requirements against the counterparty credit risk that materialised during the crisis</p> <p>- Calibration of provisions does not provide sufficient incentives to clear bilateral OTC instruments through central counterparties, leading to lack of confidence and exacerbating instability in times of market stress</p>	Current provisions do not adequately capture counterparty credit risk	Enhance adequacy of capital requirements for the counterparty credit risk	√	√													
	Current provisions do not entail incentives to move bilateral OTC to clearing through central counterparties and to post adequate initial margin	Provide incentives to move bilateral OTC to clearing through central counterparties and to post adequate initial margin		√								√	√	√	√		4.1-4.3
	Shortcomings in risk management practices as regards back testing, stress testing and collateral	Enhance bank risk management practices		√													

Problems	Problem Drivers	Operational Objectives	Specific Objectives									General Objectives				Policy Options	
			S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8	S-9	G-1	G-2	G-3	G-4		
			Enhance adequacy of capital and liquidity requirements	Enhance bank risk management	Prevent regulatory arbitrage opportunities	Enhance legal clarity	Reduce compliance burden	Enhance level playing field	Enhance supervisory cooperation and convergence	Align prudential requirements for SIFIs with the risks they pose	Reduce cyclical volatility of bank lending	Enhance financial stability	Enhance safeguarding of depositor interests	Ensure international competitiveness of EU banking sector	Reduce pro-cyclicality in the financial system		
	management																
<b>Procyclicality of lending</b> - Lack of a limit to leveraging capital and irresponsiveness of regulatory capital requirements to the build-up of risk at the macro level led to accumulation of financial imbalances which, once the economic cycle turned, prompted a de-leveraging spiral and precipitated steep credit-related losses - Inappropriate responses to risk and other market failures contribute to leverage build-up and a concomitant overextension of credit in the economic upturn and cause banks to maintain generous discretionary distributions during periods of stress, when capital should be conserved	Market failures, including limitations in risk measurement, information asymmetries and inappropriate responses to risk and changes in economic conditions Irresponsiveness of regulatory requirements to risk build-up at the macro level Lack of explicit limits to leverage of credit institutions	Introduce an explicit limit on banks capacity to leverage their capital	√	√												5.1-5.3	
		Improve banks' capacity to absorb losses over periods of stress and still meet the minimum regulatory capital requirement	√	√								√	√	√	√		6.1-6.4
		Protect banking sector from excessive credit growth and build-up of risks at the macro-level while ensuring credit flow to the economy in the economic downturn	√	√								√					
<b>Options, discretions and minimum harmonisation</b> - Diverging national rules allow for competitive distortions in the Internal Market and lead to a fragmented and inconsistent financial supervision, impeding legal clarity and resulting in excessive administrative burden for cross-border banks - Mutual recognition of 'host' MS treatment at consolidated level creates opportunities for regulatory arbitrage; application of 'home' MS discretions at 'host' level hinders supervisory cooperation and risks delivering group-specific prudential treatment that may hamper level playing field	Diverging national rules due to the inclusion in the CRD of a number of national options and discretions Gold-plating of the current provisions	Remove national options and discretions in the CRD			√	√	√	√									
		Remove regulatory additions above the agreed minimum standards			√	√	√	√									
	Lack of detail within certain CRD provisions that allow for supervisory judgement and / or choice to be made	Make provisions allowing for supervisory judgement and / or choice more specific				√	√	√	√			√	√	√			7.1-7.4



## 5. POLICY OPTIONS: ANALYSIS AND COMPARISON

This section presents the policy options and their impacts for each policy area individually. Due to the number of areas covered, the analysis of policy options and the comparison thereof have been combined for each area. Cumulative impacts of all preferred options are discussed at the end of the section.

While presentation of options in each policy area includes a 'retain current approach' scenario which usefully serves as a baseline for assessing impacts of alternative policy options (and reflects the standard methodology of conducting impact assessments at the Commission), it needs to be kept in mind that sections 5.1-5.5 pertain to proposals linked to Basel III that were developed by the Basel Committee with the active participation of the Commission services, on behalf of all 27 EU MS.

Details of the new framework were fleshed out by the Basel Committee in December 2010. Policy options pertaining to the new liquidity measures are analysed in section 5.1. As regards the new capital requirements, respective policy options are discussed in sections 5.2-5.5. The calibration, including phase-in and grandfathering arrangements, of Basel III is shown in Tables 5 and 6 below. However, EU MS will be allowed to 'gold-plate' the new minimum requirements during the phase-in period, which means that they can apply already in 2013 the level of capital required by Basel III in 2019.

**Table 5:** Calibration of Basel III, in % of RWAs

	Common Equity (after deductions)	Tier 1 Capital	Total Capital
Minimum requirement	4.5	6.0	8.0
Conservation buffer	2.5		
Minimum requirement plus conservation buffer	7.0	8.5	10.5
Countercyclical buffer range <sup>1</sup>	0-2.5		

Notes: <sup>1</sup> Common equity or other fully loss absorbing capital

Source: Basel Committee

**Table 6:** Transitional arrangements for Basel III framework (all dates are as of January 1)

Policy measure	2011	2012	2013	2014	2015	2016	2017	2018	2019
Leverage ratio	Supervisory monitoring		Parallel run Disclosure starts on 1/1/2015					Migration to Pillar 1	
Minimum common equity (CET1) capital ratio			3.5%	4.0%	4.5%	4.5%	4.5%	4.5%	4.5%
Capital conservation buffer						0.625%	1.25%	1.875%	2.5%
Minimum common equity plus capital conservation buffer			3.5%	4.0%	4.5%	5.125%	5.75%	6.375%	7.0%
Phase-in of deductions from CET1				20%	40%	60%	80%	100%	100%
Minimum Tier 1 capital			4.5%	5.5%	6.0%	6.0%	6.0%	6.0%	6.0%
Minimum total capital			8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
Minimum total capital plus capital conservation buffer			8.0%	8.0%	8.0%	8.625%	9.25%	9.875%	10.5%
Capital instruments no longer qualifying as non-core Tier 1 capital or Tier 2 capital			Phased out over a 10 year period beginning 2013						
Liquidity Coverage Ratio	Observation period begins				Introduce minimum standard				
Net Stable Funding Ratio	Observation period begins							Introduce minimum standard	

Source: Basel Committee

It needs to be stressed that the calibration of the new minimum capital requirements was determined by taking into account the impact that the new policy measures would have on the numerator (i.e., definition of eligible capital) and the denominator (i.e., measures affecting risk weighted assets) of the ratios. Therefore, analyses underpinning the phase-in arrangements and the calibration of the new rules are presented after preferred policy options relevant for the calculation of the ratios have been identified (in line with the approach followed by the Basel Committee).

## **5.1. Liquidity risk**

To address the problems in the area of liquidity risk management, the Commission services in its February 2010 consulted publicly on the two key potential policy measures: Liquidity Coverage Ratio and Net Stable Funding Ratio.

### *5.1.1. Liquidity Coverage Ratio*

To address shortcomings in liquidity risk management and to improve short-term resilience of the liquidity risk profile of financial institutions by ensuring that they have sufficient high quality liquid assets to withstand an acute stress scenario lasting for 30 days, the Commission services proposed to introduce a Liquidity Coverage Ratio (LCR). Main policy options in this area are as follows:

- **Policy option 1.1:** Retain current approach;
- **Policy option 1.2:** Introduce LCR as specified in the February 2010 public consultation;
- **Policy option 1.3:** Introduce LCR adopted by the Basel Committee subject to observation period.

#### *Policy option 1.1: Retain current approach*

Under this policy option, problems related to short-term liquidity risk management, as outlined in section 3.2 may not be entirely addressed. While tightening of national liquidity regimes may provide for a degree of increased effectiveness with respect to management and supervision of risks discussed in this section, there is no guarantee that necessary progress would be achieved quickly enough and evenly across the EU. Given the recently agreed Basel liquidity standards, it may be expected that under this policy option individual MS would adopt these sounder standards for a few of their largest banks. Other MS may pursue different alleys for strengthening liquidity regimes and others again may not act at all. This scenario is likely to lead to further divergence of standards within Europe, creating opportunities for regulatory arbitrage and un-levelling the playing field.

#### *Policy option 1.2: Introduce LCR as specified in the February 2010 public consultation*

LCR would require credit institutions to match net liquidity outflows during a 30 day period of acute stress with a buffer of 'high quality' liquid assets. The net liquidity outflows during the period of stress would be completely defined in the CRD, detailing inter alia what percentage of a given source of funding a credit institution has to assume would be withdrawn from it (see Annex IV). The outflows covered would also include those resulting from liabilities and contingent liabilities, both contractual and non-contractual, coming due and would reflect both institution-specific and systemic shocks built upon actual circumstances experienced in the global financial crisis which, as outlined in section 3.2, may include events such as:

- downgrade in the institution's public credit rating;
- run-off of a proportion of retail deposits;
- loss of unsecured wholesale funding capacity;
- loss of secured, short-term financing transactions for all but high quality liquid assets;
- increases in market volatilities that have an impact on the quality of collateral or potential future exposure of derivatives positions and thus require larger collateral haircuts or additional collateral; and
- a need for the institution to provide funding to honour non-contractual obligations in the interest of mitigating reputational risk.

The regulatory list of high quality liquid assets (for specific definitions of the 'buffer of high quality liquid assets' see Annex IV) to cover these outflows should ensure that these assets:

- have low credit and market risk: assets which are less risky tend to have higher liquidity. As regards the credit risk, high credit standing of the issuer and a low degree of subordination increases an asset's liquidity. As regards market risk, low duration<sup>222</sup>, low volatility, low inflation risk and denomination in a convertible currency with low foreign exchange rate risk all enhance an asset's liquidity;
- have ease and certainty of valuation: an asset's liquidity increases if market participants are more likely to agree on its valuation. A liquid asset's pricing formula must be easy to calculate and not depend on strong assumptions. Market participants should have similar views about inputs into those pricing formula, for instance due to public availability thereof;
- have low correlation with risky assets: the stock of high quality liquid assets should not be subject to a wrong-way risk. For instance, assets issued by financial firms are more likely to be illiquid in times of liquidity stress in the banking sector;
- be listed on a developed and recognised exchange market: being listed increases an asset's transparency;
- have active and sizable market: the asset should have active outright sale and repo markets at all times (which means having a large number of market participants and a high trading volume). Market breadth<sup>223</sup> and market depth<sup>224</sup> should be good;
- have presence of committed market makers: quotes will always be available for buying and selling the asset;
- have low market concentration: diverse group of buyers and sellers in an asset's market increases the reliability of its liquidity;
- are likely to attract flight to quality in stressed market conditions: historically, the market has shown tendencies to move into some types of assets in a systemic crisis.

As regards the buffer of high quality liquid assets, the Commission services consulted on the impact of both a narrow regulatory definition of liquid asset buffer composed of cash, central bank reserves and high quality sovereign debt, as well as a somewhat broader definition which could also include non-financial corporate bonds and covered bonds of high quality, i.e., those rated AA and above with a 20% haircut and those rated A- up to AA- with a 40% haircut, up to 50% of the buffer.

In order to strengthen the resilience of European credit institutions against liquidity risk and to introduce a harmonised regulatory measure at European level, the standards would apply at the level of individual legal entities. Application at individual entity level within European

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<sup>222</sup> Price sensitivity of a fixed income security to changes in interest rate

<sup>223</sup> Price impact per unit of liquidity

<sup>224</sup> Units of the asset that can be traded for a given price impact

groups is desirable so long as constraints on the transferability of assets, mutual support commitments and central liquidity risk management within groups continue to apply. The envisaged scope of application takes account of the fact that liabilities have to be repaid by legal entities in principle and that the liquidity to meet the resulting outflows should be available at the legal entity level. However, application to individual firms could be waived by competent authorities provided that it is possible to identify a set of institutions belonging to the same group to which the requirements can be meaningfully applied on a consolidated basis because liquidity risks are managed centrally in the group, there are legally binding mutual commitments for liquidity support between the relevant institutions and assets are freely transferable between legal entities even when under stress. Where these conditions are met, the requirements would be applied on a consolidated level only to the entities belonging to a group.

Individual legal entity level application would be complemented by application at the full consolidated level in order to ensure a sound liquidity position of the overall group and to facilitate alignment with international standards that will expect internationally active banks to report their consolidated liquidity position.

In contrast to areas that are related to capital, liquidity data in a quantitative impact study were collected for the first time. Because in this area different MS currently apply different standards, banks were not familiar with standardised data requests. Hence, the classification of liquidity risk positions as required in the QIS did not necessarily match their classification at banks internally or for MS prudential reporting purposes which made gathering and splitting the data into required regulatory sub-categories for participating banks difficult. QIS results on liquidity, thus, should be interpreted as a directional tool to assess calibration-driven changes rather than a precise estimate of actual quantitative impact.

These difficulties also point in the direction of possibly significant one-off compliance costs related to information provision, i.e., administrative costs (see section 5.8.3) when migrating to the new standards. However, given that the same type of information would be needed for individual legal entity level application and also considering that the standards would be for the first time fully harmonised across the EU, it may be expected that there would be important ongoing cost savings for cross-border groups that currently typically have to report on individual legal entity basis (and even separately at the level of branches that do not have a legal personality) according to very diverse *national* regimes and, in addition, on a consolidated basis according to their home country regime. Hence, administrative costs due to EU legislation, as discussed in section 5.8.3 should be offset by savings of administrative costs due to national reporting requirements. On top of that, harmonised reporting would facilitate communication between supervisors of the different legal entities of a group.

EU QIS showed that as of December 2009 under the narrow definition of liquid asset buffer, average LCR was 52.4% and 74.1% for Group 1 and Group 2 banks, respectively. Under the broader definition of liquid asset buffer, average LCR improved by some ten percentage points for both groups.

Feedback from numerous public consultations showed that the narrow liquid asset buffer, however, does not address the situation of jurisdictions such as DK that may not have sufficient supply of eligible assets. Most respondents to the consultations also claimed that the 'narrow' buffer definition entails the concentration risk of specific asset classes while labelling bank (covered) bonds as illiquid would hamper bank ability to raise funds. Refinements were deemed to be necessary also as regards assumptions used to estimate several categories of net

liquidity outflows (the denominator), for instance, to recognize that central bank-eligible assets that are not part of the liquid asset buffer and retail deposits constitute a better source of liquidity than assumed by this option. Public authorities of certain MS, on contrary, were in favour of a 'narrow' asset buffer on the grounds of financial stability.

*Policy option 1.3: Introduce LCR adopted by the Basel Committee subject to observation period*

Policy option 1.3 reflects the specification of LCR announced by the Basel Committee in its Basel III rules text in December 2010. It takes into account the above mentioned concerns and recalibrates the LCR requirement by building as follows on the 'narrow' definition of liquid asset buffer under policy option 1.2:

- Narrow liquid asset buffer is broadened to include: i) non-financial corporate and covered bonds not issued by the bank itself of high credit and liquidity quality with a 15% haircut and ii) exposures to sovereign and public sector entities, central banks that are risk-weighted at 20% under the CRD with a 15% haircut. The inclusion of these assets (termed 'Level 2' assets) is capped at 40% of the liquid asset buffer.<sup>225</sup> Level 2 assets are also of very high liquidity, but possess the properties of high quality liquid assets listed above to a somewhat lesser extent. However, they generally generate higher yield and holding them is therefore more attractive for banks. The limit on these assets would ensure that assets of the very highest quality make up the majority of the buffer while allowing banks some flexibility to improve the profitability of their liquid asset holdings.

- Determination Level 2 assets: this option foresees that before 2015, a range of qualitative and quantitative criteria to determine high credit and liquidity quality and to determine to which of the two levels in the buffer individual assets should be assigned will be tested by EBA with a view to advising the Commission on the appropriate set and calibration of such criteria. Preliminary criteria have been set by the Basel Committee that put particular emphasis on assets' external ratings, but the testing of alternative criteria should, before 2015, allow for identification of final criteria that place more emphasis on experienced liquidity and less on such ratings.

- This option entails three alternatives to accommodate the specific situation of jurisdictions that do not have a sufficient supply of Level 1 assets in their domestic currency to meet the aggregate demand of banks with significant exposures in this currency. However, its Level 2 cap of 40% is lower than that of the broader buffer definition under option 1.2.

- 'Stable'<sup>226</sup> retail and SME deposit run-off rate is reduced to 5%, while that of 'less stable'<sup>227</sup> deposits to 10%, from 7.5% and 15% under option 1.2, respectively. It is difficult to find evidence of empirical run-off rates that is not very dependent on individual circumstances, not least relating to the deposit guarantees afforded by the public sector to retail depositors. Given the further harmonisation and improvement of legal depositor protection in the EU, lower run off rates appear justified in tendency, not pretending that there was a unique 'right' level of these run-off rates.

- Roll-off for unsecured deposits from sovereigns, public sector entities and central banks is reduced to 75% as opposed to 100% under option 1.2. For secured funding received from these entities, this option recognises that they are likely to continue to roll-over secured

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<sup>225</sup> Whereas assets that qualify for the 'narrow' definition of liquid asset buffer are termed 'Level 1' assets

<sup>226</sup> See Annex IV for definition

<sup>227</sup> Less stable deposits could include deposits which are not covered by effective deposit insurance, high value-deposits, deposits of sophisticated or high net worth individuals and deposits which can be withdrawn quickly and foreign currency deposits, as determined by each jurisdiction

funding during a time of stress, and for secured funding backed by assets that would not be included in the buffer of liquid assets, assumes a 25% roll-off of funding. This addresses concerns of stakeholders that central bank-eligible assets should be included in the proposal by allowing a bank to count the majority of any central bank funding it has obtained as stable funding, and therefore to increase its stock of liquid assets by monetising less liquid collateral at the central bank, to the extent that the central bank has already provided that funding.

- Secured funding: outflow and inflow haircuts are aligned with Level 1 and Level 2 buffer asset haircuts.

- Undrawn committed facilities: this option assumes 5% run-off on credit and liquidity lines to retail and SME customers, down from 10% under option 1.2. It also applies a 10% run-off for credit lines and 100% run-off for liquidity lines to sovereigns, central banks, and public sector entities (in addition to non-financial corporates).

- This option also establishes a harmonised treatment of net inflows rather than leaving their determination to bank discretion, making the standards less dependent on individual banks' ability to model risks and assumptions. Banks are assumed to realise inflows of 100% from their lending to other financial institutions, but should, due to the need to continue providing lending to firms and households, only assume 50% of the inflows contractually due from these counterparties. Importantly, to ensure a minimum level of liquid asset holdings, the amount of inflows that can offset outflows is capped at 75% of total expected cash outflows as calculated in the standard. This effectively requires that a bank must maintain a minimum amount of stock of liquid assets equal to 25% of the outflows in order to cover potential timing mismatches between inflows and outflows during the 30 days and possible delays of inflows under stress.

- For operational activities with financial institution counterparties, this option creates a 25% outflow bucket for custody and clearing and settlement activities, as well as selected cash management activities. These activities would require specific supervisory approval before the funds specifically related to those activities could be considered 'operational', i.e., not all funds from a counterparty would qualify. The bank that has deposited the operational deposits would receive no inflow recognition for those deposits, as they would be expected to remain at the other bank during a time of stress because for those operational deposits, the depositing bank would find it impossible to withdraw significant funds without compromising its own ability to operate. Importantly to the EU, similar treatment is given to mutual deposits of cooperative and other types of bank networks.

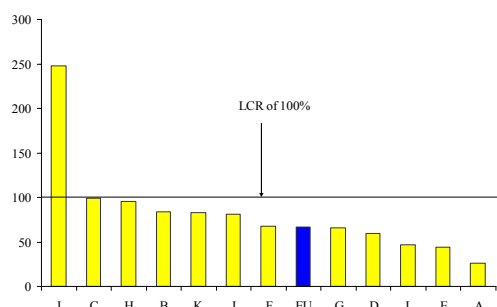
Similarly to policy option 1.2, the standards would apply at the level of individual legal and consolidated entities. This is in alignment with Basel III rules since they outline treatment at the consolidated group level while leaving the implementation at the sub-group and stand-alone bank levels to discretion of its members, in order to ensure greater consistency and level playing field between domestic and cross-border banks.

The Commission will, based on a report from EBA and taking into account the contribution of ESRB, review before 2015 whether the ratio has any unintended consequences on the business and risk profile of European institutions, trade finance, financial markets and the economy. The Commission should be able to modify the ratio accordingly as appropriate via a delegated act. A mechanism would be built into the CRD IV proposal ensuring that the ratio will only apply after the Commission has concluded its review and has made the necessary modifications, if any.

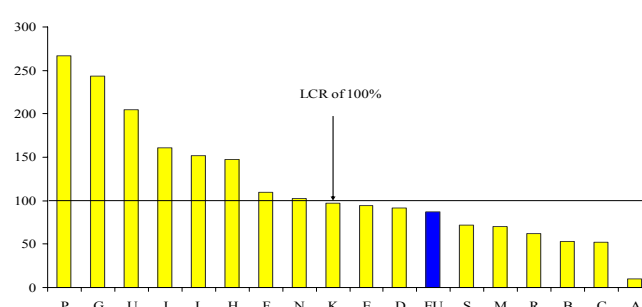
Under this policy option, average EU LCR is 66.5% for Group 1 banks and to 87.1% for Group 2 banks, comparable to the LCR averages of the broader buffer definition under option 1.2. In terms of distributional impacts with respect to bank size, Charts 4 and 5 show that

under this option the impact is less pronounced for smaller (i.e., Group 2) banks in most of the MS. In terms of implications of this policy option on banks from other major international jurisdictions that are large and active abroad, the EU Group 1 LCR average is lower than that of a sample of 84 large international banks from twenty members of the Basel Committee (including eight EU MS) that as of December 2009 stood at 82.9%.<sup>228</sup>

**Chart 4:** Distribution of LCR for Group 1 banks, in %: country averages



**Chart 5:** Distribution of LCR for Group 2 banks, in %: country averages



**Notes:** LCRs are capped at 400%. EU averages for both Group 1 and Group 2 banks include data for three additional countries that are not shown individually.

**Source:** CEBS

The combined shortfall of liquid assets to meet the LCR threshold of 100%, calculated as a sum across individual banks where a shortfall is observed, for Group 1 and Group 2 banks that participated in the QIS, is about €1 trillion under this policy option (see Chart 6), equivalent to €1.6 trillion when extrapolated to the entire EU banking sector. As regards the aggregate supply of liquid assets in the economy, when the above purchases of liquid assets are financed by new equity of banks, this may effectively represent a switch between the direct holdings of such assets by ultimate investors with the indirect ones (through holding bank equity). Yet there may not necessarily be a big effect on the aggregate assets in the economy, as ultimately all securities would continue to be held - directly and indirectly – by the ultimate investors, including bank shareholders. Liquid asset shortfalls shall also not be confused with related bank costs which stem from the foregone return on assets, i.e., the difference between average return on loans and average return on assets included in the buffer.

The LCR could lead to a contraction of the interbank market for short-term maturity. There is also the risk of a potential reduction in the liquidity – and therefore maybe an increase of costs – of instruments excluded from the buffer, such as ABS or foreign currency swaps, as they would be relatively disregarded by banks. Nevertheless, incentivising banks to find alternative sources of funding is a key step to enhance financial stability, reduce the reliance of the banking industry on such (wholesale) markets and limit the contagion channels.

If the averages of Group 1 and Group 2 banks are weighted based on their share of RWAs, EU banking industry's LCR can be approximated at 74% under this policy option, from which an implicit increase of 34% in the buffer of eligible liquid assets to achieve compliance with the LCR of 100% can be derived.<sup>229</sup> The resultant impact on bank lending and the economic output can be assessed based on the work of the Macroeconomic Assessment Group (MAG) of the Basel Committee.<sup>230</sup> In its analysis of transitional costs of the new rules, MAG estimated that tightening of the liquidity requirement, consisting of a 25% increase in

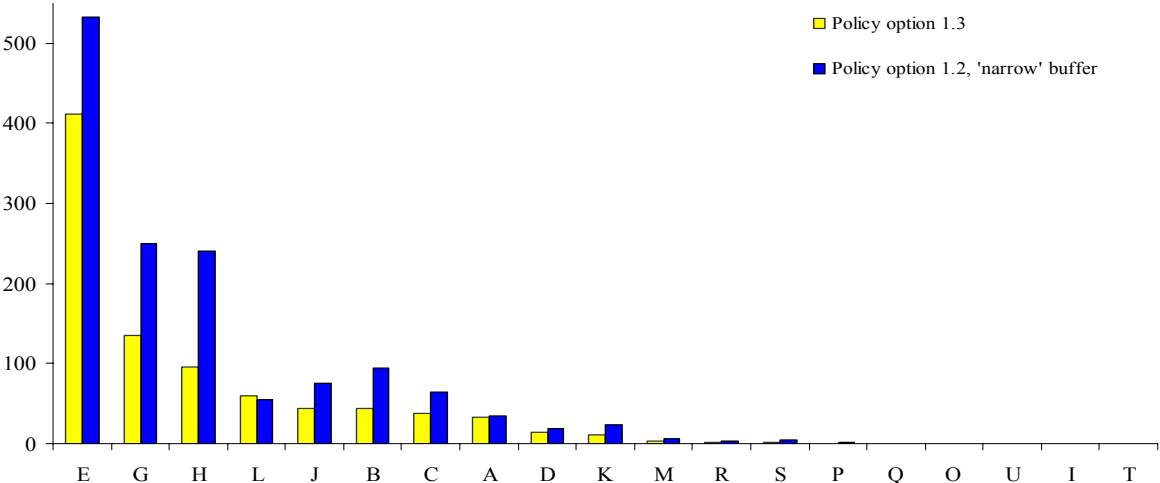
<sup>228</sup> Source: QIS on the impact of Basel III reforms on the BCBS' countries

<sup>229</sup>  $100\%/74\%-1=34\%$

<sup>230</sup> See <http://www.bis.org/publ/othp10.pdf?noframes=1>

holdings of liquid assets to total assets ratio, produced a median increase in lending spreads of 14 basis points and a fall in lending volumes of 3.2% after four and a half years, associated with a median decline in the GDP of 0.08% below the baseline. Hence, impact on the EU GDP due to the introduction of the LCR can be approximated to a decline in GDP of 0.11% over the period of four and a half years, compared to the baseline trend.<sup>231</sup>

**Chart 6:** Liquidity shortfall for Group 1 and Group 2 banks combined as of December 2009, in € million



**Notes:** Country H, L and N totals include shortfalls only for Group 2 banks (Group 1 banks removed based on request of national supervisors). No LCR shortfalls estimated for countries U, I, T under both policy options.

**Source:** CEBS

Despite the costs that the implementation of new liquidity requirements may entail for some institutions in a transition period, the new framework should be understood as an insurance scheme securing the stability of individual institutions and eventually of the financial system as a whole. The new measures should be able to address the pro-cyclicality and volatile patterns of banks' unregulated liquidity management: on the one hand, underestimated risks when liquidity is cheap and easily available and, on the other hand, rapid contagion and loss of confidence in crisis situation due to the asymmetry of information and insufficient liquidity reserves.

Analysis of the Basel Committee of the long-term economic benefits of the new rules showed that increases in liquid asset holdings of 50% for the average bank reduces the estimated probability a systemic banking crisis by 1.1 percentage points (from 2% to 0.9%) when bank capitalisation is kept constant at 9%.<sup>232</sup> Therefore, estimated increase in liquid asset holdings of 34% by the EU banking industry can be assumed to reduce the probability of a systemic crisis by some 0.8 percentage points (or 40%), equivalent to annual GDP benefits of 0.14% to 0.48% under the 'no permanent effect' and 'moderate permanent effect' scenarios, respectively (please see section 5.8.5 for more on the analysis of long-term economic benefits by the Basel Committee).

<sup>231</sup> Assuming liquid asset share is increased while total assets do not change. However, if meeting the LCR did not affect the amount of assets not eligible for the LCR buffer, then the above effect would be smaller, as the liquid to total asset ratio would increase by less than 34%.

<sup>232</sup> When measured as tangible common equity (TCE) to RWAs under Basel I and II definitions. This is equivalent to the average of some 6% CET1 ratio that the EU banks would have after the application of Basel III provisions



### Comparison of policy options

Retaining the current scenario (option 1.1), implies that problems related to short-term liquidity risk management, as outlined in section 3.2, may not be addressed effectively, depending on the actions taken in this area by national supervisors and/or the industry. While tightening of national liquidity regimes may provide for a degree of increased effectiveness with respect to regulation (objective S-1) and bank management (objective S-2) of risks discussed in this section, there is no guarantee that necessary progress would be achieved quickly enough and evenly across the EU.

While both policy options 1.2 (LCR as specified in the February 2010 public consultation) and 1.3 (LCR developed by the Basel Committee subject to observation period) entail effective approaches with respect to contributing to the achievement of relevant objectives S-1 (Enhance adequacy of capital and liquidity requirements) and S-2 (Enhance bank risk management) as well as G-1 (Enhance financial stability) and other relevant general objectives, option 1.3 is more effective due to its more precise calibration of a number of elements relevant for the calculation of LCR. While these two options are comparable in terms of compliance costs for the industry, policy option 1.2 (i.e., its version of the broader buffer definition) is more efficient than option 1.3 in terms of achieving the above objectives. Option 1.2 has a higher cap for additional assets eligible for the liquid asset buffer and generally could be better tailored to the EU specificities both in terms of the numerator and the denominator given that they would entirely be defined in the CRD. As such, it would impose lower adjustment costs on both the industry, and via indirect impacts, on other economic agents. Given its superior effectiveness as regards the relevant policy objectives, however, policy option 1.3 is identified as a preferred option.

**Table 7:** Summary of policy option effectiveness and efficiency

Policy Option	Policy Option Comparison Criteria			
	Effectiveness			Efficiency
	Enhance adequacy of capital and liquidity requirements [S-1]	Enhance bank risk management [S-2]	Enhance financial stability [G-1]	
1.1 Retain current approach	3	3	3	3
1.2 Introduce LCR as specified in the February 2010 public consultation	2	2	2	1
1.3 Introduce LCR adopted by the Basel Committee subject to observation period	1	1	1	2

Scale of option ranking: 1=most effective / efficient, 3=least effective / efficient

Effectiveness measures extent to which options achieve relevant objectives

Efficiency measures extent to which objectives can be achieved for a given level of resources

#### *5.1.2. Net Stable Funding Ratio*

To address shortcomings in funding liquidity risk management by requiring institutions to achieve and maintain a sound funding structure over a one year horizon, the Commission services propose to introduce a Net Stable Funding Ratio (NSFR). Main policy options in this area are as follows:

- **Policy option 2.1:** Retain current approach;
- **Policy option 2.2:** Introduce NSFR as specified in the February 2010 public consultation;
- **Policy option 2.3:** Introduce NSFR adopted by the Basel Committee.

#### Policy option 2.1: Retain current approach

Under this policy option, funding problems arising from asset - liability maturity mismatch, as outlined in section 3.2, may not be entirely addressed. While tightening of national liquidity regimes may provide for a degree of increased effectiveness with respect to management and supervision of risks discussed in this section, there is no guarantee that necessary progress would be achieved quickly enough and evenly across the EU. Given the recent agreements by the Basel Committee in this area, it may be expected that under this policy option individual MS would pursue these sounder standards for a few of their largest banks. Other MS may follow different alleys for strengthening liquidity regimes and others again may not act at all. Thus, this scenario would likely lead to further divergence of standards within Europe, creating opportunities for regulatory arbitrage and un-levelling the playing field.

*Policy option 2.2: Introduce NSFR as specified in the February 2010 public consultation*

The NSFR would require credit institutions to maintain a sound funding structure over the one-year horizon in an extended firm-specific stress scenario where an institution encounters and investors and customers become aware, for instance, of a significant decline in its profitability or solvency, a potential downgrade in its debt, counterparty credit or deposit rating or a material effect that calls into question its reputation or credit quality.

To the above end, the assets currently funded and any contingent contractual and non-contractual obligations to fund would have to be matched to a predetermined extent, depending on their liquidity profile at a one year horizon (reflected in the so-called 'required stable funding factors'), with sources of funding that can be considered stable over the same one year horizon.<sup>233</sup> The required stable funding factors and the degree to which sources of funding can be considered stable would be set out in the CRD. Annex V contains specifications of both sources of stable funding (the numerator) and the required stable funding for various asset types (the denominator) of the ratio, as outlined by the Commission services in its public consultation of the February 2010.

In terms of level of application, the approach envisaged for the LCR above would pertain to the NSFR as well, i.e., the NSFR would apply at the level of individual legal and consolidated entities.

As already mentioned in the analysis of the LCR, liquidity data were collected for the first time in a QIS which meant that banks were not familiar with standardised data requests in this area. Hence, QIS results as regards the NSFR should be seen as a directional tool to assess calibration-driven changes rather than a precise estimate of actual quantitative impacts of the new standard. This may also contribute to possibly significant compliance costs related to information provision, i.e., administrative costs (see section 5.8.3) under this policy option.

EU QIS showed that as of December 2009 the average NSFR for Group 1 was 79.8%. No country was, on average, able to meet the requirement under this policy option, with the MS observing ratios in the range of 60.6% to 97.2%. A wider range of results across countries was observed for Group 2 banks (43.4% - 155.7%), while the average NSFR of 83.7% was slightly higher than that of the sample of Group 1 banks. The combined shortfall of stable funding to meet the NSFR threshold of 100%, calculated as a sum across individual banks

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<sup>233</sup> The required stable funding factors assigned to various types of assets are parameters intended to approximate the amount of a particular asset that could not be monetised through sale or use as collateral in a secured borrowing on an extended basis during a liquidity event lasting one year. Such amounts are expected to be supported by stable funding.

where a shortfall was observed, for Group 1 and Group 2 banks participating in the QIS was about €3.4 trillion under this scenario (see Chart 9).<sup>234</sup>

Feedback from numerous public consultations showed that this policy option, however, requires further refinements with respect to definition of available stable funding factors (the numerator of the ratio) and required stable funding factors as regards certain asset types (the denominator of the ratio) and that it may also distort incentives across business models, in particular, as regards retail versus wholesale banking.<sup>235</sup> With respect to the latter, some respondents called for the phasing in of the ratio to allow banks for adjusting their business models. As a result, while this policy option may be effective in achieving relevant specific objectives, such as S-1 (Enhance adequacy of capital and liquidity requirements) and S-2 (Enhance bank risk management), it would do so with certain unwelcome distributional effects across banking business models and with overall higher than warranted compliance costs for the industry and, through indirect effects, other economic agents.

### Policy option 2.3: Introduce NSFR adopted by the Basel Committee

Policy option 2.3 reflects the specifications of NSFR announced by the Basel Committee in its Basel III rules text in December 2010. It takes into account the above mentioned concerns and recalibrates the NSFR requirement by *raising* the *available stable funding factor* for 'stable' and 'less stable' retail and SME deposits and *lowering* the *required stable funding factors* for i) residential mortgages and other loans that qualify for the 35% or better risk weight under Basel II standardised approach for credit risk, ii) government and public sector entity securities with risk-weight of 20% under the CRD, and iii) certain off-balance sheet commitments.<sup>236</sup>

Under this policy option, average NSFR is higher for most countries when compared to policy option 2.2, and the EU average NSFR rises to 91.1% for Group 1 banks (with four MS on average meeting the requirement) and to 93.9% for Group 2 banks. In terms of distributional impacts with respect to bank size, Charts 7-8 show that under this option the impact is generally less pronounced for smaller (i.e., Group 2) banks.

In terms of implications of this policy option on banks from other major international jurisdictions that are large and active abroad, the EU Group 1 NSFR average is comparable to that of a sample of 85 large international banks from twenty members of the Basel Committee (including eight EU MS) that as of December 2009 stood at 92.7%.<sup>237</sup>

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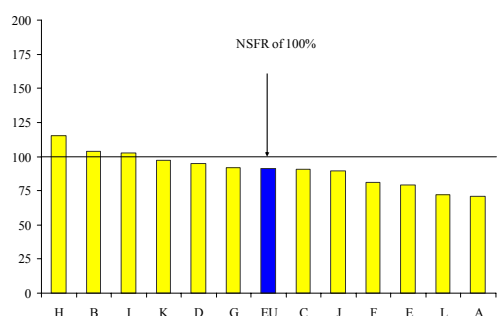
<sup>234</sup> Expected shortfall shall not be confused with related bank costs which may stem (depending on actions taken by banks to comply with the requirement) from substituting sources of funding with lower available stable funding factors with those with higher available stable funding factors.

<sup>235</sup> Respondents claimed that banks being dependent on capital markets would be given a better ratio than retail deposit banks which have been stable. It was also recognised that NSFR might favour broker / dealers while penalising the universal banking model.

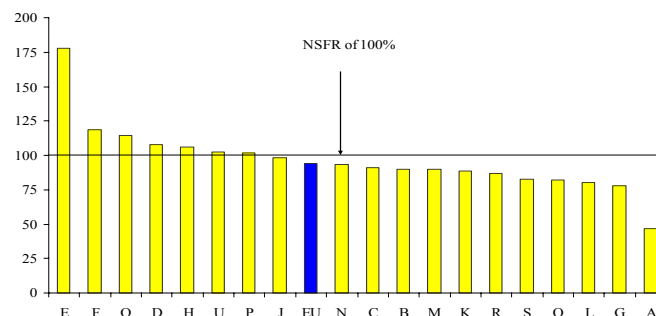
<sup>236</sup> The available stable funding factors for 'stable' and 'less stable' retail and SME deposits are raised from 85% and 70% to 90% and 80%, respectively, in comparison to policy option 2.2. The required stable funding factor for residential mortgages and other loans that qualify for the 35% or better risk weight under Basel II standardised approach for credit risk is lowered to 65% from 100%. The extent to which conditionally revocable and irrevocable credit and liquidity facilities would need to be pre-funded is lowered to 5% from the requirement of 10%. The required stable funding for government and public sector entity securities with risk-weight of 20% under the CRD is reduced to 20%, down from 100%.

<sup>237</sup> Source: QIS on the impact of Basel III reforms on the BCBS' countries

**Chart 7:** Distribution of NSFR for Group 1 banks, in %: country averages



**Chart 8:** Distribution of NSFR for Group 2 banks, in %: country averages

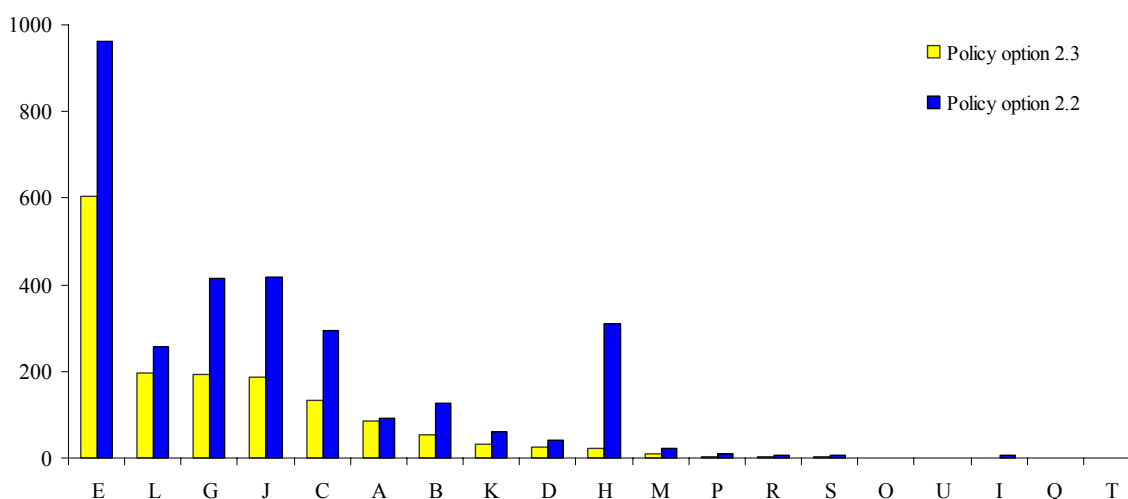


**Notes:** EU averages, in addition to countries shown in the charts, include three additional countries for Group 1, and one for Group 2.

**Source:** CEBS

The combined shortfall of stable funding to meet the NSFR threshold of 100%, calculated as a sum across individual banks where a shortfall is observed, for Group 1 and Group 2 banks that participated in the QIS as of December 2009 was about €1.8 trillion under this policy option (see Chart 9), equivalent to €3.2 trillion when extrapolated to the entire EU banking sector.

**Chart 9:** Liquidity shortfall for Group 1 and Group 2 banks combined as of December 2009, in € million



**Notes:** Country F, L and M totals include shortfalls only for Group 2 banks (Group 1 banks removed based on request of national supervisors). No NSFR shortfalls estimated for countries U, I, Q, and T under option 2.3.

**Source:** CEBS

Given the novelty of this requirement, this policy option acknowledges a possibility of unintended consequences across business models and / or funding structures. In this regard, this option entails an observation period that starts in 2012 before making further appropriate revisions to the NSFR calibration and moving it to a regulatory requirement as from 2018. The observation period would allow for the assessment of any unintended implications of the ratio not only for the industry, but also trade financing, financial markets and credit provision to the real economy. In practice, this would be implemented by introducing appropriate reporting requirements for credit institutions as part of the present legislative proposal in order to provide for a sound basis for the observation period and a monitoring of such a requirement across business models. The establishment of the actual regulatory requirement, subject to appropriate revisions relative to its preliminary form, would be left to another legislative proposal before 2018.

This policy option would be less costly for the industry than option 2.2, as in effect, compliance with the eventual NSFR would start only in seven years from 2010, giving the

institutions ample time to make necessary adjustments to their funding structure, maturity mismatch and activities which are the most vulnerable to liquidity risk in periods of stress. Institutions would still be subject to the costs related to provision of information to supervisors during the observation period (see section 5.8.3).

Comparison of policy options

Retaining the current scenario (option 2.1) implies that problems related to longer-term funding liquidity risk management, as outlined in section 3.2, may not be addressed effectively, depending on the actions taken in this area by national supervisors and/or the industry. While tightening of national liquidity regimes may provide for a degree of increased effectiveness with respect to regulation (objective S-1) and bank management (objective S-2) of risks discussed in this section, there is no guarantee that necessary progress would be achieved quickly enough and evenly across the EU.

While both policy options 2.2 (NSFR as specified in the February 2010 public consultation) and 2.3 (NSFR adopted by the Basel Committee) entail effective approaches with respect to contributing to the achievement of relevant objectives S-1 (Enhance adequacy of capital and liquidity requirements) and S-2 (Enhance bank risk management) as well as G-1 (Enhance financial stability) and other relevant general objectives, option 2.3 is more effective due to its more precise calibration – from a prudential angle - of a number of elements relevant for the calculation of the NSFR and a possibility of a further fine-tuning of the ratio and minimization of undesired destabilising effects for the industry and in the financial markets. Policy option 2.3 is the most efficient option in terms of achieving the above policy objectives as it would impose lowest adjustment costs on both the industry and, via the reduced likelihood of unwelcome side effects, on other economic agents. Policy option 2.3 is identified as a preferred option.

**Table 8:** Summary of policy option effectiveness and efficiency

Policy Option	Policy Option Comparison Criteria			
	Effectiveness			Efficiency
	Enhance adequacy of capital and liquidity requirements [S-1]	Enhance bank risk management [S-2]	Enhance financial stability [G-1]	
2.1 Retain current approach	3	3	3	3
2.2 Introduce NSFR as specified in the February 2010 public consultation	2	2	2	2
2.3 Introduce NSFR adopted by the Basel Committee	1	1	1	1

Scale of option ranking: 1=most effective / efficient, 3=least effective / efficient  
 Effectiveness measures extent to which options achieve relevant objectives  
 Efficiency measures extent to which objectives can be achieved for a given level of resources

**5.2. Eligibility of capital instruments and application of regulatory adjustments**

To address shortcomings in the area of definition of capital, including issues pertaining to the loss absorption, permanence and flexibility of payments of capital instruments that shall be counted towards the regulatory going-concern capital as well as issues regarding the completeness, appropriateness and lack of harmonized application of regulatory adjustments, the Commission services considered wide-ranging adjustments in this area. In the process of preparing the legislative proposal, a number of policy alternatives on various individual aspects have been examined; they could be sensibly grouped in the following key policy options:

- **Policy option 3.1:** Retain current approach;
- **Policy option 3.2:** Modify only the eligibility criteria for own funds, as specified in the February 2010 public consultation;

- **Policy option 3.3:** Modify both eligibility criteria and regulatory adjustments as specified in the February 2010 public consultation;
- **Policy option 3.4:** Modify both eligibility criteria and regulatory adjustments as adopted by the Basel Committee;
- **Policy option 3.5:** Modify both eligibility criteria and regulatory adjustments as adopted by the Basel Committee, adjusted for certain EU specificities.

*Policy option 3.1: Retain current approach*

Under this policy option, problems related to eligibility of capital instruments and application of regulatory adjustments that are outlined in section 3.3 will not be entirely addressed. The CRD II already harmonised the criteria and established explicit limits for different types of Tier 1 hybrid capital and these provisions took effect as of end 2010. However, further amendments were shown by the crisis to be necessary in order to enhance the loss absorption, flexibility of payments and permanence of common equity and hybrid Tier 1 capital. As regards regulatory adjustments, current CRD provisions allow for national discretion to make additional adjustments. While revision of these adjustments by individual MS may lead to improved quality of capital, there is no guarantee that a necessary progress would be achieved quickly enough and in a uniform manner across the EU, thus, hampering the functioning of the single banking market and undermining the financial stability.

*Policy option 3.2: Modify only the eligibility criteria for own funds as specified in the February 2010 public consultation*

This policy option would entail tightening of criteria for eligibility of capital instruments for inclusion in the different layers of regulatory capital, as specified in the Commission services' public consultation of February 2010. The consultation document outlined such criteria with respect to core Tier 1, non-core Tier 1 and Tier 2 capital, which are listed in Annex VI.

As regards core, or, common equity Tier 1 (CET1), the ineligibility of some types of instruments would have a relatively more pronounced impact in several MS due to the exclusion of instruments such as some classes of shares, silent partnerships, participation capital, preferred shares and supplementary cooperative shares.

Impacts on non-core Tier 1 capital would be driven by elimination of innovative and dated hybrid instruments. According to CEBS analysis, as of end of 2006, almost 50% of Tier 1 hybrid instruments in the EEA were innovative hybrids (mostly prevalent in UK, FR, DE, NL and IT); at the same time, such innovative hybrids constituted a majority of dated hybrid instruments.<sup>238</sup>

As regards Tier 2 capital instruments, the CRD provisions<sup>239</sup> permit the commitments (e.g., uncalled capital and commitments to make further non-refundable payments) of the members of credit institutions set up as cooperative societies to be included within lower Tier 2 capital provided they may be included in capital under national law.<sup>240</sup> The approach proposed in criterion 1 as regards the eligibility for Tier 2 capital (see Annex VI) would exclude such commitments from Tier 2 based on the prudential rationale that capital should be paid up in order to ensure that it may be relied upon when required. This would have an impact on those EU banks that are organised as cooperative networks / societies.

However, the above amendments would address only issues pertaining to the eligibility of capital instruments. They would not address the regulatory adjustments necessary to ensure

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<sup>238</sup> CEBS, *Report on a quantitative analysis of the characteristics of hybrids in the European Economic Area (EEA)*, March 2007

<sup>239</sup> Articles 57(g) and 64(1)

<sup>240</sup> An identical treatment is afforded to the joint and several commitments of borrowers for credit institutions organised as funds

that the amount of regulatory capital recognized adequately reflects the amounts that would be available to absorb losses on a going concern basis or in insolvency. A lack of further harmonization of regulatory adjustments would result in maintenance of the current divergent approaches in the EU to adjusting regulatory capital. Therefore, this policy option would only be partially effective in terms of achieving the relevant policy objectives.

Policy option 3.3: Modify both eligibility criteria and regulatory adjustments as specified in the February 2010 public consultation

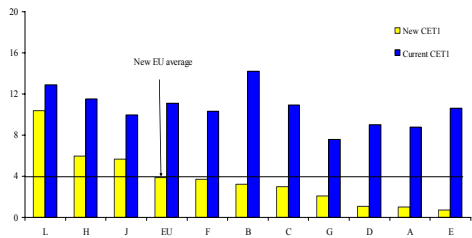
This policy option builds on option 3.2 by addressing problems identified in section 3.3 that pertain not only to capital eligibility but also to regulatory adjustments. To this end, this policy option entails lengthening the list of these adjustments as well as making their application more appropriate with respect to layers of regulatory capital. As specified in the consultation of February 2010 (see Annex VII), most of modified adjustments would be applied to the core, or, common equity Tier 1 (CET1) capital.

EU QIS showed that under this policy option, total deductions amount to some 60% of CET1 capital prior to deductions for Group 1 banks, and some 40% for Group 2 banks. In terms of individual deductions, at the EU level the most material impact on banks' eligible CET1 capital would come from deductions for material holdings of financial institutions and goodwill. Other significant reductions in eligible CET1 capital would be driven by deductions for DTAs, other intangibles and minority interests in countries where minority interests are included in the current predominant form of Tier 1 capital.

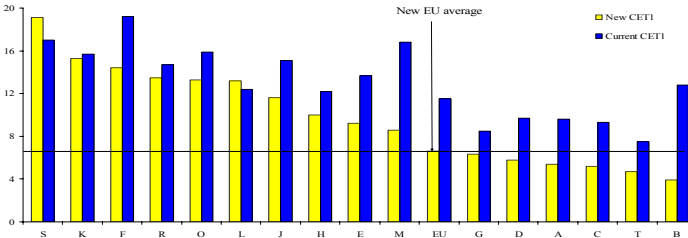
February 2010 public consultation of the Commission services included a proposal for deduction of only those DTAs that are subject to future profitability (i.e., tax losses carried forward). However, CEBS analysed the impact of deducting various types of DTAs. The analysis showed that DTAs related to future profitability comprise roughly one third of total DTAs in the EU, although in six MS they represent more than the half of existing DTAs. Overall, the impacts of individual regulatory adjustments on CET1 capital vary from one MS to another, and taken together have a major impact on CET1 capital ratio.

As a result of stricter capital eligibility requirements and re-allocation of regulatory adjustments to CET1 capital, under this policy option the CET1 ratio would decrease for all countries as shown in Charts 10 and 11. Average EU CET1 ratio falls from 11.1% by some 7 percentage points for Group 1 banks and from 11.5% by some 5 percentage points for Group 2 banks, with considerable variation in the magnitude of the decline between and within countries. In terms of distributional effects, smaller (i.e., Group 2) banks are less severely affected by the definition of capital proposals than large and internationally active banks.

**Chart 10:** Change in CET1 capital ratios for Group 1 banks due to capital definition proposal, in %: country averages



**Chart 11:** Change in CET1 capital ratios for Group 2 banks due to capital definition proposal, in %: country averages



**Notes:** Current CET1 ratio calculated on a smaller sample of banks and according to the predominant form of Tier 1 capital as applied by the bank or the relevant national supervisor; and is gross of deductions. New CET1 ratios capture the effects of proposals for eligibility to CET1 capital and deductions from it as well changes to RWAs related to definition of capital proposal. New CET1 ratios are understated to the extent that they reflect a full DTA deduction (as opposed to deduction of DTAs related to future profitability only). EU Group 1 'Current CET1' and Group 2 'New CET1' averages each include one additional MS that is not shown individually, while Group 1 'New CET1' and Group 2 'Current CET1' averages each include two additional MS.

**Source:** CEBS

In their responses to the consultation as regards the eligibility of instruments for CET1 capital, several public authorities and many industry respondents stated that greater onus should be placed on the substance of a capital instrument, e.g., its ability to absorb losses effectively, than on its legal form. As regards eligibility of Additional Tier 1 capital instruments, there was a significant support among public authorities for all such instruments to be required to have a principal write-down or conversion feature with an objective trigger, in line with the approach taken in CRD II, in order to ensure that such instruments absorb losses effectively and help an institution to remain as a going concern. Views of the industry on this topic were mixed. With respect to regulatory adjustments, a significant number of public authority respondents and many industry respondents expressed concern about the appropriateness of the proposed non-recognition of minority interest and full deductions of DTAs and investments in certain other unconsolidated financial institutions.

*Policy option 3.4: Modify both eligibility criteria and regulatory adjustments as adopted by the Basel Committee*

This policy option reflects the new definition of capital approach adopted by the Basel Committee that was outlined in the Committee's Basel III rules text in December 2010. This option, compared to option 3.3, entails a number of changes with respect to certain regulatory adjustments, improving upon the underlying prudential rationale and taking into account of the impact of the proposals on the industry and potential impact on the economy. The key changes are as follows:

- Minority interests: this option provides some recognition in CET1 to the minority interest supporting the risks of a subsidiary that is a credit institution, investment firm, or firm subject to the same prudential requirements and supervision as credit institutions and investment firms in the CET1.<sup>241</sup> For this, minority interest should meet the criteria of common stock of the consolidating bank. However, capital above the regulatory minimum and a capital conservation buffer (please see section 5.5) of a subsidiary would be deducted in proportion to the minority interest share.
- Investments in capital instruments of other financial institutions: this option includes an exemption for underwriting positions held for five working days or less and, under specific circumstances, allows the netting of long and short positions in other unconsolidated financial entities.
- The treatment of significant investments in the common shares of unconsolidated financial institutions (i.e., more than 10% of their issued share capital), mortgage servicing rights, and deferred tax assets from timing differences is modified by giving these deductions a limited recognition when calculating the CET1, with such recognition capped at 10% of a bank's common equity component for each of the above deductions. At the same time, banks would have to deduct the amount by which the aggregate basket of the three items above exceeds 15% of their CET1 capital, calculated after all regulatory adjustments, while the items included in the 15% aggregate limit would be subject to full disclosure. Amounts that are not deducted from the CET1 as per the above approach, however, are risk weighted at 250%. EU QIS showed that CET1 deductions as % of new CET1 capital gross of deductions for Group 1 banks compared to option 3.3 decline markedly, while Group 2 banks experience a less pronounced decline (see Table 9). In terms of individual deductions, at the EU level the most material impacts are due to goodwill, material holdings of financial institutions and DTAs. For both bank groups, deduction of surplus of items included in the basket has a low impact while deduction of mortgage servicing rights has no impact at all. Impacts of other individual adjustments continue to vary from one MS to another and, when taken together, exert a major albeit less pronounced, than under option 3.3, impact on the CET1 capital ratios.

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<sup>241</sup> Equivalent treatment of minority interest has been proposed for Tier 1 and total capital.



**Table 9:** CET1 deductions and minority interest as a percentage of new CET1 capital gross of deductions: comparison of policy option 3.3 and 3.4 for Group 1 and Group 2 banks

Country	Group 1 banks										Group 2 banks									
	Policy option 3.4										Policy option 3.4									
	Total	Goodwill	Intangibles	Financials	DTAs	Mortgage servicing rights	Basket exceeding 15%	Other <sup>2</sup>	Minority interest <sup>3</sup>	Minority interest <sup>3</sup>	Total	Goodwill	Intangibles	Financials	DTAs	Mortgage servicing rights	Basket exceeding 15%	Other <sup>2</sup>	Minority interest <sup>3</sup>	Minority interest <sup>3</sup>
A	-69	-70	-11	-8	-14	-8	0	0	-28	-3	-34	-34	-3	-1	-20	-1	0	-2	-9	0
B	-74	-68	-39	-9	-4	-10	0	-5	-2	-3	-67	-69	-35	-5	-7	-10	0	-4	-8	-1
C	-71	-55	-34	-4	-2	-12	0	-4	-1	-3	-38	-37	-15	-3	-11	-2	0	-1	-5	-10
D	-80	-47	-5	-2	-14	-4	0	-5	-17	-8	-32	-24	-1	-3	-3	-2	0	-3	-11	-10
E	-93	-47	-23	-4	-7	-7	0	-2	-4	-2	-26	-28	-3	-6	-14	-1	0	0	-3	0
F	-54	-43	-23	-4	-3	-9	0	-2	-2	-1	-6	-8	0	-2	0	0	0	0	-6	0
G	-80	-43	-12	-4	-8	-10	0	-3	-6	-1	-111	-22	-1	0	-19	0	0	-1	-2	0
H	-42	-37	-16	-4	-6	-5	0	-1	-6	-6	-12	-9	-1	-3	0	-3	0	0	-2	0
I	-28	-25	-13	-4	0	-1	0	0	-6	-7										
J	-33	-24	-7	-4	-3	-3	0	0	-8	-3	-14	-13	-5	-3	0	-2	0	0	-4	0
K	-24	-20	-12	-4	0	0	0	0	-3	-23	-47	-19	-6	-3	-8	0	0	0	-1	-15
L	-18	-16	-10	-2	-1	-1	0	0	-2	0	-6	-9	0	-4	0	-2	0	0	-3	0
M											-41	-35	-3	-2	-22	0	0	0	-8	0
N											-10	-31	-25	-5	-1	0	0	0	0	-2
O											-16	-16	0	-13	0	0	0	0	-3	-1
P											-16	-14	-2	-1	-5	0	0	0	-6	0
Q											-29	-13	-6	-5	-1	0	0	0	-1	0
R											-8	-10	-4	-2	-1	0	0	0	-2	0
S											-12	-1	0	-1	0	0	0	0	0	0
EU <sup>4</sup>	-62	-42	-20	-4	-5	-6	0	-2	-5	-4	-45	-33	-12	-3	-9	-3	0	-1	-5	-3

**Notes:** <sup>1</sup> Deductions for DTAs are based on full DTA deduction whereas the Commission services consulted only on exclusion of DTAs relating to future profitability of an institution; <sup>2</sup> 'Other' includes deductions related to investments in own shares, shortfall of provision to expected losses, cash flow hedge reserve, cumulative changes in own credit risk, pension fund assets and securitisation gains on sale; <sup>3</sup> It is assumed that minority interest was already excluded from the current predominant form of Tier 1 capital. Therefore, minority interest is not included in the sum of deductions from CET1, and is shown for information purposes; <sup>4</sup> Group 1 EU average includes 3 more countries that are not shown individually while Group 2 EU average includes 2 additional countries.

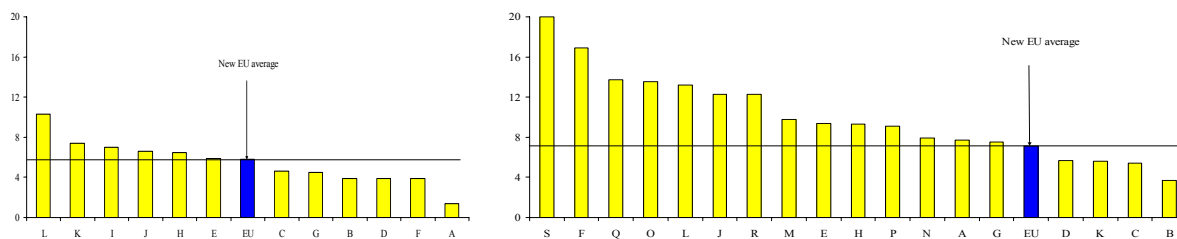
**Source:** CEBS

As a result and without considering the impact of other proposals included in the CRD IV, average EU CET 1 capital ratio for Group 1 banks, compared to option 3.3, increases by some 2 percentage points to 5.8% whereas that of Group 2 banks improves slightly to 7.1%, representing lower reductions from the current levels of predominant form of Tier 1 capital (see Charts 12 and 13 for distribution of CET1 capital ratios by country for Group 1 and Group 2 banks).

As regards eligibility of Additional Tier 1 capital instruments, this option would entail a less stringent treatment than the policy options 3.2 and 3.3 discussed above since those options would require all such instruments, irrespective of them being regarded as equity or liabilities for accounting purposes, to contain a meaningful statutory or contractual loss absorption mechanism, whereas only instruments classified as liabilities must have principal loss absorption under the Basel approach, which effectively would increase Tier 1 capital under this option by an estimated €89 billion. Notably, treatment under policy option 3.4 would not be in line the provisions of CRD II in conjunction with CEBS' guidelines on hybrid capital instruments which is reflected under options 3.2 and 3.3. As a result certain MS would be affected less severely under option 3.4 in terms of its impact on Tier 1 capital.

**Chart 12:** CET1 capital ratios (country averages) for Group 1 banks due to capital definition proposal, in %

**Chart 13:** CET1 capital ratios (country averages) for Group 2 banks due to capital definition proposal, in %



**Notes:** CET1 ratios capture the effects of proposals on eligibility for CET1 capital and deductions from it as well changes to RWAs related to definition of capital proposal. Group 1 EU average ratio includes 3 more countries that are not shown individually while Group 2 EU average includes 2 additional countries.

**Source:** CEBS

It can be estimated that under this policy option, combined current CET1 capital for 208 Group 1 and Group 2 banks would decline by some €490 billion<sup>242</sup>, Tier 1 capital by €370 billion and total capital by some €420 billion. Actual capital shortfall for the EU banking sector, however, would depend on the level of calibration of the new minima, implications of other parts of the proposal on the RWAs, and capital buffers that banks hold in excess of current regulatory minima (as can be seen from Charts 12 and 13). These aspects are assessed cumulatively in section 5.8.2 of this report.

It is expected that the new capital definition and regulatory adjustments should significantly impact the stability of the financial system, by not only increasing the level of capital, but more importantly by increasing its quality, i.e., its capacity to effectively absorb economic and financial shocks thereby preserving the viability of financial institutions. In addition, some specific deductions, such as for unconsolidated investments in financial institutions, should have the effect of reducing systemic risk.

**Policy option 3.5: Modify both eligibility criteria and regulatory adjustments as adopted by the Basel Committee, adjusted for certain EU specificities**

Under this policy option, a number of adjustments have been considered to the approach of the Basel Committee outlined under option 3.4 in order to align it better with EU regulatory and banking sector specificities. These adjustments reflect certain features of option 3.3 (Modify both the eligibility criteria and regulatory adjustments as specified in February 2010 public consultation) as well as stakeholder feedback received in relation to public consultations. They include:

- restricting CET1 to instruments that qualify under national law as equity capital<sup>243</sup> and meet the CET1 criteria, rather than to ordinary shares that meet the CET1 criteria – this approach places greater onus on the substance of a CET1 instrument. It recognizes the fact that some EU institutions issue instruments other than ordinary shares having the loss absorbency equivalent to that of ordinary shares;
- derogations from specific CET1 eligibility criteria for institutions that are mutuals, cooperative societies or similar institutions – this will help to ensure that the potential for general derogation from the CET1 criteria afforded by Basel III is applied appropriately and consistently in the EU;
- rather than recognition in CET1 only where associated with an instrument that qualifies as CET1, recognition in CET1 also of share premia that qualified as original own funds under Article 57(a) of Directive 2006/48/EC prior to 31 December 2010 – the purpose of this approach is to provide recognition of the loss absorbing nature and role of such share premia, while also restricting the treatment to instruments issued prior to the entry into force of the stricter definition of capital introduced by CRD II;

<sup>242</sup> Change between current predominant form of Tier 1 capital without any deductions and CET1 capital as defined under option 3.4

<sup>243</sup> This represents a 'substance over form' approach, as it allows instruments other than common shares that meet all the eligibility criteria of Basel III to be included in CET1

- a requirement for all Additional Tier 1 capital instruments, rather than only liabilities, to have principal write down or conversion feature<sup>244</sup> - this approach takes account of the raising of capital quality in CRD II and ensures that the principal amount of both equity instruments and liabilities are able to absorb losses effectively on a going concern basis;
- full, rather than limited, deduction from CET1 of mortgage servicing rights, as for all other intangible assets - such an approach takes account of the relative illiquidity and uncertain value of mortgage servicing rights, and the potential difficulty of realising significant amounts of them in a stressed or emergency situation. EU banks have limited amounts of mortgage servicing rights - by virtue of their US subsidiaries – and therefore impact of this adjustment is expected to be very small;
- a restriction on the recognition of hedging for the purposes of determining the amounts to be deducted for investments in other unconsolidated financial entities to the trading book. The purpose of this approach is to limit the potential for double counting of capital in the financial system through the provision of hedges by entities that are not subject to an equivalent deduction requirement, and to reflect the fact that such holdings in the non-trading book continue to the maturity of the instrument and are difficult to hedge effectively;
- an alternative approach for deduction of significant holdings in unconsolidated insurance entities combined with enhancements to the current approach to applying the methods laid down in the Financial Conglomerates Directive (FICOD). The purpose of this is to take account of, and to enhance, the cross sector treatment laid down in the FICOD of holdings of capital instruments in banking and insurance;
- recognising minority interest – and certain regulatory capital issued by subsidiaries - to the extent that those subsidiaries are credit institutions or investment firms and the capital is used to meet minimum capital requirements, capital conservation buffer and countercyclical capital buffer (see section 5.5). This recognises the importance of the countercyclical capital buffer, the capital used to meet it, and it aims at avoiding any disincentives to its use;
- clarification of the treatment of DTAs that automatically convert into a claim on the state when a firm makes a loss. Where their ability to absorb losses when needed is ensured, such DTAs would not have to be deducted.

The overall net impact of the above adjustments on the CET1 ratios of Group 1 and Group 2 banks presented under option 3.4 is assumed not to be of major significance, as some of them would make the new capital requirements more stringent while others would have an opposite impact. Most importantly, the adjustments have been developed with a view to ensure that the relevant policy objectives are attained in the most effective manner and that Basel III framework is meaningfully and flexibly applied to a diverse spectrum of the EU banking firms.

#### Comparison of policy options

Retaining the current scenario (option 3.1) implies that problems related to quality of capital, as outlined in section 3.3 may not be addressed effectively, depending on the actions taken in this area by national supervisors and/or the industry. While tightening of national approaches may provide for a degree of increased effectiveness with respect to capital adequacy (objective S-1) and bank management of risks (objective S-2) discussed in this section, there is no guarantee that necessary progress would be achieved quickly enough and evenly across the EU.

Of the remaining policy options, option 3.2 would be the least effective with respect to contributing to the achievement of the relevant policy objectives due to its focus on eligibility criteria only. Policy options 3.3, 3.4 and 3.5 are perceived to be rather effective although they vary in terms of treatment of individual regulatory adjustments and, additionally, options 3.3

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<sup>244</sup> This addresses the issue that preference shares, while not being effective at absorbing losses on a going concern basis, would not be required to have a write-down or conversion

and 3.5 are more aligned with certain EU regulatory and banking sector-specific aspects. In this regard, option 3.5 is more developed as it reflects outcomes of extensive public consultations. Hence, policy option 3.5 is the most efficient option and is identified as a preferred option.

**Table 10:** Summary of policy option effectiveness and efficiency

Policy Option	Policy Option Comparison Criteria						Efficiency
	Effectiveness						
	Enhance adequacy of capital and liquidity requirements [S-1]	Enhance bank risk management [S-2]	Prevent regulatory arbitrage opportunities [S-3]	Enhance level playing field [S-6]	Align prudential requirements for SIFIs with the risks they pose [S-8]	Reduce cyclicalities of bank lending [S-9]	
3.1 Retain current approach	5	5	5	5	5	5	5
3.2 Modify only the eligibility criteria as specified in the February 2010 public consultation	4	4	4	4	4	4	4
3.3 Modify both eligibility criteria and regulatory adjustments as specified in the February 2010 public consultation	1-3	1-3	1-3	2-3	1	1-3	3
3.4 Modify both eligibility criteria and regulatory adjustments as adopted by the Basel Committee	1-3	1-3	1-3	2-3	2-3	1-3	2
3.5 Modify both eligibility criteria and regulatory adjustments as adopted by the Basel Committee, adjusted for certain EU specificities	1-3	1-3	1-3	1	2-3	1-3	1

Scale of option ranking: 1=most effective / efficient, 5=least effective / efficient

Effectiveness measures extent to which options achieve relevant objectives

Efficiency measures extent to which objectives can be achieved for a given level of resources

### 5.3. Counterparty credit risk

To address problems related to current rules on the counterparty credit risk (CCR), discussed in section 3.4, the Commission services propose a number of revisions in this area with the main policy options as follows:

- **Policy option 4.1:** Retain current approach;
- **Policy option 4.2:** Enhance adequacy and minimize cyclicalities of CCR capital requirements and enhance incentives for clearing OTC instruments through central counterparties (CCPs);
- **Policy option 4.3:** Enhance adequacy and minimize cyclicalities of CCR capital requirements, enhance incentives for clearing OTC instruments through CCPs and adjust the treatment of exposures to CCPs.

#### Policy option 4.1: Retain current approach

Under this policy option, problems outlined in section 3.4 would not be addressed. The capitalisation for CCR would remain to be insufficient and the corresponding risk management standards inadequate. Credit institutions would continue to lack incentives to move their bilaterally cleared OTC derivative contracts to multilateral clearing through central counterparties (CCPs). No consideration would be given to the degree of cyclicalities of the capital requirements.

#### Policy option 4.2: Enhance CCR requirements

This policy option would entail amending the CCR framework in several areas in order to ensure a more appropriate capitalisation for CCR. This would include the following amendments:

- Capital requirements for credit valuation adjustment (CVA) risk: credit institutions would be subject to an additional capital charge for mark-to-market losses (i.e., CVA risk) associated with deterioration in the creditworthiness of a counterparty. As mentioned in section 3.4, while the current regulatory standards cover the risk of a counterparty default, they do not address such CVA risk, which has been a greater source of losses than outright defaults. The new CVA capital charge has been designed in a risk sensitive manner. It would also allow

recognising both single name and index hedges of the CVA risk and thus promote sound practices in managing this risk. Such approach would allow banks to considerably mitigate the impact of the new CVA capital charge and, in turn, largely address concerns of the end users of derivatives - expressed in the public consultations - about the possible disproportionate impact of this measure on non-financial institutions using derivatives for risk mitigating purposes, in case banks' hedging of the CVA risk were not adequately recognised.<sup>245</sup> As far as financial markets are concerned, the recognition of hedging is likely to cause an increase of demand for both single-name and index Credit Default Swaps (CDS) and contribute to further growth of the corporate CDS market.

- Adjustment of the asset value correlations: to address the systemic risk within the financial sector, this option suggests raising the risk weights on exposures to financial institutions relative to the non-financial corporate sector, as financial exposures are more highly correlated than non-financial ones. Specifically, it suggests applying a multiplier of 1.25 to the asset value correlation of exposures to regulated financial firms (with assets above \$100 billion) and to all exposures to unregulated financial firms (regardless of size). The measure is expected to encourage diversification of CCR among smaller institutions and, overall, should contribute to less interconnectedness between large or systemically important institutions and, possibly, limit the propagation of a shock originating in a default of a large or systemically important financial institution (SIFI). To the extent that wholesale financial markets are characterised by a hub and spoke structure, relationships between hubs will be weakened and banks in spokes will have an incentive to increase the number of their relationships. This could reduce the scope to benefit from scale economics and therewith reduce overall efficiency. On the other hand, it also implies stronger competition among hubs and possibly lower margins in wholesale financing, which could have beneficial effects for the economy at large as well as in terms of a reduction of systemic risk as a whole.

- Calibration of the exposure at default for CCR exposures: credit institutions would be required to calculate the Effective Expected Positive Exposure metric based on data that includes a period of stress to address general wrong-way risk. The amendments would also explicitly determine the treatment of exposures with counterparties where specific wrong-way risk has been identified. These amendments would dampen the cyclical nature of the respective capital requirements. The resultant increase in regulatory capital would limit the scope for contagion (banks should be less affected by a default of counterparty) and should contribute to strengthening of the financial stability, which may further translate into lower risk premia banks have to pay for obtaining funds and better availability of financing for the economy.

- Strengthening standards for collateral management and initial margining, stress testing and back-testing (model validation).

- Clearing of OTC instruments through CCPs: this option would also considerably reinforce the existing incentives for institutions to use CCPs for OTC derivatives as the proposed amendments would increase the assessed capital requirements against such exposures if completed on a bilateral basis rather than through a CCP. Assuming that most institutions dealing with OTC derivatives move to CCP clearing, a number of the derivatives currently traded on the OTC markets would have to become more standardized, which is one of requirements to be cleared and also a necessary condition to achieving the counterparty risk reduction benefits of central clearing. Standardisation can be a powerful tool of raising market efficiency and liquidity. As regards hedging, standardisation might in certain instances

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<sup>245</sup> Specifically, end users of derivatives (including non-financial institutions) feared that banks would pass the additional costs resulting from the new CVA charge on to their counterparties by increasing the price of the respective derivative products, which are being used by end users for risk mitigation purposes. End users claimed that this would disincentivise them to enter into such derivative transactions and thus mitigate the risk accordingly.

weaken the relationship between a derivative and underlying risk/instrument and can therefore not be extended to the entire OTC derivatives market. As market participants (including non-financial institutions / end users of derivatives) have an interest in tailor-made contracts, the strengthening of CCPs may lead to higher costs for them as liquidity will suffer in the non-standardised segments.

The number of banks included in the CCR analysis in the EU QIS was considerably smaller than the overall number of participating banks. This can be primarily attributed to the fact that this type of risk is relevant only to banks with significant OTC derivative and/or SFT activities as well as insufficient data quality which led to the exclusion of 17 of the 50 Group 1 banks from the analysis.

Due to proposals under this policy option, the remaining 33 Group 1 banks had an average increase in their RWAs of some 10%<sup>246</sup>; most of it due to the proposed CVA charge. Capital increases related to other measures, including the rise in the asset value correlation, were by comparison modest. Across EU MS, above-average increases in the RWAs were observed in banks from MS H, E and J. Notably, the average increase in RWAs of Group 2 banks was significantly smaller at 0.2%, illustrating that these banks have typically less exposure to OTC derivatives, and that proposals with regard to CCR have major implications only for the largest EU banks.

#### *Policy option 4.3: Enhance CCR requirements and adjust treatment of exposures to central counterparties*

This policy option reflects the new CCR framework adopted by the Basel Committee that was outlined in the Committee's Basel III rules text in December 2010. It builds on the policy option 4.2 and entails, in addition, a recalibration and differentiation of the treatment of exposures to CCPs<sup>247</sup> depending on the type of the exposure the credit institution has vis-à-vis a CCP and whether the respective CCP complies with a set of stringent risk management standards.<sup>248</sup>

More specifically, this proposal would differentiate between (i) collateral and mark-to-market exposures to CCPs and (ii) the default fund contributions<sup>249</sup>:

- The collateral and mark-to-market exposures would attract a very low (e.g., 1%) risk weight, reflecting the low (however, non-zero) risk that such exposures entail.<sup>250</sup> Such treatment would, however, be allowed, only if a given CCP meets a set of robust risk management standards. The collateral and mark-to-market exposures to CCPs that are not compliant with these standards would be treated like any other bilateral counterparty. Such approach would

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<sup>246</sup> Not including capital charges for exposures to CCPs

<sup>247</sup> Currently, banks' exposures to CCPs generally attract a zero EAD; few requirements are placed on CCPs in order for banks to use a zero EAD in calculating their exposures to such entities.

<sup>248</sup> A CCP is an entity that interposes itself between counterparties to a contract traded within one or more financial markets, becoming the buyer to every seller and the seller to every buyer. A CCP can play an important role in the efforts to reduce the systemic risk arising from the web of exposures formed by holdings of derivatives products by banks and other financial institutions. However, a CCP also concentrates risk, which means that a CCP with insufficiently robust risk management processes can actually increase the systemic risk. In order to avoid such a situation, supervisors need to ensure that a CCP has in place strong risk management procedures and is, more generally, subject to and complies with strict rules/standards governing all aspects of its operations. In this context, on 15 September 2010, the Commission adopted a proposal for a Regulation on OTC derivatives, central counterparties and trade repositories, which envisages subjecting CCPs to stringent business conducts and harmonised organisational and prudential requirements such as internal governance rules, audit checks, greater requirements on capital etc; see [http://ec.europa.eu/internal\\_market/financial-markets/derivatives/index\\_en.htm#proposals](http://ec.europa.eu/internal_market/financial-markets/derivatives/index_en.htm#proposals)

<sup>249</sup> The default fund contributions are designed to cover losses, over and above initial margin, following a clearing member default

<sup>250</sup> Collateral held by an entity acting as a custodian will, provided such collateral will not form part of the custodian's estate in a bankruptcy, receive a zero risk weight.

considerably promote the use of the CCPs with high risk management standards with all the related positive impact on financial stability.

- The default fund contributions would attract higher capital charge (compared to collateral and mark-to-market exposures) that would be derived on the basis of a risk sensitive approach, reflecting the financial resources waterfall of a CCP in question. The capital charge applied to the default fund contributions would therefore vary according to the financial resources (such as initial margins or CCP own capital) available to support any possible losses before the default fund contributions are used. Such approach would considerably increase incentives for firms to post higher initial margins, which would in turn increase the robustness of CCPs and enhance the financial stability. The treatment of default fund contributions posted with a CCP that does not comply with the enhanced standards would be significantly more conservative.

The above described approach would, compared to the existing regime, lead to an increase of capital requirement for exposures to CCPs. This increase however would only be marginal and not significantly affect the effectiveness of the goal to reinforce the incentives for institutions to use CCPs for OTC derivatives outlined in the discussion of policy option 4.2 as the increase in capital requirements for exposures arising from bilaterally cleared transactions would be significantly greater.

In the context of this option, the Commission services publicly consulted on the capitalisation of exposures to CCPs and the treatment of incurred CVA in February-March 2011<sup>251</sup>.

The latter deals with the issue of how to treat losses against the CVA risk which a bank in question writes down upfront. Given that incurred CVA has been recognized in the Profit & Loss account, and thus effectively represents an amount that cannot be lost again were the counterparty to default, the Basel Committee suggested a treatment where incurred CVA could be deducted from the exposure amount (Exposure at Default) in the calculation of the capital requirements for the default component of CCR.

A vast majority of respondents to the Commission services' consultation nevertheless expressed serious concerns about such an approach, arguing that it is conceptually inadequate and that the degree of the recognition of incurred CVA is disproportionately low.

The Commission services have extensively analysed the comments received<sup>252</sup> and as subsequently suggested an alternative treatment, which would allow for a greater, however still prudent, degree of recognition of incurred CVA. In essence, such treatment would allow institutions applying the IRB approach to offset the regulatory expected loss for CCR by the amount of incurred CVA, but this offset would be capped at the level of expected loss on the trade/netting set to which it relates. Institutions applying the Standardised Approach would be subject to the same treatment as proposed by the Basel Committee.

The Commission services consider the above alternative treatment for institutions applying the IRB approach conceptually sounder, consistent with the rest of the regulatory framework applied to those institutions and more effective in eliminating the double count referred to above. The benefits of such approach would nevertheless be somewhat diminished by the possible costs implied for internationally active banks by divergence from the treatment proposed by the Basel Committee, provided that such treatment is confirmed and implemented as announced in the Basel III framework published in December 2010. However, in the view of the Commission services any such divergences would not have material implications for the EU industry overall and therefore are not elaborated further in this assessment.

#### *Comparison of policy options*

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<sup>251</sup> [http://ec.europa.eu/internal\\_market/bank/regcapital/index\\_en.htm#consultation\\_credit\\_risk](http://ec.europa.eu/internal_market/bank/regcapital/index_en.htm#consultation_credit_risk)

<sup>252</sup> [http://circa.europa.eu/Public/irc/markt/markt\\_consultations/library?l=/financial\\_services/credit-risks&vm=detailed&sb=Title](http://circa.europa.eu/Public/irc/markt/markt_consultations/library?l=/financial_services/credit-risks&vm=detailed&sb=Title)

Policy option 4.1 entails possible significant costs in terms of inadequate capital and risk management standards for CCR, with its resulting negative consequences for financial stability. This option can be therefore discarded from any further considerations. In contrast, policy option 4.2 is effective in addressing all key shortcomings outlined in section 3.4 – it ensures more adequate and less cyclical capital requirements for CCR, strengthens risk management standards and provides additional incentives to move OTC derivative contracts to CCPs, thus, helping to reduce the systemic risk across the financial system.

Measures proposed under policy option 4.3 (on top of those proposed under policy option 4.2) enhance capital requirements (objective S-1) and bank risk management (objective S-2) and reduce the systemic risk even further by ensuring an appropriate capitalisation for exposures to CCPs and providing additional important incentives to move OTC derivative contracts to CCPs with the highest risk management standards. As a result, policy option 4.3 is identified as a preferred policy option.

**Table 11:** Summary of policy option effectiveness and efficiency

Policy Option	Policy Option Comparison Criteria				Efficiency
	Effectiveness				
	Enhance adequacy of capital and liquidity requirements [S-1]	Enhance bank risk management [S-2]	Align prudential requirements for SIFIs with the risks they pose [S-7]	Reduce cyclical bank lending [S-9]	
4.1 Retain current approach	3	3	3	3	3
4.2 Enhance CCR requirements	2	2	2	2	2
4.3 Enhance CCR requirements and adjust treatment of exposures to CCPs	1	1	1	1	1

Scale of option ranking: 1=most effective / efficient, 3=least effective / efficient  
 Effectiveness measures extent to which options achieve relevant objectives  
 Efficiency measures extent to which objectives can be achieved for a given level of resources

**5.4. Leverage**

To address excessive build-up of leverage on banks' and investment banks' balance sheets and help contain the cyclical bank lending, the Commission services investigated a possibility of introducing a non risk-based leverage ratio. The main policy options in this area are as follows:

- **Policy option 5.1:** Retain current approach;
- **Policy option 5.2:** Introduce supplementary non risk based leverage ratio as specified in the February 2010 public consultation;
- **Policy option 5.3:** Conduct extensive monitoring of different types of supplementary non risk based leverage ratio.

*Policy option 5.1: Retain current approach*

Under this policy option the building up of excessive leverage during the next economic upturn would not be addressed other than by increased minimum capital requirements, once adopted. Also, there would be no overall backstop against model risk. In addition, there would be a risk that supervisors may introduce various national treatments in this area, which could undermine the level playing field within the EU and internationally.

*Policy option 5.2: Introduce leverage ratio as specified in the February 2010 public consultation*

This policy option would introduce a leverage ratio as per the definition included in the public consultation of February 2010, which was closely aligned with the consultative document of the Basel Committee of December 2009.

In the process of the EU QIS, several variations of a possible ratio were assessed. For example, both Tier 1 and total capital for the numerator of the ratio were considered, while for

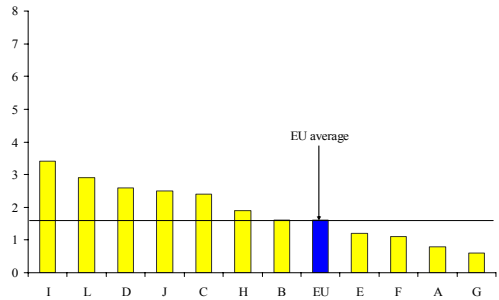


the calculation of the exposure base (the denominator) a possibility of excluding high quality liquid assets from the on-balance sheet exposure amount was examined.

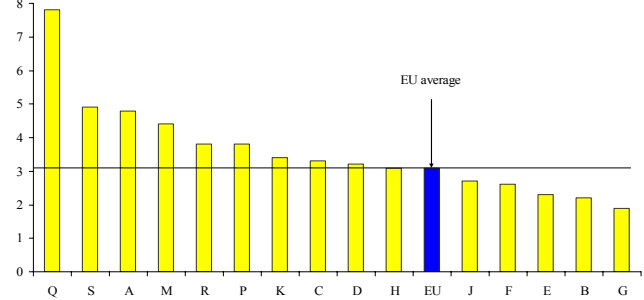
The distributions of average leverage ratios for Group 1 and Group 2 banks of different countries for the principal variant of the ratio are shown in Charts 14 and 15. Notably, at the EU level, the average Group 2 bank leverage ratio of 3.1% (representing a multiple leverage of 32 times Tier 1 capital) is almost double that of 1.6% (representing a multiple leverage of 63 times Tier 1 capital) of Group 1 banks, indicating that smaller EU banks are less leveraged. This outcome is mostly explained by the fact that larger Group 1 banks are more impacted by i) the new Basel definition of Tier 1 capital (see section 5.2) and ii) the proposed treatment for non-traditional banking assets. In particular, the proposed deductions from CET1 capital were considered to be fully and directly applicable without recognising the mitigating effects of the agreed phasing-in regime, which has a significant impact on the Tier 1 capital base. Non-traditional banking assets constitute a relatively larger portion of Group 1 bank business (compared to Group 2 banks) and their treatment had an important impact on the exposure base by not allowing netting of derivatives, valuing written credit derivatives at 100% of their notional value and capturing off-balance sheet exposure at 100%.

Feedback to the public consultations showed that the exposure base (i.e., denominator of the ratio) under this option is broadly defined and in some cases may give a too wide capture of leverage. These cases include application of proposed conversion factors of 100% for unconditionally cancellable off-balance sheet exposures such as credit cards and of gross nominal values of derivatives without allowing for netting under the Basel II framework. Furthermore, both national authorities and the industry expressed concerns that institutions with lower risk business models would be affected disproportionately as low capital requirements of such institutions would result in higher leverage ratios. Given that these institutions are critical for providing credit to the real economy (including to SMEs) a wrong calibration of the leverage ratio might therefore have unintended consequences for the economic recovery.

**Chart 14:** Leverage ratios (country averages) for Group 1 banks, in %



**Chart 15:** Leverage ratios (country averages) for Group 2 banks, in %



**Notes:** Leverage ratio using the new definition of Tier 1 capital in the numerator, and both on- and off-balance sheet exposures in the denominator. More specifically, in the denominator credit conversion factor of 100% for all off-balance sheet exposures was used, including for unconditionally cancellable commitments, written credit derivatives were measured at 100% of their notional value, other derivatives measured at potential future exposure, and no netting of financial derivatives was recognised. Group 1 EU average includes 4 additional countries that are not shown individually while Group 2 EU average includes 2 additional countries.

**Source:** CEBS

*Policy option 5.3: Conduct extensive monitoring of leverage*

While a non risk-based supplementary leverage ratio (although differently defined) already exists in the US, Canada and Switzerland, experience with this measure in the EU is very

limited. Hence, both its definition and calibration need to be chosen very carefully to avoid any unintended adverse impacts. Discussions in this regard at the level of the Basel Committee also confirmed these concerns. Therefore, Basel III rules text foresees a review period of a full credit cycle to assess the effectiveness of this policy measure. Such review would assess, among others:

- impacts on lower risk business models versus higher risk business models, and effects of possible migration from the former to the latter (the EU QIS did not provide sufficient information on the distribution of leverage ratios across different banking business models);
- changes in overall balance sheet structure due to securitisation;
- interaction of the ratio with the risk-based capital requirements;
- impacts on markets for specific financial products such as repos and covered bonds;
- its effectiveness of mitigating pro-cyclicality throughout an economic cycle;
- impacts on lending to SMEs and trade financing; and
- impacts that differences in financial reporting frameworks may have on comparability and the international level playing field for the EU institutions.

Until a more extensive monitoring of the leverage ratio has been carried out it is not possible to define the most effective design and absolute minimum level of the leverage ratio for all types of EU credit institutions and investment firms. The Commission services intend to conduct such monitoring for several alternative definitions of the numerator and the denominator of the ratio (including the definitions outlined in Basel III rules and in February 2010 public consultation), which would feed into the development of the most effective variant of this policy measure. On the basis of this review and prior to making it a binding measure from 2018, the Commission services will prepare another proposal on the final design and calibration of the leverage ratio.

Comparison of policy options

Retaining the current scenario (option 5.1), implies that problems related to excessive build-up of leverage, as outlined in section 3.5.2, may not be addressed effectively, depending on the actions taken in this area by national supervisors and/or the industry. While tightening of national regimes may provide for a degree of improved effectiveness with respect to regulation (objective S-1) and bank management (objective S-2) of risks discussed in this section, there is no guarantee that necessary progress would be achieved quickly enough and evenly across the EU.

Under policy option 5.2 steps were taken to examine a number of alternative formulations of the leverage ratio. While most of alternative formulations examined would provide for a certain degree of effectiveness as regards contributing to the achievement of relevant objectives S-1 (Enhance adequacy of capital and liquidity requirements), S-2 (Enhance bank risk management), and S-9 (Reduce cyclicality of bank lending), they may also entail a risk of unintended consequences (which can be only ascertained following a more extensive monitoring exercise) which makes this option less attractive from the efficiency standpoint. Policy option 5.3 is marginally more effective and efficient than option 5.2 due to its more appropriate – from a prudential angle - eventual design of both the numerator and the denominator of the ratio as well as its eventual calibration following the monitoring exercise. Policy option 5.3 therefore is identified as a preferred option.

**Table 12:** Summary of policy option effectiveness and efficiency

Policy Option	Policy Option Comparison Criteria			Efficiency
	Effectiveness			
	Enhance adequacy of capital and liquidity requirements [S-1]	Enhance bank risk management [S-2]	Reduce cyclicality of bank lending [S-9]	

Policy Option	Policy Option Comparison Criteria			
	Effectiveness			Efficiency
	Enhance adequacy of capital and liquidity requirements [S-1]	Enhance bank risk management [S-2]	Reduce cyclical of bank lending [S-9]	
5.1 Retain current approach	3	3	3	3
5.2 Introduce leverage ratio as specified in the February 2010 public consultation	2	2	2	2
5.3 Conduct extensive monitoring of leverage ratio	1	1	1	1

Scale of option ranking: 1=most effective / efficient, 3=least effective / efficient

Effectiveness measures extent to which options achieve relevant objectives

Efficiency measures extent to which objectives can be achieved for a given level of resources

## 5.5. Capital buffers

The Commission has already adopted certain policy proposals aimed at tackling some of the market failures outlined in section 3.5 and mitigating the pro-cyclicality in the financial system. However, additional policy measures are needed to address the outstanding yet significant problem drivers. To this end, the Commission services, in line with the conclusions of the report on the effects of the CRD on the economic cycle of June 2010, examined a possibility of implementing instruments that would move in a countercyclical fashion to bank capital levels, i.e., would increase in economic upturns and decrease in downturns. Such measures would smooth the cyclical of bank lending by providing for supplementary capital buffers that would ensure financial soundness of banks throughout the economic cycle and protect the sector from periods of systemic risk build-up. The key policy options in this area are as follows:

- **Policy option 6.1:** Retain current approach;
- **Policy option 6.2:** Introduce a capital buffer to enhance individual banks' ability to absorb losses over prolonged periods of market stress, i.e., **capital conservation buffer**;
- **Policy option 6.3:** Introduce a capital buffer to protect banks from periods of risk build-up at the macro level, i.e., **countercyclical capital buffer**;
- **Policy option 6.4:** Introduce a **dual capital buffer**, comprising both a capital conservation buffer and a countercyclical capital buffer.

### Policy option 6.1: Retain current approach

Under this policy option, drivers of pro-cyclicality discussed in section 3.5 would be addressed only with the policy measures that have been already adopted by the Commission or new measures adopted by MS. However, since the pro-cyclicality is driven by a number of such drivers, additional measures are necessary, in particular, when it comes to dealing with market failures of behavioural nature, e.g., limitations in risk measurement at the absolute level (which, among other factors, contribute to building up of systemic risk and incapacity to sustain losses evoked by crises that follow) or inappropriate responses to risk and changes in economic conditions (which have been shown to weaken financial resilience of individual firms in times of stress). Hence, this policy option is largely sub-optimal in terms of its effectiveness vis-à-vis attainment of relevant policy objectives. Furthermore, supplementary policy measures to address the problem of a systemic nature may require certain macro-level and / or cross-border arrangements which are feasible only with the EU level legislation.

### Policy option 6.2: Capital conservation buffer

The design of a capital conservation buffer was laid out in the Commission services' public consultation of February 2010. The buffer would be based on a fixed buffer target over the regulatory capital minimum to absorb losses in 'stressed' periods that may span a number of quarters / years. Banks would be expected to build up such capital in 'good' economic times. Those banks that fell below the target would face constraints on discretionary distributions of earnings (i.e., dividend payments, share buybacks, discretionary payments on other Tier 1

capital instruments and discretionary bonus payments to staff) until conservation capital buffer target is reached.

More specifically, a buffer range would be established above the new regulatory minimum capital requirement and capital distribution constraints would be imposed on those banks whose capital levels fall in this range. It is important to emphasize, that in such instances, banks would be able to conduct business as normal; the constraints imposed would relate only to discretionary distributions, and not operations of banks. The restriction on distributions would depend on a distance to the target level – the further from the target (within the range between the minimum and the target) the level of capital falls, the higher percentage of its earnings in the subsequent year a bank would be required to conserve. These rules would be applied at the consolidated group level, i.e., restrictions would be imposed on distributions out of the consolidated group, however, in order to conserve resources in specific parts of the group national supervisors would have an option to apply the regime at the 'solo' level.

Such approach would be effective at ensuring that the banking sector accumulates capital buffers when it has the earnings capacity to do so. This should enhance resilience of individual institutions in periods of stress in the financial markets, as they would be better positioned to absorb related losses. However, this approach does not ensure that cumulating the additional capital to cover risks at the individual bank level would coincide with the periods of excessive credit growth at the macro level and a concomitant build-up of systemic risks which need to be prevented to protect banks (as well as other economic agents) from consequences of ensuing systemic crises. Industry representatives, in their responses to the public consultation, argued that effectiveness of this policy option in terms of containing the cyclicity of bank lending would be limited due to their unwillingness to skip dividends, which would effectively lead to their perception of a target of the conservation capital buffer as a new regulatory minimum capital requirement (which it will not be).

#### *Policy option 6.3: Countercyclical capital buffer*

The design of a countercyclical capital buffer was laid out in the Commission services' public consultations of February 2010 and October 2010. The buffer would ensure that bank capital requirements take account of the macro-financial environment in which banks operate and, in turn, to achieve the broader macro-prudential goal of protecting the banking sector and the real economy from the system-wide risks stemming from the boom-bust evolution in aggregate credit growth. Importantly, the countercyclical capital buffer would also help to lean against the build-up phase of the cycle which would occur through the capital buffer acting to raise the cost of credit, and therefore dampen its demand, when there would be evidence that the stock of credit has grown to excessive levels relative to its long term trend.

Competent authorities in each MS would be responsible for setting the buffer add-on<sup>253</sup> applicable to credit exposures to counterparties located in their jurisdiction. The add-on would

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<sup>253</sup> The methodology for calculating buffer add-on has been developed by the Basel Committee and has been subject to public consultation conducted by the Commission services. The methodology transforms the aggregate private sector credit/GDP gap into a suggested buffer add-on. It indicates a zero guide add-on when credit/GDP is near or below its long-term trend and a positive guide add-on when credit/GDP exceeds its long term trend by an amount which, on the basis of available historical data, suggests there could be excess credit growth that may be associated with a build up of system-wide risk. Analysis of the credit/GDP gap showed that while it would often have been a useful guide in taking buffer decisions in the past, it does not always work well in all jurisdictions at all times. Thus, rather than relying mechanically on the credit/GDP guide, authorities would be expected to apply judgment in setting of the buffer in their jurisdiction after using the best information available to gauge a build-up of the system-wide risk.

be subject to an upper bound and would only be imposed when there is evidence that the excess credit growth results in a build-up of the system-wide risk. Credit institutions with exclusively domestic credit exposures would only be subject to the add-on determined by the competent authorities of the home MS, whereas institutions providing services in other MS by means of a branch or free provision of services in relation to exposures located in those MS would apply the buffer add-on as determined by the host MS competent authorities, when the buffer is set between 0% and 2.5% of risk weighted assets.<sup>254</sup> When the buffer determined by host MS exceeds 2.5%, home MS authorities would be allowed, but not obliged to apply a buffer rate higher than 2.5%.

Banking groups having subsidiaries in other MS for the purposes of calculating the buffer add-on on the consolidated basis would have to apply the buffer add-ons determined by the competent authorities of the subsidiaries. In practice, this means that cross-border credit institutions would have to look at the geographic location of their credit exposures and calculate their countercyclical capital buffer according to the add-ons prevailing in those MS where their exposures are located. For banking groups, decisions on the level of the countercyclical buffer could take place in the context of the joint decision process of Article 129(3) of the CRD whereby the consolidating supervisor and the other relevant competent authorities would consult each other and reach a joint decision on the application of the buffer at consolidated level and at the level of each subsidiaries. In case of a disagreement, the respective competent authorities would make their own decision in accordance with their responsibilities, i.e., consolidated requirement would be determined by the consolidating supervisor whereas 'solo' requirements - by competent authorities responsible for the supervision of subsidiaries.

Countercyclical buffer add-on decisions would be pre-announced by 12 months to give banks time to meet the additional capital requirements before they take effect, while reductions in the buffer would take effect immediately to help reduce the risk of the supply of credit being constrained by regulatory capital requirements. The consequences of not meeting the countercyclical capital buffer would be the same as those of not meeting the capital conservation buffer (i.e., constraints on discretionary distributions of earnings).

In cases where banks have exposures to jurisdictions that do not operate and publish buffer add-ons, the competent authorities would have to set their own buffer add-ons for such exposures. This could be done by using credit and GDP data and other information on economic and financial conditions for those jurisdictions available from BIS, IMF and other sources. In the European context, this option allows for the involvement of the European Systemic Risk Board (ESRB) to foster macro-prudential supervision, e.g., by recommending buffer add-ons for third country jurisdictions.

This policy option would be effective at ensuring that bank capital regulation is responsive to macro-financial environment and, in turn, would protect the banking sector from the systemic risk linked to excessive credit growth. At the level of individual institutions, however, this policy may not be entirely effective at ensuring that they have sufficient capital buffers to absorb losses incurred during protracted turbulent periods, especially considering the fact that credit growth in aggregate is used to gauge the need for buffer adjustments.

#### *Policy option 6.4: Dual capital buffer*

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<sup>254</sup> The same applies to exposures located in third countries, i.e., the competent authorities would have to use the buffer add on calculated by the third country in which the credit institution operates through a subsidiary or a branch.

The design of a dual capital buffering approach was laid out in the Commission services' public consultations of February 2010 and October 2010. The approach effectively entails a combination of policy options 6.2 and 6.3. In terms of its key structural features, it is aligned with the approach of the Basel Committee. Combining the two buffers means that application of the countercyclical buffer would take effect by adjusting the size of the buffer range established by the conservation buffer. As discussed under option 6.3, the countercyclical element would be 'turned on' when there are significant risks that stock of credit has grown to historically high levels. Similarly, other key modalities of operating such a dual capital buffer would remain as presented in discussion of its individual components.

The key advantage of this policy option over the other two alternatives is that by combining them it addresses their respective shortcomings in relation to relevant policy goals, i.e., inclusion of the capital conservation buffer would cover risks on the individual bank level while inclusion of the countercyclical capital buffer would cover risks at the macro level and would make the capital buffers of banks move in a more countercyclical fashion to the economic cycle.

The calibration of this policy option is presented in Table 5 while its impact on the EU banking industry is assessed in section 5.8 (cumulatively with new minimum capital requirements). Capital buffers are expected to have a positive impact on financial stability by design of the measures. By creating an additional buffer when excess credit growth is observed, they should protect banks in downturn periods thanks to a release of the buffer, thereby limiting the risks of negative spill-overs to the real economy. The pro-cyclical effects, therefore, would be mitigated. There may be, however, a risk of negative impact on credit volume in 'catching up' countries. The process of economic catching up is very often accompanied by a deepening of the financial sector and a rapid increase in credit growth. While the financial stability implications of this rapid credit growth should certainly be addressed, a balance must be struck in order not to unnecessarily slow down the recovery/growth acceleration. This concern is addressed by allowing for a supervisory judgement when deciding on the buffer level and timing of activation.

Comparison of policy options

As discussed above, policy option 6.1 is largely ineffective in tackling relevant problem drivers and achieving relevant policy objectives. Policy option 6.2 is more effective than option 6.3 in terms of enhancing banks' capacity to absorb losses over protracted periods of 'stress' in the markets (objective S-1) but is less effective than option 6.3 in terms of operating in a countercyclical manner, which is a precondition for minimizing the cyclicity of bank lending (S-9). Policy option 6.4 addresses the above concerns by combining the two types of capital buffers into one buffering approach.

In terms of compliance costs for the banking industry, option 6.2 would be the most costly and option 6.3 would imply the least compliance costs, as the countercyclical buffer would be applied only in times when credit growth at the aggregate level becomes excessive, whereas costs related to option 6.4 would fall in between the two extremes, depending on its calibration. However, when effectiveness of policy options is considered simultaneously, option 6.4 is identified as the most efficient alternative, and, in turn, as a preferred policy option.

**Table 13:** Summary of policy option effectiveness and efficiency

Policy Option	Policy Option Comparison Criteria			
	Effectiveness			Efficiency
	Enhance adequacy of capital and liquidity requirements [S-1]	Enhance bank risk management [S-2]	Reduce cyclicity of bank lending [S-9]	
6.1 Retain current approach	4	4	4	4

Policy Option	Policy Option Comparison Criteria			
	Effectiveness			Efficiency
	Enhance adequacy of capital and liquidity requirements [S-1]	Enhance bank risk management [S-2]	Reduce cyclicity of bank lending [S-9]	
6.2 Conservation capital buffer	1-2	1-3	3	2-3
6.3 Countercyclical capital buffer	3	1-3	1-2	2-3
6.4 Dual capital buffer	1-2	1-3	1-2	1

Scale of option ranking: 1=most effective / efficient, 4=least effective / efficient

Effectiveness measures extent to which options achieve relevant objectives

Efficiency measures extent to which objectives can be achieved for a given level of resources

## 5.6. Single rule book in banking

The options regarding the deletion of option and national discretions will be referred to in the rest of the analysis as follows:

- **Policy option 7.1:** Retain current approach;
- **Policy option 7.2: Minimum harmonization** of national supervisory approaches through removal of options and discretions and specification of criteria for supervisory judgments and / or choices;
- **Policy option 7.3: Maximum harmonization** of national supervisory approaches through removal of options and discretions and specification of criteria for supervisory judgments and / or choices combined with removal of a possibility to supplement the CRD provisions with national rules in harmonised areas of the CRD;
- **Policy option 7.4: Maximum harmonisation** of national supervisory approaches through removal of options and discretions and specification of criteria for supervisory judgments and / or choices combined with removal of a possibility to supplement the CRD provisions **with some exceptions** in specific areas where gold plating is justified.

### *Policy option 7.1: Retain current approach*

Under this option, national options and discretions will be kept in the CRD together with a 'minimum harmonisation' approach allowing MS to lay down stricter prudential rules.

In prudential terms, stricter prudential rules are usually driven by financial stability concerns. Some MS have decided not to implement certain provisions of the CRD<sup>255</sup>, or to provide for stricter rules<sup>256</sup>. 'Gold-plating' applies to all banks irrespective of the risk to which a given credit institution is or might be exposed. As part of this impact assessment, the Commission services asked CEBS to provide an analysis on areas where MS already 'gold-plates' the directive. Views of European supervisors were mixed as to whether existing 'gold-plating' provisions should be kept. On the one hand, some stressed that 'gold-plating' may prove useful for financial stability in the future. On the other hand, others emphasised that a full harmonisation was crucial in specific areas of the Directive, e.g., own funds, liquidity. Some MS have set the minimum solvency ratio at, e.g., 10% instead of the 8% required by the Directive, on macro-prudential grounds. Under Basel II, however, harmonised Pillar 1 capital requirements are complemented by a Pillar 2 capital requirement. Supervisors shall determine whether banks' own funds ensure a sound management and coverage of their risks, and shall, where appropriate, require higher capital requirements. In contrast, gold-plating – as a means to ensuring financial stability by providing higher minimum capital requirements – does not lend itself to a proportionate and thorough analysis of the risks that banks run. Under Basel III, banks would still be expected to operate above the minimum level of capital requirements as determined by supervisors under Pillar 2. In addition, it must be noted that Basel III would

<sup>255</sup> For the treatment of equity under the CRD, certain MS have not transposed the "PD/LGD" approach, arguing that this leads to less conservative capital requirements as opposed to other methods.

<sup>256</sup> For example, strict LTV requirements for exposures secured by real estate, or high risk weight for speculative real estate programs

considerably increase the level of minimum capital requirements and provide for a macro-prudential tools (e.g., capital buffers) to increase levels of capital when needed for macro-economic reasons. This means that gold-plating the level of minimum capital requirements for reasons of financial stability does not seem to be necessary under Basel III.

Downside to the current gold-plating approach and the existence of national options and discretions is the conflicting requirements at solo and consolidated level that increase compliance burden for groups. This is less of a problem for local banks without entities in other MS. In terms of supervisory convergence, gold-plating and options and national discretions may be detrimental to effective supervisory cooperation in colleges of supervisors as diverging supervisory approaches will not only be driven by different interpretations of a common rule book, but also by different rules laid down by MS to implement the same rule book. EBA would not be fully able to ensure a consistent implementation of Community legislation by providing interpretative guidelines (Article 16 of the EBA Regulation), by contributing to compliance with Union law (Article 17 of the EBA Regulation), and by developing technical standards (Article 18 of the EBA Regulation).

Assuming that the consolidating supervisor 'imposes' the use of a national discretion at group and at local level – as authorised under Article 129(2) – retaining the current approach may also have implications for the level playing field in the host jurisdiction as explained under section 3.6.5.

#### *Policy option 7.2: Minimum harmonization*

Under this approach, options and discretions would be removed, but the CRD would be kept as a minimum harmonisation directive.

Removing options and discretion in isolation is only partially effective in achieving the objectives of reducing compliance burden and enhancing supervisory convergence. In particular, when an option currently allows for a stricter prudential requirement<sup>257</sup>, removing this option by defining a clear set of criteria could be circumvented by the ability of supervisors to require stricter rules. Minimum harmonisation is not fully effective in meeting the objective of ensuring a level playing field. Capital requirements fall within the responsibility of the home supervisors. Banks providing services in a host country – either by free provision of services or through a branch – are not subject to the requirements of the host country which may differ from the requirement in the home country.

Where the exercise of an option currently leads to a less stringent treatment, e.g., 50% risk weight for commercial real estate, its generalisation may be at odds with the objective of financial stability. In keeping with this objective, harmonisation should be done – under this policy option – upwards towards the most prudent standard. In the above example of commercial real estate, this could mean proposing a lower level of loan-to-value (LTV) requirement. Downside to this approach is that harmonisation towards the most prudent standard does not always accommodate differences in local markets.

Under this option, the mutual recognition of national options would be made 'binding' - and not only 'optional' - where options are strictly rooted in local specificities and where mutual recognition would not give rise to regulatory arbitrage. This is in particular the case for country specific exposures<sup>258</sup> where assets are country-specific and cannot be moved around across different entities of a bank.

Because of gold-plating, the option might be partially effective with respect to objective of enhancing supervisory cooperation, because certain degree of differences in national supervisory approaches would be preserved.

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<sup>257</sup> For example, competent authorities may require a risk-weight of 150% for 'high risk items'. The CRD does not provide for clear criteria.

<sup>258</sup> For example, Finnish residential housing companies attracting a preferential treatment under Annex VI, Part 1, point 45 of the CRD



This option would entail compliance costs as banks would have to comply with revised rules. This holds true in particular in relation to banks subject to the IRB approach, where internal systems would have to be slightly changed. For small banks subject to the Standardised approach, the suggested changes would not entail material costs. Their reporting obligations would be affected slightly by the revised rules.

At the same time, this option also is expected to result in compliance cost savings, particularly for institutions with cross-border activities. Such savings are recognised by the industry, but, based on its feedback, are highly difficult to assess, because:

- Reduction of compliance costs would only be of relevance over time. In the short term, the removal of options and discretions would imply compliance with a new single set of rules;
- A uniform reporting would entail a reduction of compliance costs, but it would only be effective by the end of 2012;
- For banks subject to the IRB approach, significance of the reduction of compliance costs depends on whether currently supervisors have come to an agreement regarding the application of a single set of rules across a banking group.

The impact on banks' capital requirements might be significant only in relation to requirements for exposures secured by real estate where harmonization of the currently diverse national rules is suggested, if such harmonization takes place towards the most prudent standard. This impact would vary by MS, depending on whether their current treatment is less or more stringent vis-à-vis the new harmonised treatment, however, overall it is not expected to be material. The removal of other options and discretions (via mutual recognition, deletion, granting choice to institutions and making an option a general rule) would take place in the framework of the existing CRD rules, and therefore would not represent a significant incremental change to capital requirements.

Both home and host supervisors would be affected simultaneously by the removal of options and national discretions. The impact would vary depending on how options have been exercised in various MS. Annex II provides an insight into how national options are used.

#### Policy option 7.3: Maximum harmonization

Under this option, option 7.2 (Removal of options and national discretion) is complemented by a maximum harmonisation approach. As discussed above, the deletion of national options needs to be coupled with a maximum harmonisation approach to fully deliver on the objectives of reducing compliance burden, enhancing level playing field, legal clarity and supervisory convergence. The role of EBA in ensuring a consistent set of harmonised rules would be maximised under this approach.<sup>259</sup>

Under this option, the scope of 'maximum harmonisation' would be clearly circumscribed to Pillar 1 (minimum capital requirements, large exposures rules, liquidity, own funds) and Pillar 3 (disclosure).<sup>260</sup> Other areas of the Directive do not lend themselves to maximum harmonisation, either i) because of the absence of a full harmonisation (e.g., internal governance), or ii) because the decisions are based on specific risk assessments (e.g., Pillar 2). Downside to this approach is that maximum harmonisation may limit the ability of MS to require stricter rules on the financial stability grounds. However, as explained under option

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<sup>259</sup> As a result, EBA will be expected to develop some 50+ technical standards in various policy areas which will have an impact on its human resources requirements and related costs.

<sup>260</sup> I.e., Title V, Chapter 2, section 2 – subsection 3 (minimum level of own funds), Title V, Chapter 2 – sections 3 to 6 (i.e. Articles 76 to 122 covering minimum own funds requirements for credit and operational risk, large exposures and qualifying holdings outside the financial sector) of 2006/48/EC, Title V, Chapter 5 (disclosure by credit institutions) of 2006/48/EC, and Chapter V, section 1 (provisions against risks) and section 4 (large exposures) of Directive 2006/49/EC.

7.1, this shortcoming should not be over-estimated given that supervisors may resort to Pillar 2 to tailor capital requirements to the risks to which a bank is or may be exposed and that Basel III provides for a macro-prudential capital buffer, discussed under section 5.5.<sup>261</sup> Importantly, this option would ensure that firms follow the same rules in all EU markets. This should boost confidence in the stability of credit institutions across the EU, especially in time of stress, and thus enhance the financial stability. The crisis has demonstrated that a clear and transparent regulatory framework was critical to maintain confidence in the market in liquidity stress situations.

It should also be noted that under options 7.1 and 7.2 the application at national level of stricter rules for reasons of the financial stability would only be applicable to domestic banks and subsidiaries of foreign banks in that country. Such regulatory changes would create regulatory arbitrage opportunities for branches in those MS, partly invalidating macro-prudential policy actions. Under this option, a regulation (see section 5.7) would enable the Commission to adopt temporary increases in minimum standards. By doing so, the new rules would be applicable to all EU banking institutions, preventing regulatory arbitrage possibilities and contributing to the effectiveness of macro-prudential policy actions. Nevertheless, in stressed situations, stricter rules may be instrumental in ensuring financial stability. For example, additional requirements in terms of disclosure for securitised exposures have been recommended by CEBS and the Commission to re-establish confidence in the inter-bank market. However, recent experience has proved that Community legislation could be modified on short notice. In addition, implementation of prudential rules by means of a regulation (see section 5.7) would shorten implementation timelines as there would be no need for MS to transpose EU legislation into national law.

In addition, there are circumstances where gold-plating is rooted in market/product specificities or the legal framework of a MS. During public consultations, some supervisors stressed the necessity of being able to introduce stricter quantitative limits (e.g., lower LTV requirements for real estate) in order to make requirements effective given specificities of their local market.

Against this background, there is a merit in considering whether some flexibility in implementing the maximum harmonisation approach under option 7.3 would not benefit the objective of financial stability while effectively contributing to achievement of the remaining specific objectives.

*Policy option 7.4: Maximum harmonization with some exceptions*

Under this option, option 7.3 (Maximum harmonisation) is modified to allow for some flexibility. In its analysis of the scope of full harmonisation in the CRD, CEBS emphasised that a certain degree of flexibility would be needed. It was stressed that a 'single rule book' does not necessarily mean a 'uniform' rule book, and should provide for differences in national treatment where market specificities or specific local products call for a different treatment.

Analysis of CEBS' advice and further discussion with stakeholders suggest that the following areas lend themselves to the application of stricter rules:

- qualifying criteria for applying a preferential treatment of real estate exposures, in addition to or that are stricter than those provided in EU legislation and / or higher risk weights depending on local specificities;
- treatment of lending in foreign currency;
- higher risk weights for 'high risk items' identified by EBA guidelines.

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<sup>261</sup> Whereby, if necessary, national supervisors would be able to set a countercyclical buffer in excess of 2.5%. Such level should apply only to institutions that are incorporated in their jurisdictions. The buffer should be capped at 2.5% for the purposes of calculating the institution specific countercyclical capital buffer of all other institutions that have credit exposures in the jurisdiction in question.

In addition, in order to enhance national and EU financial stability, this policy option foresees a possibility for MS to 'gold-plate' the new minimum requirements that would otherwise be phased in from 2013 to 2019 as outlined in Table 6. This means that MS would be allowed to apply in 2013 the level of capital required by Basel III in 2019.

This approach would be similar to the one adopted in other legislative texts (e.g., the MiFID), which provide for full harmonisation while allowing MS to adopt stricter rules in well identified areas of the text.

Comparison of policy options

Retaining the current scenario (policy option 7.1), implies that the problems described in sections 3.6.4 and 3.6.5 are not addressed and effectiveness of the newly created EBA is compromised. Maximum harmonization (policy option 7.3) is more effective than minimum harmonization (policy option 7.2) or maximum harmonisation with some exceptions (policy option 7.4) with respect to attaining objectives of enhancing supervisory cooperation and convergence (S-7), enhancing legal clarity (S-4) and enhancing level playing field (S-6) as it contains both the deletion of national options and the removal of the possibility to supplement the CRD provisions with national legislation. However, option 7.3 is perceived to be less effective than option 7.4 in terms of achieving the objective of enhancing the financial stability in national MS as it does not cater for specificities of local markets (G-1). In this regard, option 7.4 entails a harmonised and transparent regulatory framework that is intended to enhance the financial stability together with a possibility of applying stricter rules in certain cases.

From the efficiency angle, option 7.3 appears to be the most efficient for banking groups with cross-border operations (due to the greater expected savings of administrative costs), whereas for banks with domestic operations, options 7.2 and 7.4 may be more efficient (lower costs due to fewer changes in national rules due to their harmonisation at the EU level).

In summary, policy option 7.4 (Maximum harmonization with some exceptions) is identified as a preferred option, as it entails the most balanced trade-off between expected effectiveness in terms of contributing towards relevant policy objectives, including the objective of financial stability, and the net administrative cost implications for the EU banking industry.

**Table 14:** Summary of policy option effectiveness and efficiency

Policy Option	Policy Option Comparison Criteria						Efficiency
	Effectiveness						
	Prevent regulatory arbitrage opportunities [S-3]	Enhance legal clarity [S-4]	Reduce compliance burden [S-5]	Enhance level playing field [S-6]	Enhance supervisory cooperation and convergence [S-7]	Enhance financial stability [G-1]	
7.1 Retain current approach	4	4	4	4	4	2-4	4
7.2 Minimum harmonisation	3	3	1-3	3	3	2-4	1-3
7.3 Maximum harmonisation	1-2	1	1-3	1	1	2-4	1-3
7.4 Maximum harmonisation with some exceptions	1-2	2	1-3	2	2	1	1-3

Scale of option ranking: 1=most effective / efficient, 4=least effective / efficient  
 Effectiveness measures extent to which options achieve relevant objectives  
 Efficiency measures extent to which objectives can be achieved for a given level of resources

## 5.7. Choice of policy instrument

This section discusses the options as regards the most appropriate way of implementing the preferred policy choices discussed in sections 5.1-5.6. The key alternatives that were considered are as follows:

- **Policy option 8.1: Amend the CRD** to integrate the proposed provisions
- **Policy option 8.2: Limit the scope of the CRD** to authorization and arrangements for ongoing supervision **and propose a regulation** on prudential requirements for credit institutions

### Policy option 8.1: Amend the CRD

The policy options retained in the sections above could be implemented by amending the existing directives of the CRD: 2006/48/EC and 2006/49/EC. This would maintain coherence of rules in the three areas of:

- authorisation,
- ongoing supervision, and
- prudential requirements

in one single text which MS would have to transpose. Maintaining such coherence would reflect the fact that, in spite of differences as regards subject matter (i.e., authorisation procedures, procedures for ongoing supervision, prudential requirements applicable to the provision of credit) and addressees (i.e., MS, competent authorities, credit institutions), all three areas of rules are interrelated.

Maintaining the form of a directive would enable the EU in all these areas to impose binding requirements on MS but to give them the choice of form and method to achieve them. It would leave MS with a certain degree of flexibility to maintain divergent rules at the stage of transposition of the rules into national law. It would give MS the option of imposing stricter rules than is foreseen in the EU legal act on matters which are not fully harmonised under the preferred policy option 7.4 (Maximum harmonisation with some exceptions). Finally, MS could continue to integrate the rules into national legal texts.

To the extent a directive gives MS the choice of form and method to achieve a result, it enables MS to continue exercising legislative actions on matters where EU action does not provide added value, and thereby reflects the principle of subsidiarity. However, this only applies to matters which are not fully harmonised under the preferred policy option 7.4.

### Policy option 8.2: Limit the scope of the CRD and propose a regulation

The policy options retained in the sections above could also be implemented by two separate instruments: an amendment of the CRD concerning authorisation of credit institutions and arrangements for their supervision by competent authorities, and a new instrument on prudential requirements for credit institutions in the form of a regulation.

Separating prudential requirements from the other areas would reflect differences in subject-matter, nature and addressees. Prudential requirements are rules applicable to credit institutions on an ongoing basis which establish criteria for the evaluation of the risk linked to certain banking services and of the funds necessary to counter-balance those risks. As such, they do not regulate access to deposit taking activities but govern the way in which such activities are carried out in order to ensure protection of depositors and financial stability.

Shaping prudential requirements in the form of a regulation would ensure that those requirements, which already today are worded in the form of obligations applicable to credit institutions ("credit institutions shall..."), will in fact be directly applicable to them. This would prevent the transposition from producing diverging national requirements, interpreted according to diverging cultures, and provide for a harmonised set of core rules applicable in the EU.

At the same time, this instrument could cater for the flexibility needed under the preferred policy option 7.4. First, rules on authorisation and ongoing supervision would continue to be

in the form of a directive. Second, as to the prudential requirements, if in some limited areas flexibility is needed for MS to lay down stricter requirements or implementing provisions, this can be accommodated by an appropriate wording of the regulation. For example, the regulation can explicitly allow MS to impose additional requirements, or it can require and empower MS to lay down implementing provisions in certain limited areas.

A regulation would make the requirements applicable to credit institutions more accessible to entities operating on a cross-border basis, EU citizens, and third country investors and regulators. Moreover, it would clearly demonstrate that credit institutions follow the same rules in all EU markets, which should boost confidence in the stability of credit institutions across the EU, especially in times of stress.

A single regulation directly applicable across the EU would reduce regulatory complexity and firms' compliance costs, especially for credit institutions operating on a cross-border basis as they could rely on identical rules applying throughout the Union.

A harmonised set of rules in a regulation would also contribute to the elimination of regulatory arbitrage opportunities and would reassure depositors that protection standards are equal, encouraging them to benefit from the internal market in banking services.

Comparison of policy options

Policy option 8.2 (Limit the scope of the CRD and propose a regulation) is more effective than option 8.1 (Amend the CRD to integrate the proposed provisions) with regard to contributing to the achievement of objectives of preventing regulatory arbitrage opportunities (S-3), enhancing legal clarity (S-4), reducing compliance burden (S-5), enhancing supervisory convergence (S-7), enhancing financial stability (G-1) and safeguarding depositor interests (G-2), as outlined above.

It also entails a more efficient alternative since a regulation on prudential requirements would enable the EU to implement any changes required by market developments more quickly, as it is usually immediately applicable after adoption by the legislator. Any future modifications of the regulation could be implemented more quickly too, as they would not require transposition by national legislators.<sup>262</sup> That would enable the EU to meet internationally agreed deadlines for implementation, respond swiftly to delays in the implementation of internationally agreed reforms in key third country jurisdictions, and also to react quicker when market developments require changes to the rules. On this basis, option 8.2 is identified as a preferred policy option.

**Table 15:** Summary of policy option effectiveness and efficiency

Policy Option	Policy Option Comparison Criteria						Efficiency
	Effectiveness						
	Prevent regulatory arbitrage opportunities [S-3]	Enhance legal clarity [S-4]	Reduce compliance burden [S-5]	Enhance supervisory cooperation and convergence [S-7]	Enhance financial stability [G-1]	Enhance safeguarding of depositor interests [G-2]	
8.1 : Amend the CRD	2	2	2	2	2	2	1
8.2 Limit scope of the CRD and propose a regulation	1	1	1	1	1	1	1

Scale of option ranking: 1=most effective / efficient, 2=least effective / efficient  
 Effectiveness measures extent to which options achieve relevant objectives  
 Efficiency measures extent to which objectives can be achieved for a given level of resources

<sup>262</sup> However, at the stage of a switch from a Directive to a Regulation MS would need to be given a certain minimum period to adapt their national rules.

## 5.8. Cumulative impact of the package

This section discusses the cumulative impact of preferred options within individual areas as presented in the preceding sub-sections. It looks at the cumulative impact of proposals in terms of additional capital that EU banking industry needs to raise in order to meet the new minimum capital requirements. Next, impact of the proposal on costs related to information provision to supervisors and third parties is discussed. Finally, impacts of tighter capital and liquidity requirements on the EU economy in the transitional period and in the long-term are assessed.

### 5.8.1. Package of preferred options and relevant transitional provisions

The following table summarizes the twenty seven policy options analysed. Individual options within each policy set are ranked in terms of their relative effectiveness<sup>263</sup> and efficiency<sup>264</sup> with regard to achieving applicable longer term policy (specific) objectives. Preferred options, where identified in the impact assessment, are highlighted.

**Table 16:** Summary of policy option effectiveness and efficiency

Policy Option Set	Policy Options	Policy Option Comparison Criteria									Efficiency
		Effectiveness									
		Enhance adequacy of capital requirements	Enhance bank risk management	Prevent regulatory arbitrage opportunities	Enhance legal clarity	Reduce compliance burden	Enhance level playing field	Enhance supervisory cooperation and convergence	Align prudential requirements for SIFIs with the risks they pose	Reduce cyclicity of provisioning and capital requirements	
Liquidity Coverage ratio	1.1 Retain current approach	3	3								3
	1.2 Introduce LCR as specified in Feb 2010 PC	2	2								1
	1.3 Introduce LCR adopted by Basel Committee subject to observation period	1	1								2
Net Stable Funding ratio	2.1 Retain current approach	3	3								3
	2.2 Introduce NSFR as specified in Feb 2010 PC	2	32								2
	2.3 Introduce NSFR adopted by Basel Committee	1	1								1
Eligibility of capital instruments and application of regulatory adjustments	3.1 Retain current approach	5	5	5			5		5	5	5
	3.2 Modify only the eligibility criteria as specified in Feb 2010 PC	4	4	4			4		4	4	4
	3.3 Modify eligibility criteria and regulatory adjustments as specified in Feb 2010 PC	1-3	1-3	1-3			2-3		1	1-3	3
	3.4 Modify eligibility criteria and regulatory adjustments based on Basel approach	1-3	1-3	1-3			2-3		2-3	1-3	2
	3.5 Modify eligibility criteria and regulatory adjustments based on Basel approach with some adjustments for EU specificities	1-3	1-3	1-3			1		2-3	1-3	1
Counterparty credit risk	4.1 Retain current approach	3	3						3	3	3
	4.2 Enhance CCR requirement	2	2						2	2	2
	4.3 Enhance CCR requirements and differentiate treatment of exposures to CCPs	1	1						1	1	1
Leverage ratio	5.1 Retain current approach	3	3							3	3
	5.2 Introduce leverage ratio as specified in Feb 2010 PC	2	2							2	2
	5.3 Conduct extensive monitoring of leverage ratio	1	1							1	1
Capital buffers	6.1 Retain current approach	4	4							4	4
	6.2 Conservation capital buffer	1-2	1-3							3	2-3
	6.3 Countercyclical capital buffer	3	1-3							1-2	2-3
	6.4 Dual capital buffer	1-2	1-3							1-2	1
Single rule book	7.1 Retain current approach			4	4	4	4	4			4

<sup>263</sup> Measures extent to which options achieve relevant objectives

<sup>264</sup> Measures extent to which objectives can be achieved for a given level of resources

Policy Option Set	Policy Options	Policy Option Comparison Criteria									
		Effectiveness									Efficiency
		Enhance adequacy of capital requirements	Enhance bank risk management	Prevent regulatory arbitrage opportunities	Enhance legal clarity	Reduce compliance burden	Enhance level playing field	Enhance supervisory cooperation and convergence	Align prudential requirements for SIFIs with the risks they pose	Reduce cyclicality of provisioning and capital requirements	
	7.2 Minimum harmonization			3	3	1-3	3	3			1-3
	7.3 Maximum harmonization			1-2	1	1-3	1	1			1-3
	7.4 Maximum harmonization with some exceptions			1-2	2	1-3	2	2			1-3
Choice of policy instrument	8.1 Amend the CRD			2	2	2		2			2
	8.2 Limit scope of the CRD and propose a regulation			1	1	1		1			1

Scale of option ranking: 1=most effective / efficient, 5=least effective / efficient

The proposed calibration, including phase-in and grandfathering arrangements, of the package is aligned with the Basel III rules text and is shown in Tables 5 and 6 above.<sup>265</sup>

To set the new level of minimum capital requirement and capital buffers, the Basel Committee conducted a number of supporting analyses.<sup>266</sup> In terms of the new minimum going-concern capital, it found that, for instance, the median of the 99<sup>th</sup> percentile distributions of historical annual risk-weighted returns across six jurisdictions of the Committee is about 5%.<sup>267</sup> With some adjustments for the impact that Basel III is expected to have on RWAs and eligible capital, this served as a basis for the new level of CET1 and T1 capital requirements.

As regards calibration of capital buffers, cumulative net income of 73 banks from 14 countries over the financial crisis period (from Q3 2007 to Q4 2009) as a share of year-end 2006 RWAs was analysed. This analysis showed that mean losses<sup>268</sup> of banks with negative cumulative net income over this period equalled 5% of RWAs. The same analysis found that 'peak' losses, defined as losses over whatever sub-period of the financial crisis that produced the largest negative net income figure, were larger than those incurred for the 'fixed' period of Q3 2007 to Q4 2009. During major crises, when access to capital markets is limited, cumulative losses of such extent can be absorbed only by those banks that have adequate capital buffers, accumulated during more favourable economic conditions.

The rationale for the proposed calibration as well as its impacts on the industry, other economic agents and financial stability are discussed in the remainder of section 5.8.

### 5.8.2. Cumulative impact on the industry

When estimating capital shortfall due to the CRD IV package, the impact of new minimum CET1 requirement and capital buffers is assessed together. This approach reflects the fact that the most demanding capital requirement and thus largest capital shortfall for most EU countries relates to CET1 capital: if banks raise eligible capital to meet the new regulatory CET1 requirement, they will largely meet the new T1 and total capital ratios. This can be seen from Table 17 which under columns labelled 'new' shows capital ratios after application of the CRD III and IV proposals, assuming a full implementation of both proposals as of December 2009. Columns that contain ratios labelled 'old' show capital ratios as of December 2009, i.e., before implementation of both the CRD III and the CRD IV legislative proposals. The 'new'

<sup>265</sup> It needs to be noted that Switzerland has announced its intention to proceed with more stringent requirements than agreed by the Basel Committee. However this pertains to requirements for its two systemically important financial institutions, whereas treatment of such institutions at both the Basel and the EU level has not been finalised.

<sup>266</sup> See <http://www.bis.org/publ/bcbs180.pdf>

<sup>267</sup> Risk-weighted return measured by RORWA and calculated as the ratio of net income to RWAs

<sup>268</sup> When measured with pre-tax, pre-distribution net income

ratios do not reflect the effect of transitional and grandfathering provisions outlined in Table 6, which will mitigate the effective impact on banks' capital ratios in the period up to 2023. Changes in capital ratios are driven by the changes in capital definition rules and RWAs. The preferred policy options outlined in this report are expected to increase the RWAs of EU Group 1 banks on average by 24.5% and RWAs of Group 2 banks – by a modest 4.1%. The extent of capital shortfalls<sup>269</sup> that the EU banking industry would face due to the proposals is estimated to fall in the range of €370 billion or approximately 2.3% of EU banking sector's RWAs as of December 2009, at CET1 of 7% (consisting of a minimum requirement of 4.5% and capital conservation buffer of 2.5%). Of this figure, some €37 billion is attributable to the CRD III proposal<sup>270</sup> and the remainder is driven by the CRD IV amendments. However, the estimate should be viewed as the high end of the capital shortfall because:

- it is based on bank capitalisation levels as of December 2009 which most likely will have increased in response to supervisory and market pressure even if the CRD were not amended,
- estimates do not incorporate the impact of phasing-in and grandfathering provisions that will greatly reduce the extent of capital shortfall in the short run and will spread the impact for most banks during implementation period. More specifically, capital shortfall that the EU banking industry would face at CET1 of 3.5%, effective from 2013, is immaterial, whereas capital shortfall at CET1 of 4.5%, effective from 2015, is estimated at €84 billion<sup>271</sup>,
- it does not capture the interaction between liquidity and capital proposals (i.e., larger proportion of liquid assets that banks will hold in order to comply with LCR will reduce the amount of their RWAs relative to total assets), and
- it is estimated on the combined impact of the proposed calibration for the minimum requirement of 4.5% and the conservation capital buffer of 2.5%; yet only the minimum capital requirement is a critical requirement whose breaching would trigger supervisory intervention, whereas consequences of falling behind the capital buffer target are confined to banks' curtailing their discretionary distributions of earnings. Countercyclical capital buffer is not considered in the above calculation as its add-on would only be in effect when there is an excess credit growth that is resulting in a system wide build-up of risk, but would stay at zero at all other times.

**Table 17:** Capital ratios for Group 1 and Group 2 banks, in %:

Country	Group 1 banks						Group 2 banks					
	CET1		TI		Total		CET1		TI		Total	
	Gross <sup>1</sup>	New <sup>2</sup>	Old	New	Old	New	Gross <sup>1</sup>	New <sup>2</sup>	Old	New	Old	New
L	12,7	9,4	12,7	9,8	15,9	10,5	14,5	13,2	12,2	13,2	13,8	15,2
J	9,4	5,8	12,0	8,7	14,2	10,8	14,5	12,2	14,7	12,2	17,2	12,8
H	11,2	5,1	10,7	5,9	14,7	8,0	10,8	9,2	12,2	9,2	16,4	10,5
E	11,8	4,7	10,7	4,9	14,3	8,0	13,2	9,4	11,4	9,7	12,9	10,7
D	7,4	4,4	8,1	4,8	11,9	6,8	7,7	5,7	9,1	6,1	11,7	7,5
C	10,5	4,4	9,2	5,4	12,6	9,6	9,0	5,4	9,5	5,7	11,2	9,9
G	6,3	3,6	8,6	4,4	12,4	9,2	9,7	8,2	9,8	8,2	14,7	12,4
B	13,1	3,6	8,5	3,8	12,4	4,7	12,0	3,4	8,4	4,7	12,0	6,8
F	7,1	3,4	11,3	3,8	14,0	6,7	18,2	16,9	18,9	18,0	25,2	24,3
A	4,6	1,3	8,3	1,4	11,9	4,6	11,9	7,6	9,4	7,6	12,4	11,5
S							22,7	20,0	14,4	20,0	23,0	22,7
Q							16,1	13,4	13,8	13,4	15,0	14,3
O							16,2	13,3	13,3	13,5	14,3	13,8
R							14,2	11,3	15,5	11,6	16,9	12,4
M							15,5	9,7	12,6	10,9	13,4	13,7
P							10,6	8,8	10,7	8,8	12,7	8,8
N							11,9	7,9	9,0	10,1	12,1	11,9
K							7,4	5,8	9,3	6,8	13,0	10,1
<b>Total<sup>3</sup></b>	<b>10,7</b>	<b>4,9</b>	<b>10,3</b>	<b>5,6</b>	<b>14,0</b>	<b>8,1</b>	<b>11,1</b>	<b>7,1</b>	<b>10,3</b>	<b>7,6</b>	<b>13,1</b>	<b>10,3</b>

**Notes:** Countries sorted based on average net CET1 ratio

<sup>269</sup> Estimated as the sum of capital shortfalls in order to meet the new required CET1 ratio across individual banks participating in the EU QIS, and where capital shortfall was observed, and then extrapolating the figure to cover 100% of the EU banking sector.

<sup>270</sup> In terms of Tier 1 capital, as definition of CET1 did not exist prior to CRD IV proposal

<sup>271</sup> This estimate assumes full deductions, i.e., does not account for phase-in arrangements for deductions (40% in 2015)



<sup>1</sup> 'Gross' is the ratio of new gross CET1 (without deductions) relative to old RWA. <sup>2</sup> New CET1 shows net CET1 (with deductions) relative to new RWA. <sup>3</sup> EU averages for both Group 1 and Group 2 banks include data for two additional countries that are not shown individually.

Source: CEBS

Impacts on individual MS banking sectors will vary, as could be seen from Table 17 that shows country average CET1 ratios separately for Group 1 and Group 2 banks.

Additionally, as of December 2009 there were some €87 billion of state aids in common equity capital in five MS.<sup>272</sup> Under the proposal, existing public sector injections would be grandfathered until 1 January 2018. In the long run, however, they would add to the CET1 capital shortfall, raising it to some €460 billion or 2.9% of the EU banking sector's RWAs. Given the length of suggested phasing-in period, the above capital shortfalls shall be assessed against the possibility of banks running profitable operations and subsequently retaining their profits. The banking sector is not expected to raise the entire shortfall amount in the capital markets. For instance, combined net profit of some 100 biggest EU banks in 2009 was around €33 billion and bank profits are likely to rise as economic situation improves and provisions for non-performing loans decline.<sup>273</sup>

In terms of impact on the CET1 ratio, large EU banks (average CET1 ratio of 4.9%) are affected more by the CRD III and the CRD IV proposals than a sample of 74 large international banks from eighteen<sup>274</sup> Basel Committee countries whose average CET1 ratio as of December 2009 stood at 5.7% upon application of equivalent rules.

As regards the impact of new liquidity requirements, the implications of LCR are discussed in section 5.1.1, while those of NSFR – in section 5.1.2. It should be noted that the estimated shortfalls to comply with LCR and NSFR are not additive since depending on the actions taken to minimize them, decreasing the shortfall in one standard may result in a decrease in the shortfall of the other.

### 5.8.3. *Administrative costs*

Implementation of legislation entails costs for businesses. Costs that are linked to providing information either to public or private parties are called administrative costs. The share of these costs that is specifically linked to information that businesses would not collect and provide in the absence of a legal obligation is called administrative burdens. The Commission's Better Regulation strategy is aimed at measuring administrative costs and reducing administrative burdens.<sup>275</sup> In the area of prudential banking regulation, certain information requirements are necessary to provide for the desired level of financial stability and creditor protection and, hence, should be set at a level that ensures an equilibrium between ensuing administrative burdens and the benefits that they yield. With regard to the legislative changes brought forward with this initiative, it has to be noted that they were undertaken with a view to achieving multiple operational, specific and general objectives (see section 4 of the impact assessment) and had to be designed accordingly.

In August-September 2010, the Commission services distributed a questionnaire to the GEBI members about the impacts of CRD IV proposal on administrative burdens. Analysis of replies showed that, overall, the biggest impacts on both the on-going administrative burdens and the related one-off implementation costs are expected due to new measures in the area

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<sup>272</sup> The total sum of state aids is not representative for the entire QIS sample as data was not available for all participating MS

<sup>273</sup> Source: Bloomberg, Orbis, Commission services' calculation. It needs to be pointed out that this figure is not distributed evenly across banks but reflects significant crisis-related losses for a number of large European banking groups

<sup>274</sup> Australia, Belgium, Canada, China, France, Germany, Italy, Japan, Korea, the Netherlands, Saudi Arabia, Singapore, South Africa, Spain, Sweden, Switzerland, the UK, the US.

<sup>275</sup> For more on the Commission's approach towards dealing with administrative costs and burdens please see: [http://ec.europa.eu/governance/better\\_regulation/admin\\_costs\\_en.htm](http://ec.europa.eu/governance/better_regulation/admin_costs_en.htm)

liquidity risk management, comprising roughly 70% of all administrative burdens. Proposals for the counterparty credit risk were also identified as a source of significant administrative burdens for Group 1 banks. The Commission services conducted a rough estimation of administrative burdens for each area of proposals linked to Basel III (see Annex VIII). As regards proposal for the 'single rule book', the number and, particularly, the diversity of replies received were insufficient to assess its varying impact by MS (which depends on the degree to which options and discretions are exercised) and bank type. In this regard, banks with more cross-border activity would benefit from harmonisation of the current national provisions the most as the ensuing administrative burden savings are expected to reduce administrative burdens of the Basel III-related policy measures.

#### 5.8.4. *Economic impact in transitional period*

A key factor determining banks' responses to new capital and liquidity standards is the length of the period during which the new requirements will be phased in. If the transition period is short, banks may choose to curtail credit supply or adjust capital composition in order to lift capital ratios. A longer transition period could substantially mitigate the impact, allowing banks to retain more of their profits (by reducing dividend payments or improving operational efficiency), issue new equity, reduce fixed costs or take other necessary steps to adjust. To inform the policy question of appropriate transitional provisions, the Basel Committee and the FSB set up a Macroeconomic Assessment Group (MAG) whose members were macroeconomists and econometricians from central banks, regulatory agencies and international institutions. This section overviews its main conclusions as well as those of certain macro-models pertaining to the EU countries or the euro zone. For the full analysis of MAG please see its Interim and Final Reports that were published in August and December 2010.<sup>276</sup>

When applying the MAG's key findings in the EU context, it is important to note that its work was based on a high number of macroeconomic models developed and used for policy analysis in central banks and international organisations, with a high representation of models pertaining to MS or broader regions of the EU. The group's Interim Report was based on the results of 89 individual macroeconomic models<sup>277</sup>, of which 51 models relate to the EU<sup>278</sup>, whereas its Final Report used 97 modelling simulations, of which 49 relate to the EU.<sup>279</sup> MAG modelled implementation scenarios of 2, 4, 6, and 8 years. The transitional periods of 4 and 8 years are presented below in more detailed, as they were given more consideration in Basel III deliberation process.

##### 5.8.4.1. Four-year implementation period

Macro-economic impacts of the new standards over an implementation period of four years were estimated using 89 individual models. The median estimate showed that for each percentage point increase in capital requirements that is implemented gradually over 4 years,

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<sup>276</sup> See <http://www.bis.org/publ/othp10.htm>, <http://www.bis.org/publ/othp12.pdf>

<sup>277</sup> The key results are reported based on 89 'standard' models, i.e., standard semi-structural and DSGE models used for policy analysis and forecasting. In addition, MAG's members used 15 'satellite' models that estimate changes in lending spreads and volumes resulting from specified changes in target capital and liquidity ratios, 13 bank-augmented DSGE models, i.e., dynamic stochastic general equilibrium models incorporating banking sectors and financial frictions, and 8 reduced form models (vector auto-regression and other reduced-form models).

<sup>278</sup> Of them, 6 models relating the euro area, 9 to FR, 7 to DE, 8 to IT, NL and ES each, and 5 to the UK.

<sup>279</sup> Of them, 20 models relating the euro area, 7 to NL and IT each, 5 to the UK, 4 to FR and 3 to DE and ES each.

after 4.5 years (18 quarters)<sup>280</sup> from the start of implementation the GDP would decline by 0.19% relative to a baseline scenario, consisting of a 0.16% decline as estimated by national authorities and an additional drop of 0.03% due to international spill-over effect that was estimated separately by the IMF.<sup>281</sup> As regards the estimation results of national authorities, the vast majority of them are clustered around the median and within the range of 0.07% - 0.31% when the top and bottom fifth of distribution are excluded (see the bottom panel of Chart 17). Therefore, for a 2.9 percentage point increase in required capital (see section 5.8.2) such median estimate results in a GDP decline of 0.6% after 4.5 years from the start of implementation.<sup>282</sup> The 51 models relating to the EU MS or MS groups produced a median which is similar to that of the overall sample of models. The projected impacts arise mainly from banks passing on higher costs to borrowers with a median estimated increase in lending spreads of 15 basis points after 4.5 years (for each percentage point increase in capital requirements), which results in a slowdown in investment.

A sub-set of models that account for the credit supply effects, i.e., tightening lending standards (in addition to effects of increasing lending spreads) for each percentage point increase in capital requirements produced a median decline in the GDP of 0.32% after 4.5 years from the start of implementation. For a 2.9 percentage point increase in required capital this is equivalent to a GDP decline of 0.9%. Easing of the monetary policy may reduce such estimated output losses. In this respect the MAG estimated that such offsets are especially pronounced in models that incorporate credit supply constraints, reducing the GDP loss from 0.32% to 0.17%, for each percentage point increase in capital.

MAG also assessed impact of tightening liquidity requirement consisting of 25% increase in holding of liquid assets, i.e., impact of LCR. This produced a median fall in the GDP of 0.08% below the baseline over 4.5 years. This estimate is equivalent to a decrease in the GDP of 0.11% below the baseline for the EU, given the estimated increase in holdings of eligible liquid assets of 34% for the EU's banking industry (see section 5.1.1). Notably, impacts of tighter capital and liquidity requirements by MAG were assessed separately whereas some positive offsetting effects between holding of liquid assets and capital requirements are expected, i.e., a higher share of more liquid and less risky assets to total assets will result in a decline in banks' RWAs relative to their total assets.

Among the models considered by MAG were those used routinely by the Commission and ECB. ECB's multi-country model of five largest EU MS (DE, FR, IT, ES, NL) for each percentage point increase in capital ratio, considering effects on both credit spreads and lending standards, estimated a GDP reduction of 0.19% 4.5 years after the start of implementation. For a 2.9 percentage point increase in required capital this produces a GDP decline of 0.6%. ECB's Christiano-Motto-Rostagno DSGE model, used for policy analysis, for each percentage point increase in capital requirements produced a decline of 0.29% over 4.5 years, or, a 0.8% decline for 2.9 percentage point increase in capital requirement.

#### 5.8.4.2. Eight-year implementation period

Macro-economic impacts of the new standards over an implementation period of eight years were estimated using 97 individual models. The median estimate showed that for each percentage point increase in capital requirements that is implemented gradually over 8 years, after roughly 9 years (35 quarters)<sup>283</sup> from the start of implementation the GDP would decline

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<sup>280</sup> The largest GDP impact for the four-year implementation scenario is realised after 4.5 years from the start of the implementation.

<sup>281</sup> Reflecting exchange rates, commodity prices, shifts in global demand.

<sup>282</sup> The GDP-impact estimates produced by MAG were in most cases linear to changes in bank capital

<sup>283</sup> The largest GDP impact for the eight-year implementation scenario is realised after 35 quarters (almost 9 years) from the start of the implementation.

by 0.17% relative to a baseline scenario, consisting of a 0.15% decline as estimated by national authorities and an additional drop of 0.02% due to international spill-over effect (see the bottom panel of Chart 17). Therefore, for a 2.9 percentage point increase in required capital such median estimate results in a GDP decline of 0.5% after 9 years from the start of implementation. The projected impacts result from a combination of wider lending spreads (median increase of 15.5 basis points after 9 years, for each percentage point increase in capital requirements) and reduced lending volumes (median decline of 1.4% after 9 years, for each percentage point increase in capital requirements).

Models that seek to take account of effects of tightening lending standards (in addition to effects of increasing lending spreads) generate a stronger macroeconomic impact than those without such effects. For each percentage point increase in capital requirements, these models produced a median decline in the GDP of 0.23% after 9 years from the start of implementation.<sup>284</sup> For a 2.9 percentage point increase in required capital this is equivalent to a GDP decline of 0.7%. Easing of the monetary policy may reduce output losses from 0.23% to 0.16%, for each percentage point increase in capital.

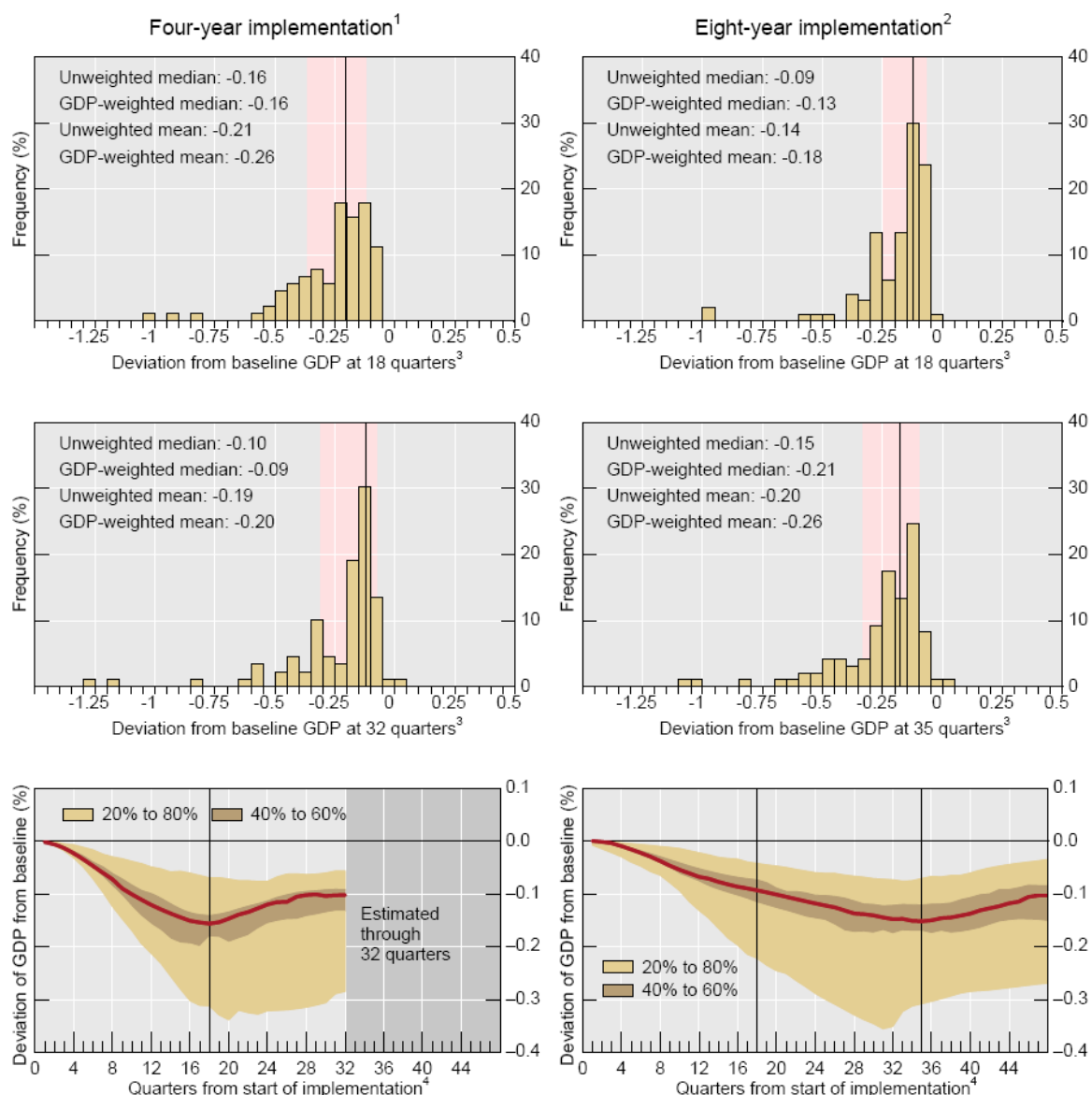
According to the Commission's bank-augmented DSGE model (QUEST III) calibrated to cover all 27 MS, the GDP declines by 0.14% 9 years after start of implementation of the new proposals for each percentage point increase in Tier 1 capital ratio.<sup>285</sup> This translates in a cumulative decline of the GDP of 0.42% for an increase in regulatory capital of 2.9 percentage points (for more details on the Commission's model as well as a comparison of industry and public sector modelling outcomes, please see Annexes IX and X).

**Chart 17:** Aggregate impact of one percentage point increase in the target capital ratio: distribution of GDP deviation across all models, in %

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<sup>284</sup> Including international spill-over effect of 0.02%

<sup>285</sup> Under the conservative assumption that Modigliani-Miller (MM) theorem does not hold which was also assumed by MAG. For more on MM see section 5.8.5 and Annex IX. Note that QUEST III is modelled on the basis of Tier 1 capital ratio. Given that CET1 capital is part of Tier 1, QUEST III modelling results presented in Annex IX are applied in the context of CET1 ratio shortfalls. The calculation is as follows: -0.36% deviation in GDP from baseline by 2019 divided by 2.5 percentage point increase in capital ratio = -0.144% deviation in GDP from baseline by 2019 for one percentage point increase in capital ratio.



**Notes:** <sup>1</sup> Distributions are computed across the 89 cases used in the MAG Interim Report, excluding those designed to measure the impact of international spill-overs. <sup>2</sup> Distributions are computed across the 97 cases contributed for the MAG Final Report, excluding those designed to measure the impact of international spill-overs. <sup>3</sup> The shaded areas indicate the range between the 20th and 80th percentile. The vertical line indicates the unweighted median at the quarter indicated (measured from the start of implementation). <sup>4</sup> The vertical lines indicate the 18th and (for the eight-year case) 35th quarters. **Source:** Basel Committee

### 5.8.4.3. Optimum implementation period

In addition to the above transition scenarios, MAG also examined implementation alternatives of two and six years. For instance, a two year implementation period led to the largest reduction from the baseline path with the trough occurring after two and a half years: the GDP would fall a maximum 0.22% relative to the baseline, including international spill-over effects for a one percentage point increase in capital. Overall, shorter implementation scenarios have a greater impact on annual GDP growth rates since the projected decline in the level of GDP relative to baseline would take place over a shorter time (see Table 18).

**Table 18:** Overview of the implementation period scenarios for new capital standards

Implementation period	Result / Model	Source	Timing of estimated decline in GDP since start of implementation	Decline in GDP below baseline per percentage point increase in capital requirement, %	Estimated decline in the EU GDP below baseline due to capital shortfall, %	Estimated annual decline in the EU GDP growth below baseline, %
			A	B	C=B*2.9	$D=(1+C)^{(1/(A/4))}-1$
Two years	Median of 89	MAG	10 quarters	0.22	0.64	0.22

			Timing of estimated decline in GDP since start of implementation	Decline in GDP below baseline per percentage point increase in capital requirement, %	Estimated decline in the EU GDP below baseline due to capital shortfall, %	Estimated annual decline in the EU GDP growth below baseline, %
	models					
Four years	Median of 89 models	MAG	18 quarters	0.19	0.55	0.10
	Median of 16 models with impact on lending standards	MAG	18 quarters	0.32	0.93	0.16
	Median of 11 models with impact on lending standards and endogenous monetary policy	MAG	18 quarters	0.17	0.49	0.09
	Multi country model (with lending standards)	ECB	18 quarters	0.19	0.55	0.10
	Christiano-Motto-Rostagno model	ECB	18 quarters	0.29	0.84	0.15
Eight years	Median of 97 models	MAG	35 quarters	0.17	0.49	0.05
	Median of 12 models with impact on lending standards	MAG	35 quarters	0.23	0.67	0.06
	Median of 14 models with impact on lending standards and endogenous monetary policy	MAG	35 quarters	0.16	0.46	0.04
	Multi country model (with impact on lending standards)	ECB	35 quarters	0.08	0.25	0.03
	Christiano-Motto-Rostagno model	ECB	35 quarters	0.39	1.12	0.09
	DSGE bank-augmented model	European Commission	36 quarters	0.14	0.42	0.04

Sources: Basel Committee, ECB, European Commission

A longer implementation period shall minimize any potential transitory effects on GDP and credit availability. This is in part because the maximum GDP loss is estimated to occur around the end of the transition period, which could be at a more mature and resilient stage of the current recovery. Lengthening of the implementation period would also:

- give banks more time to adjust their business models and cost structures;
- allow more time for stable non-bank channels of credit intermediation to develop;
- reduce the severity of the impact of lending cuts on bank-dependent sectors, and
- give markets more time to absorb the asset sales, debt issues and equity issues that might accompany banks' balance sheet adjustments.

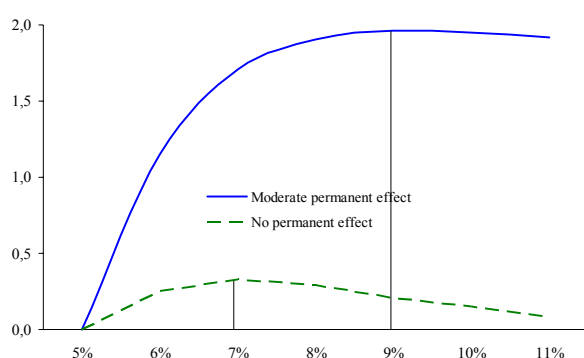
Hence, the transitional phase-in and grandfathering provisions for the capital requirements agreed by the Basel Committee and outlined in Table 6 are likely to accommodate the above adjustment processes the most as they effectively imply an eight-year transition period from 2011 to 2018. As regards the optimum implementation timing for the new liquidity requirements, given their novelty and the related possibility of unintended consequences on financial institutions of different sizes and business lines, observation periods coupled with review clauses are justified. LCR, including any revisions will be introduced on 1 January 2015, while NSFR, with appropriate revisions, will move to the minimum standard on 1 January 2018.

In summary, work of the Basel Committee's MAG, ECB and the Commission on the assessment of macroeconomic costs show that the *transition to stronger capital and liquidity standards is likely to have a limited impact on the aggregate output*. It shall be emphasised that the above analyses measured only transitional costs without considering benefits from enhanced financial stability and mitigated pro-cyclicality which would start to accrue immediately, and extent of which can be inferred from a discussion of long-term economic effects presented in section 5.8.5 below.

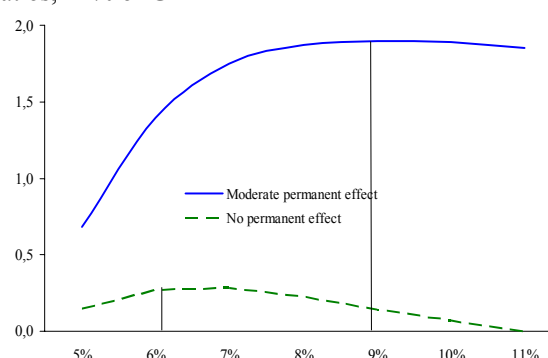
### 5.8.5. Long-term economic impact

Assessment of the long-term implications of the CRD IV proposal is based on the work conducted by the Basel Committee and the Commission together with the academics. The Basel Committee's assessment of the long-term economic impact (LEI) is summarised in the report published in August 2010.<sup>286</sup> By examining the historical data and a number of studies on the economic costs of systemic crises, the report finds that there are *clear net long term economic benefits from increasing the minimum capital and liquidity requirements from their current levels in order to raise the safety and soundness of the global banking system*. Charts 18 and 19 illustrate expected net economic benefits for a range of CET1 capital ratios, separately for meeting new capital requirements, and capital and liquidity requirements together.

**Chart 18:** Long-run expected annual net economic benefits of increases in capital requirements for a range of CET1 ratios, in % of GDP



**Chart 19:** Long-run expected annual net economic benefits of increases in capital requirements and meeting liquidity requirements for a range of CET1 ratios, in % of GDP



**Notes:** LEI working group's assessment of net benefits was done on the basis of the ratio of tangible common equity (common equity net of goodwill and intangibles) to RWAs under Basel I and II definitions. These ratios were adjusted by 70% to arrive at CET1 ratio equivalents for the EU banking sector which reflect a 17% increase in RWAs and additional deductions on top of goodwill and intangibles of 18% under the capital definition proposals (adjustments based on the results of the EU QIS data). Vertical lines indicate capitalization levels at which marginal net economic benefits cease being positive.

**Source:** Basel Committee, European Commission calculation

Considering the impact of meeting only new capital requirements (Chart 18), net economic benefits are positive for the range of CET1 ratios up to 11%, however, they stop increasing marginally at 9.1% CET1 under the 'moderate permanent effect' scenario (annual benefit of increase in GDP of 1.96%) and at 7% CET1 under the 'no permanent effect' scenario (annual benefit of increase in GDP of 0.33%).<sup>287</sup> Similar dynamics is observed when meeting of new liquidity requirement is considered, with the marginal net economic benefits rising up to CET1 levels of 6.3% and 9.1% under the 'no permanent effect' and 'moderate permanent effect' scenarios, respectively. This implies that optimum calibration of the new requirements might be in the range of CET1 ratios of 6%-9%, or higher, given the conservative approach undertaken, as explained below.

The above benefits of higher capital and liquidity requirements accrue from reducing the probability of financial crisis and the output losses associated with such crises.<sup>288</sup> It needs to be noted that the approach adopted by the working group was rather conservative: above quantification of economic benefits did not include those stemming from reduced severity of

<sup>286</sup> BCBS, *An Assessment of the Long-Term Economic Impact of Stronger Capital and Liquidity Requirements*, August 2010; <http://www.bis.org/publ/bcbs173.htm>

<sup>287</sup> Under "large permanent effect" scenario net benefits keep rising beyond the 11% CET1 ratio, reaches the level of annual increase in GDP of 5.9% (this scenario is not shown in the chart).

<sup>288</sup> Based on LEI analysis, the Commission services estimate that complying with the LCR requirement and the new capital requirements can be expected to reduce the probability of a systemic crisis by some 70%

future crises and reduced pro-cyclicality in the system, given anticipated effects of countercyclical policy measures that are included in the proposal. On the cost side, assumptions were equally conservative, including a full pass through of costs to customers via lending rates, no reduction in cost of debt and equity with an ROE assumption based on a high historical average (15%). According to the Modigliani-Miller (MM) propositions, increases in banks' capital levels shall reduce their leverage and, by making returns to their investors less volatile, the cost of equity.<sup>289</sup> In this respect, macro-economic modelling of the Commission services showed that when the MM propositions are assumed to hold at least partially (50%), economic costs of the new rules in terms of their impact on the GDP are reduced in half by 2020-2030 (see Annex IX).<sup>290</sup> The cost of debt may decline as well because of enhanced bank capitalization levels. This would further reduce the impact on lending rates and, via them, on the GDP. Therefore, actual net economic benefits could be higher across the CET1 ratios shown in Charts 18 and 19.

In addition to the benefits from reducing output losses associated with reduced frequency of banking crises, higher capital and liquidity requirements may also reduce the amplitude of normal business cycles. Higher capital and liquidity ratios permit banks to absorb losses in downturns and restrain lending in an expansion, thereby smoothing the supply of credit over the cycle, and, as a consequence, also investment and consumption. BCBS' working group on LEI assessed this impact by using dynamic stochastic general equilibrium (DSGE) models that explicitly integrate bank capital and measures of liquidity. The group found that a 2 percentage point increase in capital ratio reduces the standard deviation of output by 2 percentage points, based on the median estimate across the models used. When considering a possibility of introducing a counter-cyclical capital buffer, which causes the capital requirement to increase in step with the credit-to-GDP ratio<sup>291</sup>, the analysis showed that the volatility of output would be reduced substantially, with the standard deviation declining by almost one fifth with respect to a baseline in which no counter-cyclical capital rules are implemented.

Another macro-economic cost-benefit analysis of Basel III has been conducted by the Commission services and academics<sup>292</sup> by coupling the SYMBOL model<sup>293</sup> with a framework proposed by the Bank of England to estimate the impact of tightening capital requirements on the GDP<sup>294</sup>. This analysis looked at the long-term economic impact of the new framework in seven EU MS.

Regarding the impact on the probability of a systemic banking crisis<sup>295</sup>, the analysis found that it depends on how much banks will recapitalize under Basel III. Results showed that

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<sup>289</sup> Modigliani, F., and M. Miller, *The cost of capital, corporation finance and the theory of investment*, The American Economic Review, 48, 1958

Miller M., *Do the M&M propositions apply to banks?*, Journal of Banking & Finance, 19, 1995

Miles, D., Yang, J., and G. Marcheggiano, *Optimal bank capital*, Bank of England Discussion Paper No. 31, January 2011

<sup>290</sup> When MM propositions are assumed to hold entirely (i.e., 100%), the scenario of regulatory change in terms of economic costs (measured as impact on the GDP) by 2020-2030 does not differ from the baseline scenario.

<sup>291</sup> Based on the simulations using a prudential rule that increases the capital requirement when the credit-to-GDP ratio increases so as to generate movements of the capital ratio in the neighbourhood of  $\pm 2$  percentage points around its steady state

<sup>292</sup> M. Marchesi, S. Zedda, F. Campolongo, R. De Lisa, J. Cariboni, M. Petracco Giudici, *Basel III: a macro-economic cost-benefit analysis*, 2010, JRC EUR Report 61485, EUR 24603 EN (mimeo, forthcoming)

<sup>293</sup> The SYMBOL model (SYstemic Model of Banking Originated Losses)

<sup>294</sup> Bank of England, *Financial Stability Report*, Box7, 2010; see <http://www.bankofengland.co.uk/publications/fsr/2010/fsr27.htm>

<sup>295</sup> The probability of occurrence of a systemic banking crisis is derived from the distribution of liquidity shortfalls of the banking system on the basis of the definition that a systemic banking crisis occurs



when banks recapitalize to 10.5%<sup>296</sup> level, the probability is reduced within the range of 29% to 89%. Given the estimated reduction in the probability of a systemic banking crisis, the analysis found substantial net economic benefits of the new framework for two MS and a more neutral net economic effect in the remaining five MS analysed.

### 5.9. Impacts on SMEs

A recent study<sup>297</sup> commissioned by the Commission finds that internal financing is the most common source of SME financing, and includes owner investment, funding through retained profits and sale of assets. As regards the financing from external sources, bank credit is the most significant.<sup>298</sup> In this respect, the study found that there is a significant positive effect of the business cycle on bank loans to medium-sized firms, with the effect on small firms also significant but smaller.<sup>299</sup> This effect might be explained by a number of regulatory and market failures, including the problem of asymmetric information.<sup>300</sup> When economic conditions become depressed and collateral values decline, information asymmetries with respect to the quality of clients' balance sheets make obtaining the bank credit difficult even for clients with profitable projects. When economic conditions improve and collateral values rise, the opposite situation tends to occur. In this regard, lending to SMEs is affected more than lending to large companies as SMEs are not subject to external ratings and extensive disclosure requirements.

Therefore, SMEs, to the extent that they are credit rationed, are expected to be the primary beneficiaries of smoothed pro-cyclicality (see section 5.8.5) brought about by the enhanced counter-cyclical properties of the EU bank capital regulation, including capital buffers, improved adequacy and quality of regulatory capital and the leverage ratio. These changes will allow SMEs to engage in projects that are profitable and vital for the economic growth and prosperity not only during an expansionary leg of the cycle, but, more importantly, when the economic climate turns sour. As importantly, the proposals will benefit SMEs and their workforce further by smoothing the cyclicality of demand for the products and services that they generate, given that SMEs contribute some 60% of the total value added of the EU's non-financial business economy.<sup>301</sup>

According to the Commission macroeconomic model, compliance with the new capital framework is expected to reduce the stock of loans on average by 1.8% and increase loan rates on average by some 29 basis points by 2020-2030.<sup>302</sup> However, it needs to be stressed

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where losses or liquidity shortfalls are higher than a certain threshold, beyond which public authorities find it difficult to avert the spreading of a crisis. In particular, it is assumed that the threshold for a systemic banking crisis in any country corresponds to 3% of its GDP.

<sup>296</sup> Consisting of total capital requirement of 8% and conservation buffer of 2.5%

<sup>297</sup> EIM, *Cyclicality of SME Finance*, March 2009

<sup>298</sup> According to this study, for a sample of 10 EU countries the share of short- and long-term bank loans in total SME capital were in the range of 3-17% and 7-31%, respectively

<sup>299</sup> The first report of the Commission on the effects of the CRD on the economic cycle also notes that SMEs were less successful than large enterprises in obtaining a bank credit for which they had applied in October 2008 – September 2009 (i.e., economic recession in most EU Member States) and that among those companies that have been adversely affected by bank credit availability, obtaining the needed funds from other sources was also more difficult for SMEs; see [http://ec.europa.eu/internal\\_market/bank/docs/regcapital/monitoring/23062010\\_report\\_en.pdf](http://ec.europa.eu/internal_market/bank/docs/regcapital/monitoring/23062010_report_en.pdf).

<sup>300</sup> The drivers behind cyclicality of bank lending are discussed in section 3.5.1

<sup>301</sup> Eurostat, *European business facts and figures*, 2009

<sup>302</sup> Specification of the Commission's QUEST model and more detailed presentation of modelling of the Basel III impacts on the EU economy are provided in Annex IX. It needs to be noted that modelling outputs in Annex IX are expressed as a change in a variable for 2.5 percentage point increase in Tier 1 capital ratio. For this reason, estimates have to be rescaled to assess the impact of a shortfall of CET1 capital of 2.9% of risk-weighted assets. In this calculation, it was assumed that capital shortfalls expressed as percentage points of Tier 1 and CET1 capital are comparable, given that CET1 is part of Tier 1. Hence,

that costs of a comparable extent most likely would arise even in the absence of a regulatory reform, due to the market pressure and expectations with respect to enhanced post-crisis bank capital levels and liquidity management.

While the proposals are expected to lead to a higher cost of bank credit – which is compensated by social benefits - across the entire spectrum of bank customers, SMEs are expected to be impacted less than their large counterparts. Even though the start of Basel III transitional period has been set for 2013, most banks have embarked on a de facto transition to complying with the new rules following the publication of the framework in late 2010 and early evidence (Q4 2010 and Q1 2011) on the impact of costs related to bank capital and liquidity position on credit standards for loans and credit lines shows that more euro area banks tightened their credit standards for large enterprises than for SMEs.<sup>303</sup> SMEs are expected to be impacted less severely also to the extent that they transact more with smaller Group 2 banks<sup>304</sup>, whose capital and liquidity shortfalls are estimated to be smaller than those of Group 1 banks (see Table 19). In a similar vein, it is expected that the proposals, by accommodating certain specificities of the EU cooperative, mutual and similar banks (e.g., see policy options 1.3 and 3.5), will reduce the compliance costs for these institutions and in turn result in smaller indirect costs to their customers, including SMEs.

**Table 19:** Overview of impacts of various proposals by bank group

Policy area / proposed measure(s)	EU averages	
	Group 1 banks	Group 2 banks
Liquidity risk <sup>1</sup> :		
Liquidity Coverage Ratio, %	66.5	87.1
Net Stable Funding Ratio, %	91.1	93.9
Rules on capital definition, CET1 capital ratio, %	5.8	7.1
Rules on counterparty credit risk, % change of total RWAs	9.7	0.2
Leverage ratio, % <sup>1</sup>	2.5	3.5
Combined impact of CRD III and CRD IV on:		
Total RWAs, % change	24.5	4.1
CET1 capital ratio, %	4.9	7.1

**Notes:**<sup>1</sup> Based on Basel III definitions, in the EU will be subject to monitoring periods and follow-on re-calibration

**Source:** CEBS

The extent to which costs of Basel III implementation would be passed onto bank customers is also unclear given that exposure to the new measures, as shown by the EU QIS, is not uniform across banks while their market power on the lending market may be too weak. In this regard, upon full application of CRD III and the CRD IV proposal some 25% of Group 1

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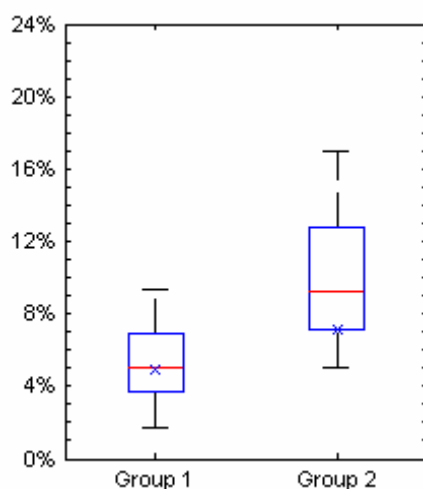
impact of the proposal on loan rates is derived as follows: 0.25 (average increase in loan rate by 2020-2030, 0% MM offset, expressed in percentage points) / 2.5 (increase in Tier 1 ratio, expressed in percentage points) x 2.9 (regulatory capital shortfall in percentage points expressed as CET1 capital over risk weighted assets) = 0.29 percentage points. Using the same rationale, impact of the proposal on the stock of loans is derived as follows: -1.51 (average decrease in stock of loans by 2020-2030, 0% MM offset, expressed in %) / 2.5 (increase in Tier 1 ratio, expressed in percentage points) x 2.9 (regulatory capital shortfall in percentage points expressed as CET1 capital over risk weighted assets) = -1.8%.

<sup>303</sup> ECB, *The euro area bank lending survey*, April 2011

<sup>304</sup> Some research shows that smaller banks are more prone to lend to SMEs because they are better suited for the 'relationship lending', which is primarily based on information gathered by the loan officer through continuous, personalized and direct contacts with SMEs, their owners and managers, and the local community in which they operate. E.g., see Berger, A., L. Klapper, G. Udell, *The Ability of Banks to Lend to Informationally Opaque Small Businesses*, Journal of Banking Finance 25, 2001

banks and some 75% of Group 2 banks had CET1 capital ratio in excess of 7% already at the end of 2009 (see Chart 20).

**Chart 20:** Distribution of CET1 capital ratios for Group 1 and Group 2 EU banks following the application of CRD III and the CRD IV proposal <sup>305</sup>



Source: CEBS, EU QIS

Furthermore, the distribution of CET1 ratios of Group 2 banks indicates that the smaller the bank the higher its CET1 ratio.<sup>306</sup> In competitive markets, such asymmetric shocks are typically much more difficult to pass onto customers.<sup>307</sup>

Moreover, monitoring periods foreseen for LCR, NSFR and the leverage ratio in combination with extended phase-in and inclusion of grandfathering provisions are expected to give banks necessary time to adjust their business models accordingly and provide lending to companies to support economic growth. Also, the proposal includes a review clause on the preferential risk weight for exposures to SMEs under €1 million that is currently available for banks applying the standardised approach for credit risk. The preferential treatment is retained in the proposal and EBA is tasked with preparing an analysis for the Commission on whether the current level of the risk weight and the cap for its application are commensurate with the actual credit loss history of such exposures over a full economic cycle.

Most importantly, higher cost of credit in the long run will be offset by important *economic and social benefits accruing not only to SMEs but a wide range of stakeholders, including corporate and individual borrowers and creditors, governments, and the EU citizens in general*, due to the anticipated reduction in a frequency of banking crises, the extent of net economic benefits whereof was assessed in the preceding section.

<sup>305</sup> In the plot, the mean is shown with the "x", the median is shown with the red line, 25<sup>th</sup> and 75<sup>th</sup> percentiles of the distribution are delineated by the blue box, while the black horizontal lines mark 10<sup>th</sup> and 90<sup>th</sup> percentiles of the distribution. In the EU QIS, sample means were calculated on the basis of the 'composite bank'; in this case, by dividing the sum of CET1 capital by the sum of risk-weighted assets. A median represents the value that separates the higher half of the sample from the lower half. An X<sup>th</sup> percentile distribution represents the value that separates X% of lower values from (100%-X%) higher values of the sample.

<sup>306</sup> As roughly three quarters of banks in the Group 2 sample had CET1 capital ratios in excess of the sample mean of 7.1%.

<sup>307</sup> ECB euro area bank lending surveys show that pressure from competition plays an important role in offsetting the impact of factors that drive banks to tighten their credit standards. See ECB, *The euro area bank lending survey*, April 2011

## 6. MONITORING AND EVALUATION

It is expected that the proposed amendments will start entering into force in 2013. The amendments are tightly inter-linked with other provisions of the CRD, that are already in effect since 2007-2008 or that will come into effect following the implementation of CRD II and CRD III (see Table 2).

Normally, the practice at the Commission is to conduct an evaluation of a legislation some four years after its implementation, however, given the three waves of revisions that the CRD will have undergone in 2008-2011 (which may be followed by additional amendments in the near future) it might be sensible to conduct a comprehensive evaluation of the CRD that would be based on the entirely overhauled capital framework, which complicates setting of such target date.

At the same time, the current and recent proposals underscore the importance of timely and appropriate changes of the rules in response to the market events. Therefore, it is likely that individual provisions of the CRD will continue to be formally evaluated on a piecemeal basis, following the outcomes of various monitoring exercises both at the EU and the international level or a necessity to act as dictated by the markets.

Special arrangements will be put in place by the Basel Committee and EBA to ensure that necessary data for the monitoring of leverage ratio and the new liquidity measures is collected to allow for the calibration of these policy tools. The Commission services will continue to participate in the working group of the Basel Committee and the joint task force established by ECB and EBA, that monitor the dynamics of bank capital positions<sup>308</sup>, globally and in the EU, respectively.

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<sup>308</sup> Indicators that are monitored include capital adequacy ratios, capital buffers, parameters used as inputs in minimum capital requirement calculation for the credit risk, etc.

## ANNEX II: TAKE-UP OF NATIONAL OPTIONS AND DISCRETIONS ANALYSED BY CRDWG

Area	Directive 2006/48 (unless indicated 2006/49)	Denomination	Description	Exercise of options and national discretions by Member States			
				Yes (with proviso)	No	Not yet decided	N/A
OWN FUNDS	Article 57 (second last paragraph)	Inclusion of interim profits	Member States may permit the inclusion of interim profits before a formal decision has been taken on the accounts, subject to conditions.	80 % (7 %)	13 %		
OWN FUNDS	Article 58	Waiver on certain deductions	Shares in another credit institution, financial institution, insurance or reinsurance undertaking may not be deducted if held temporarily for the purposes of a financial assistance operation designed to reorganise and save the entity.	73 % (3 %)	23 %		
OWN FUNDS	Article 59	Alternatives to deductions	As an alternative to deductions of participations and capital instruments held in other financial institutions, credit institutions may be allowed to apply, with the necessary changes, any of the methodologies set out in Annex 1 to the Conglomerates Directive.	57 % (0 %)	43 %		
OWN FUNDS	Article 60	Deductions for stand-alone requirements purposes	For the purposes of the calculation of their stand alone requirements, institutions may not be required to deduct holdings and participations in institutions included in the scope of their consolidation.	57 % (7 %)	37 %		
OWN FUNDS	Articles 61, 63.1, 64.3 and 65	List of own funds	The list of own funds elements in the Directive is a maximum, both in items and amounts. Member States may choose not to admit certain elements or to apply lower ceilings. They can add further deductions. Member states may choose to accept other elements of own funds different from those in article 57, subject to conditions. Finally they can decide on the possible inclusion of cumulative preferential shares and subordinated loan capital and on the inclusion of certain elements normally accounted for as assets, when they bear a credit ('negative') sign.	72 % (21 %)	3 %		3 %
OWN FUNDS	Article 13.2 Dir. 2006/49/EC	Alternative form of calculation for investment firms not providing certain services and applying Article 21	Investment firms that, in view of the services they provide, are allowed to calculate their own funds as a percentage of the turnover of the previous year (Article 21), may be also authorised to apply a definition of own funds other than that prescribed by the directive 2006/48/EC.	47 % (3 %)	3 %	7 %	13 %
OWN FUNDS	Article 13.5 Dir. 2006/49/EC	Flexibility in the composition of own funds for investment firms making	If an institution is calculating its own funds in accordance with the alternative offered in Article 13.2 of directive 2006/49/EC, it can be allowed to substitute subordinated loans by other elements described in Article 57 of directive 2006/48/EC, mainly as Tier 2.	27 %	6 %		13 %

Area	Directive 2006/48 (unless indicated 2006/49)	Denomination	Description	Exercise of options and national discretions by Member States			
				Yes (with provision)	No	Not yet decided	N/A
		use of the option in Article 13.2					
OWN FUNDS	Article 14 Dir. 2006/49/EC	Excess of subordinated capital	The Competent Authorities may allow investment firms to hold subordinated capital in excess of ordinary thresholds, up to certain limits.	27 % (7 %)	5 %		17 %
SCOPE OF APPLICATION	Article 69.1	Individual waiver for subsidiaries	Member States may grant individual institutions which are subsidiaries within a group, subject to the fulfilment of certain conditions, an exemption from individual requirements. The same applies where the parent company is a financial holding company.	40 %	57 %	3 %	
SCOPE OF APPLICATION	Article 69.3	Individual waiver for parent credit institutions	Member States may grant individual institutions which are the parent company within a group, subject to the fulfilment of certain conditions, an exemption from individual requirements.	30 %	77 %	3 %	
SCOPE OF APPLICATION	Article 70	Solo consolidation	Member States may allow, on a case-by-case basis, for the purpose of the calculation of the individual requirements of the parent institution, and subject to certain conditions, the incorporation of subsidiaries whose material exposures or liabilities are all to that parent institution.	33 % (3 %)	60 %	3 %	
SCOPE OF APPLICATION	Article 72.3	Exemption from Pillar III	The Competent Authorities may decide to exempt, fully or partially, a credit institution from Pillar III requirements provided such institution is included within a group complying with comparable disclosures on a consolidated basis in a third country.	50 % (7 %)	43 %		
SCOPE OF APPLICATION	Article 73.1	Exemption from consolidation	Member States may decide that, if certain conditions are met, some subsidiaries need not be included in consolidation.	73 % (17 %)	7 %	3 %	
SCOPE OF APPLICATION	Articles 22, 24 & 25 Dir. 2006/49/EC	Consolidated waiver for investment firms	A group of investment firms may be exempted from consolidated capital requirements, on a case-by-case basis, provided conditions are met.	25 % (4 %)	54 %	4 %	14 %
COUNTERPARTY RISK IN DERIVATIVES	Annex III, Part 3	Alternative template for the calculation of potential future value in certain cases	For institutions complying with certain requirements in their trading activities in commodities, gold and other products, Member States may allow percentages for the calculation of potential future value other than the general ones.	30 %	63 %	7 %	
COUNTERPARTY RISK IN DERIVATIVES	Annex III, Part 6, Para. 7	Higher value of coefficient Alpha (multiplier to calculate the exposure	Member States may set a value for coefficient Alpha higher than 1.4.	60 %	37 %	3 %	

Area	Directive 2006/48 (unless indicated 2006/49)	Denomination	Description	Exercise of options and national discretions by Member States			
				Yes (with proviso)	No	Not yet decided	N/A
		value of certain contracts)					
COUNTERPARTY RISK IN DERIVATIVES	Annex III, Part 6, Para. 12	Internal determination of the value of coefficient Alpha (multiplier to calculate the exposure value of certain contracts)	Member States may allow institutions to calculate Alpha internally, subject to a floor of 1.2.	67 % (7 %)	23 %	3 %	
COUNTERPARTY RISK IN DERIVATIVES	Annex III, Part 7c (ii)	Calculation (separate/aggregate) of 'net-to-gross ratio'	At the discretion of Competent Authorities, credit institutions may use either separate calculation or aggregate calculation when calculating the 'net-to-gross ratio'. If Member States permit credit institutions a choice of methods, the method chosen is to be used consistently.	63 %	30 %	7 %	
STANDARDISED APPROACH	Article 80.3 & Annex VI, Part 1, Para. 24	Risk-weighting exposures to credit institutions	Member States may choose between two alternative methods for risk-weighting exposures to credit institutions: (a) on the basis of the risk-weight of the corresponding central government and (b) on the basis of the credit assessment of the institution itself.	(a) (b)	37 %	53 %	
STANDARDISED APPROACH	Article 80.7	Exemption of intra-group exposures from risk-weighted exposures	If certain conditions are met, the Competent Authorities may assign a 0% risk-weight on exposures not forming part of "own funds" of a credit institution to its parent undertaking, its subsidiary, a subsidiary of its parent undertaking or an undertaking linked by a relationship within the meaning of Article 12(1) of Directive 83/349/EEC.	60 % (10 %)	30 %		
STANDARDISED APPROACH	Article 80.8	Treatment of exposures to a counterparty which is member of the same institutional protection scheme.	If certain conditions are met, the Competent Authorities may assign a 0% risk weight on exposures not forming part of "own funds" to counterparties which are members of the same institutional protection scheme as the lending institution.	23 %	77 %		
STANDARDISED APPROACH	Article 81.3	Mutual recognition of an ECAI	If an ECAI has been recognised as eligible by the competent authorities of a Member State, the competent authorities of other Member States may recognise that ECAI as eligible without carrying out their own evaluation process				
STANDARDISED	Article 82.2	Mutual recognition	When a competent authorities of a Member State have made a determination under § 1				

Area	Directive 2006/48 (unless indicated 2006/49)	Denomination	Description	Exercise of options and national discretions by Member States			
				Yes (with proviso)	No	Not yet decided	N/A
ED APPROACH		Denomination of an ECAI	(ECAI assessment associated with credit quality step), the competent authorities of other Member State may recognise that determination without carrying out their own determination process				
STANDARDISED APPROACH	Article 83.2	Permission to use unsolicited ratings	In order to use unsolicited ratings, credit institutions must get permission from the Competent Authorities. To make this possible, that alternative should be incorporated to legislation (implicit discretion).	67 % (17 %)	17 %		
STANDARDISED APPROACH	Annex VI, Part 1, Para. 5	Recognition of a third country's treatment of central government and central bank exposures	When a third country with supervisory/regulatory arrangements at least equivalent to those in the Community, assigns for the exposures to its own central government and central bank denominated and funded in the domestic currency a lower risk weight than the one applicable in principle, a member state may allow the risk-weight of such exposures in the same manner.	80 % (7%)	13 %		
STANDARDISED APPROACH	Annex VI, Part 1, Para. 11	Recognition of a third country's treatment of regional governments and local authorities	When a third country with supervisory/regulatory arrangements at least equivalent to those in the Community treats exposures to regional government and local authorities as exposures to its central government, a Member State may allow the risk-weight of such exposures in the same manner.	90 % (3 %)	7 %		
STANDARDISED APPROACH	Annex VI, Part 1, Para. 14	Treatment of public sector entities as institutions	Exposures to public sector entities may be treated as exposures to credit institutions, without applying the preferential weights applicable to short term exposures to institutions.	70 % (7 %)	23 %		
STANDARDISED APPROACH	Annex VI, Part 1, Para. 15	Treatment of exposures to public sector entities guaranteed by central governments	The Competent Authorities may, in exceptional cases, treat exposures to public sector entities as exposures to the central government in whose jurisdiction they are established where, in their opinion, there is no difference in the risk between such exposures because of the existence of an appropriate guarantee from the central government.	67 % (13 %)	20 %		
STANDARDISED APPROACH	Annex VI, Part 1, Para. 17	Recognition of a third country's treatment of public sector entities	When a third country with supervisory/regulatory arrangements at least equivalent to those applied in the Community treats exposures to its public sector entities as exposures to institutions, a Member State may allow the risk-weight of exposures to such public sector entities in the same manner.	77 % (10 %)	13 %		
STANDARDISED APPROACH	Annex VI, Part 1, Para. 29	Exposures to rated institutions with an original effective maturity of more	"Exposures to institutions with an original effective maturity of more than three months for which a credit assessment by a nominated ECAI is available shall be assigned a risk weight according to Table 4 in accordance with the assignment by the competent authorities (...)				



Area	Directive 2006/48 (unless indicated 2006/49)	Denomination	Description	Exercise of options and national discretions by Member States			
				Yes (with provision)	No	Not yet decided	N/A
		than three months (quality steps)					
STAND ARDIS ED APPRO ACH	Annex VI, Part 1, Para. 31	Preferential RW treatment for claims on institutions with an original maturity of 3 months or less under Option 2 (quality steps)	"Exposures to an institution with an original effective maturity of three months or less for which a credit assessment by a nominated ECAI is available shall be assigned a risk weight according to Table 5 in accordance with the assignment of the competent authorities.				
STAND ARDIS ED APPRO ACH	Annex VI, Part 1, Para. 37	Treatment of short term exposures to EU institutions in their national currency	A Competent Authority may allow short term exposures to Member States' institutions denominated and funded in the national currency a risk weight that is one category less favourable than the preferential risk weight applicable on exposures to EU central governments.	63 % (3 %)	33 %		
STAND ARDIS ED APPRO ACH	Annex VI, Part 1, Para. 40	Treatment of exposures in the form of minimum reserves held by an intermediary credit institution.	Provided that certain conditions are met, a Member State may permit exposures in the form of minimum reserves required by the ECB or by the central bank of a Member State to be held by a credit institution, in accordance with the relevant ECB regulation on the application of minimum reserves, to be risk weighted as exposures to the central bank of the member state concerned.	70 %	30 %		
STAND ARDIS ED APPRO ACH	Annex VI, Part 1, Para. 41	Treatment of exposures to corporates (quality steps)	Exposures for which a credit assessment by a nominated ECAI is available shall be assigned a risk weight according to the following table in accordance with the assignment by the competent authorities of the credit assessments of eligible ECAIs to six steps in a credit quality assessment scale.				
STAND ARDIS ED APPRO ACH	Annex VI, Part 1, Para. 49	Definition of Residential Real Estate: waive to independence condition on any cash flow generated by the underlying	Waiver eligibility criterion residential real estate (RRE): "competent authorities may dispense with the condition contained in § 45(b) for exposures fully and completely secured by mortgages on residential property which is situated within their territory, if they have evidence that a well-developed and long-established residential real estate market in present in their territory with loss rates which are sufficiently low to justify such treatment".				

Area	Directive 2006/48 (unless indicated 2006/49)	Denomination	Description	Exercise of options and national discretions by Member States			
				Yes (with proviso)	No	Not yet decided	N/A
		property serving as collateral.					
STANDARD APPROACH	Annex VI, Part 1, Para. 50	Mutual recognition of the waiver	Recognition of the treatment in §46 within EU: "when the discretion contained in §46 is exercised by the competent authorities of a Member State, the competent authorities of another Member State may allow their credit institutions to apply a risk weight of 35% to such exposures fully and completely secured by mortgages on residential property".				
STANDARD APPROACH	Annex VI, Part 1, Para. 51	RW 50% for CRE	50% RW for commercial real estate (CRE): "Subject to the discretion of the competent authorities, exposures fully and completely secured, to the satisfaction of the competent authorities by mortgages on offices or other commercial premises situated within their territory may be assigned a risk weight of 50%"				
STANDARD APPROACH	Annex VI, Part 1, Para. 52	50% RW for Finnish Housing CRE	Subject to the discretion of the competent authorities, exposures fully and completely secured, to the satisfaction of the competent authorities, by shares in Finnish housing companies operating in accordance with the Finnish Housing Company Act of 1991 or subsequent equivalent legislation, in respect of offices or other commercial premises may be assigned a risk weight of 50%				
STANDARD APPROACH	Annex VI, Part 1, Para. 53 + Art 153	Exposures related to property leasing transactions	Property leasing transactions: "Subject to the discretion of competent authorities, exposures related to property leasing transactions concerning offices or other commercial premises situated in their territory and governed by statutory provisions whereby the lessor retains full ownership of the rented assets until the tenant exercises his option to purchase, may be assigned a risk weight of 50%. " Art 153: (...) the competent authorities may until 31 December 2012 allow a 50% risk weighting to be applied without the application of Annex VI, Part 1, § 55 & 56.				
STANDARD APPROACH	Annex VI, Part 1, Para. 58	Waive on definition of the CRE	Waiver eligibility criterion CRE: "competent authorities may dispense with the condition contained in § 51 (b) for exposures fully and completely secured by mortgages on commercial property which is situated within their territory if they have evidence that (...) with loss rates do not exceed the following limits (...)				
STANDARD APPROACH	Annex VI, Part 1, Para. 63	Risk-weighting past due exposures secured by non eligible collateral	A risk weight of 100% may be assigned on past due exposures which are fully secured by non eligible collateral when value adjustments reach 15% of the exposure gross of the value adjustments, if strict operational criteria exist to ensure the good quality of the collateral.	17 %	83 %		
STANDARD	Annex VI, Part 1, Para.	Risk-weighting	The applicable risk weight on past due exposures secured by mortgages on	67 %	33 %		

Area	Directive 2006/48 (unless indicated 2006/49)	Denomination	Description	Exercise of options and national discretions by Member States			
				Yes (with provision)	No	Not yet decided	N/A
ED APPROACH	64	of past due exposures secured by mortgages on residential property	residential property net of value adjustments may be reduced to 50%, if value adjustments are no less than 20% of the exposure amount gross of the value adjustments.				
STANDARD APPROACH	Annex VI, Part 1, Para. 66	Risk-weighting items belonging to regulatory high risk categories	The Competent Authorities have the discretion to assign a risk weight of 150% on exposures associated with particularly high risks.	70 % (3 %)	27 %		
STANDARD APPROACH	Annex VI, Part 1, Para. 67	Regulatory high risk categories - lower risk weight due to value adjustments	The risk weight on non past due exposures receiving a 150% risk weight may be reduced to (a) 100% if value adjustments exist which are no less than 20% of the gross exposure and (b) 50% if value adjustments are no less than 50% of the gross exposure.	53 % (7 %)	40 %		
STANDARD APPROACH	Annex VI, Part 1, Para. 68(e)	Loans secured by commercial real estate as collateral for covered bonds	The Competent Authorities may recognise loans secured by commercial real estate as eligible collateral for covered bonds where the required loan to value ratio of 60% is exceeded up to a maximum level of 70%, if certain defined criteria and conditions are met.	43 %	57 %		
STANDARD APPROACH	Annex VI, Part 1, Para. 85	Risk-weighting institutions specialising in the inter-bank and public debt market	Member States may allow a risk weight of 10% for exposures to institutions specialising in the interbank and public debt markets in their home member states, if such institutions are subject to close supervision and the exposures are adequately secured.	27 %	70 %	3 %	
STANDARD APPROACH	Annex VI, Part 3, Para. 17	Exceptions to the non-use of domestic currency ratings for foreign-currency exposures	The Competent Authorities may allow the domestic currency rating of an obligor to be used for its foreign currency exposures provided such exposures arise from institutions' participation in a loan extended by a Multilateral Development Bank.	77 %	23 %		
IRB	Article 84.2	Requirements for IRB standards for parent and EU subsidiaries altogether	When IRB approach is used by an EU parent or financial holding company and its subsidiaries, Member States may allow the minimum requirements to qualify for IRB to be met by parent and subsidiaries considered together.	70 % (13 %)	17 %		
IRB	Article 85,	Roll-out	"(1): Subject to the approval of the				

Area	Directive 2006/48 (unless indicated 2006/49)	Denomination	Description	Exercise of options and national discretions by Member States			
				Yes (with provision)	No	Not yet decided	N/A
	1+2	possibility	competent authorities, implementation may be carried out sequentially across the different exposure classes (...) (2) Implementation as referred to §1 shall be carried out within a reasonable period of time to be agreed by the competent authorities."				
IRB	Article 89.1.	Partial use of the standardised approach	Subject to the approval of the competent authorities, credit institutions permitted to use the IRB approach (...) for one or more exposure classes may apply Subsection 1 (standardised approach) for the following exposures (...)				
IRB	Article 89 last sentence	Mutual recognition within EU of the use of standardised approach for the exposures listed :	Mutual recognition within EU of the use of standardised approach for the exposures listed : 'this paragraph shall not prevent the competent authorities of other Member States to allow the application of the rules of Subsection 1 (standardised approach) for equity exposures which have been allowed for this treatment in other Member States'				
IRB	Annex VII, Part 1, Para. 6	Lower rate for specialized lending	The Competent Authorities may authorise a credit institution to generally assign a 50% risk weight to SL-Category 1 and 70% to SL-Category 2 (regardless of maturity) if certain conditions are met.	60 % (13 %)	27 %		
IRB	Annex VII, Part 1, Para. 13 (last sentence)	Special treatment for revolving retail exposures secured by a link to a wage account	The requirement that retail revolving exposures be unsecured (Annex VII, Part 1, Para. 13 b) may be waived by the Competent Authorities in respect of collateralised credit facilities linked to a wage account.	73 %	27 %		
IRB	Annex VII, Part 1, Para. 18	Treatment of ancillary banking services	Exposures to ancillary banking services undertakings (equity) can be treated as non-credit obligation assets.	90 %	10 %		
IRB	Annex VII, Part 2, Para. 5, 7 & Annex VIII, Part 1, Para. 26	Possibility to extend the list of unfunded protection providers for the purposes of recognition of unfunded credit protection in PD	For the purposes of the recognition of unfunded credit protection in PD by institutions, the Competent Authorities may extend the list of unfunded credit protection providers further than those included in Annex VIII, Part 1, Para. 26.	40 % (3 %)	57 %		
IRB	Annex VII, Part 2, Para.	Alternatives for the	The Competent Authorities may require all institutions in their jurisdiction to use	33 % (3 %)	64 %		

Area	Directive 2006/48 (unless indicated 2006/49)	Denomination	Description	Exercise of options and national discretions by Member States			
				Yes (with proviso)	No	Not yet decided	N/A
	12 & 13	calculation of maturity	maturity (M) for each exposure in accordance with formulae instead of using values by default (0.5 years for repos and 2.5 for other exposures).				
IRB	Annex VII, Part 2, Para. 15	Maturity for EU-firms (< EUR 500 mio.)	The Competent Authorities may allow maturity of exposures to European corporates with consolidated assets of less than EUR 500 million to be set at values by default, even if they apply the formulae option.	30 %	70 %		
IRB	Annex VII, Part 2, Para. 15 (last sentence)	Maturity for EU-firms investing primarily in real estate (< EUR 1,000 mio.)	The Competent Authorities may allow maturity of exposures to European corporates that invest primarily in real estate with consolidated assets of less than EUR 1,000 million to be set at values by default, even if they apply the formulae option.	17 %	83 %		
IRB	Annex VII, Part 2, Para. 20 & Annex VIII, Part 1, Para. 26	Possibility to extend the list of unfunded protection providers for the purposes of calculation of dilution risk	For the purposes of the calculation of dilution risk, the Competent Authorities may extend the list of unfunded credit protection providers further than those included in Annex VIII, Part 1, Para. 26.	40 %	60 %		
IRB	Annex VII, Part 4, Para. 44	Number of days past due	"In all cases, the exposure past due shall be above the threshold defined by the competent authorities and which reflects a reasonable level of risk"				
IRB	Annex VII, Part 4, Para 48	Number of days past due	DoD days past due for retail and PSEs: " for retail and PSE exposures, the competent authorities of each Member States shall set the exact number of days past due that all credit institutions in its jurisdiction shall abide by under the definition of defaults set out in §44, for exposures to such counterparts situated within this Member State. The specific number shall fall within 90-180 days and may differ across product lines. (...)"				
IRB	Annex VII, Part 4, Para 56	Flexibility in data collection	The Competent Authorities may apply less stringence as regards the data needed for estimation and collected before the implementation of the directive, provided the credit institution makes appropriate adjustments.	83 % (10 %)	7 %		
CREDIT RISK MITIGATION	Annex VIII, Part 1, Para. 8	Unrated listed institutions	Recognition as collateral of unrated, listed institution securities: "debt securities issued by credit institutions which securities do not have a credit assessment by an eligible ECAI may be recognised as eligible collateral if they fulfil the following criteria ..."				
CREDI	Annex VIII,	Recognitio	The Competent Authorities may authorise	40 %	57 %		3 %

Area	Directive 2006/48 (unless indicated 2006/49)	Denomination	Description	Exercise of options and national discretions by Member States			
				Yes (with proviso)	No	Not yet decided	N/A
T RISK MITIGATION	Part 1, Para. 15	n of shares in Finnish housing companies as eligible collateral	their credit institutions to recognise as eligible collateral shares in Finnish housing companies that are operating in accordance with the Finnish Housing Company Act of 1991 provided that certain conditions are met.				
CREDIT RISK MITIGATION	Annex VIII, Part 1, Para. 16	Waiver to definition of RRE	Waiver eligibility criterion RRE: "the competent authorities may waive the requirement for their credit institutions to comply with condition (b) in § 13 for exposures secured by residential real estate property situated within the territory of that Member State if the competent authority have evidence that (...).				
CREDIT RISK MITIGATION	Annex VIII, Part 1, Para. 17	Waiver to definition of CRE	Waiver eligibility criterion CRE: "the competent authorities may waive the requirement for their credit institutions to comply with condition (b) in § 13 for exposures secured by commercial real estate property situated within the territory of that Member State if the competent authority have evidence that (...).				
CREDIT RISK MITIGATION	Annex VIII, Part 1, Para. 19	Mutual recognition of the waiver	Application of the waiver in §17 within EU: "the competent authorities of a Member State, which do not use the waiver in §17, may recognise as eligible commercial real estate property recognised as eligible in another Member State by virtue of the waiver".				
CREDIT RISK MITIGATION	Annex VIII, Part 1, Para. 20	Amounts receivable as eligible collateral	The Competent Authorities may recognise as eligible collateral amounts receivable linked to a commercial transaction or transactions with an original maturity of less than or equal to one year. Eligible receivables do not include those associated with securitisations, sub-participations or credit derivatives or amounts owed by affiliated parties.	90 % (3 %)	7 %		
CREDIT RISK MITIGATION	Annex VIII, Part 1, Para. 21	Other physical collateral	The Competent Authorities may recognise as eligible collateral physical items of a type other than real estate collateral, if satisfied as to the following: (a) liquid markets for disposal of the collateral do exist in an expeditious and economically efficient manner; and (b) well-established, publicly available market prices for the collateral do exist. the institution must be able to demonstrate that there is no evidence that the net prices it receives when collateral is realised deviates significantly from these market prices.	77 % (7 %)	16 %		
CREDIT RISK MITIGATION	Annex VIII, Part 1, Para. 25	Instruments repurchased on request	Instruments issued by third party institutions which will be repurchased by that institution on request may be recognised as eligible credit protection.				
CREDIT RISK MITIGATION	Annex VIII, Part 1, Para. 28	Eligible protection providers	Member states may also recognize as eligible providers of unfunded credit protection, other financial institutions authorised and supervised by competent authorities and subject to prudential	43 %	53 %	3 %	

Area	Directive 2006/48 (unless indicated 2006/49)	Denomination	Description	Exercise of options and national discretions by Member States			
				Yes (with proviso)	No	Not yet decided	N/A
			requirements equivalent to those applied to credit institutions.				
CREDIT RISK MITIGATION	Annex VIII, Part 2, Para. 9a (ii)	Minimum requirements for the recognition of receivables as collateral	Credit institutions must take all steps necessary to fulfil local requirements in respect of the enforceability of security interest. There shall be a framework which allows the lender to have a first priority claim over the collateral subject to national discretion to allow such claims to be subject to the claims of preferential creditors provided for in legislative or implementing provisions.	73 % (7 %)	17 %		3 %
CREDIT RISK MITIGATION	Annex VIII, Part 2, Para. 16	Treatment of exposure protected by a guarantee which is counter-guaranteed by a central government or central bank.	Treatment where an exposure is protected by a guarantee which is counter-guaranteed by a central government or central bank (...): the exposure may be treated as protected by a guarantee by the entity in question provided the following conditions are satisfied : a); b) and c) the competent authority is satisfied that the cover is robust and that nothing in the historical evidence...in question.				
CREDIT RISK MITIGATION	Annex VIII, Part 3, Para. 12	Permission of internal models approach for calculation of fully adjusted exposure value (E*)	The Competent Authorities may permit credit institutions meeting certain requirements to use an internal models approach taking into account correlations to calculate the adjusted exposure value for exposures resulting from the application of a master netting agreement.	83 % (13 %)	3 %		
CREDIT RISK MITIGATION	Annex VIII, Part 3, Para. 19	Permission to use empirical correlations within and across risk categories	The Competent Authorities may allow credit institutions to use empirical correlations within risk categories and across risk categories if they are satisfied that the credit institution's system for measuring correlations is sound and implemented with integrity.	83 % (10 %)	7 %		
CREDIT RISK MITIGATION	Annex VIII, Part 3, Para. 43	Own estimates of volatility adjustments (categories of security)	When debt securities have a credit assessment from a recognised ECAI equivalent to investment grade or better, the Competent Authorities may allow credit institutions to calculate a volatility estimate for each category of security.	90 % (3 %)	3 %		3 %
CREDIT RISK MITIGATION	Annex VIII, Part 3, Para. 72	Reduced LGDs for leasing transactions	Until 31 December 2012, the Competent Authorities may, subject to the indicated levels of collateralisation, allow credit institutions to assign lower levels of LGD for senior exposures in the form of Commercial Real Estate leasing and of equipment leasing.	41 % (3 %)	55 %		

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				Yes (with provision)	No	Not yet decided	N/A
CREDIT RISK MITIGATION	Annex VIII, Part 3, Para. 73	Cap at 50% RW for CRE	Cap for RRE: "subject to the requirements of this paragraph and §75 and as an alternative to the treatment in § 69 to 73, the competent authorities of a Member State may authorise credit institutions to apply a 50% risk weighting to the part of the exposure fully collateralised by RRE property or CRE property situated within the territory of the Member State if they have evidence that (...)				
CREDIT RISK MITIGATION	Annex VIII, Part 3, Para. 89	Sovereign guarantees	The Competent Authorities may apply reduced risk weights to exposures or portions of exposures guaranteed by the central government or central bank, where the guarantee is denominated in the domestic currency of the borrower and the exposure is funded in that currency.	83 % (3 %)	13 %		
SECURITISATION	Article 152(10)(b)	Discretion to disapply the securitisation framework	For banks that do not move to standardised approach in 2007, the treatment of securitisation may be disappplied by competent authorities.	73 %	17 %	7 %	3 %
SECURITISATION	Article 97.3	Recognition of ECAI : mutual recognition	Recognition of ECAI within EU for securitisation purposes: "if an ECAI has been recognised as eligible by the competent authorities of one Member State for the purpose of paragraph I, the competent authorities of the other Member States may recognise that ECAI as eligible for those purposes without carrying out their own evaluation process"				
SECURITISATION	Article 98.2	Mutual recognition of quality steps	Recognition of mapping within EU for securitisation purposes: When the competent authorities of a Member State have made a determination under paragraph I, the competent authorities of the other Member States may recognise that determination without carrying out their own determination process.				
SECURITISATION	Annex IX, Part 4, Para. 30	Treatment of certain retail exposures subject to early amortisation provision	The Competent Authorities may apply a treatment analogous to the lines of para. 26 to 28 in the case of securities subject to an early amortisation provision of certain retail exposures (uncommitted, unconditionally cancellable without prior notice, early amortisation is triggered by a quantitative value in respect of something other than the three months average excess spread) for determining the conversion figure.	47 % (10 %)	40 %	3 %	
SECURITISATION	Annex IX, Part 4, Para. 43	The Internal Assessment approach	Use of 'internal assessment approach' for unrated ABCP exposures: "subject to the approval of the competent authorities, when the following conditions are satisfied, a credit institution may attribute to an unrated position in an asset backed commercial paper programme a derived rating as laid down in §43"				
SECURITISATION	Annex IX, Part 4, Para. 43 last	Public availability of the	The requirement for the assessment methodology to be publicly available may be waived by the competent authorities ...				



Area	Directive 2006/48 (unless indicated 2006/49)	Denomination	Description	Exercise of options and national discretions by Member States			
				Yes (with proviso)	No	Not yet decided	N/A
	sentence	ECAI's assessment					
SECURITISATION	Annex IX, Part 4, Para. 53 (last sentence)	Application of the simplified Supervisory Formula Method	The Competent Authorities may permit credit institutions to apply for securitisations involving retail exposures the Supervisory Formula Method using simplifications for certain risk parameters.	80 % (10 %)	7 %	3 %	
SECURITISATION	Annex IX, Part 4, Para. 58	Exceptional treatment when KIRB cannot be calculated	When it is not practical for the credit institution to calculate the risk-weighted exposure amounts for the securitised exposures as if they had not been securitised, a credit institution may, on an exceptional basis and subject to the consent of the competent authorities, temporarily be allowed to apply the following method for the calculation of risk-weighted exposure amounts for an unrated securitisation position in the form of a liquidity facility.				
OPERATIONAL RISK	Article 102.4 & Annex X, Part 4, Para. 1 and 2	Combination of approaches	The Competent Authorities may allow institutions to use a combination of approaches.	87 % (10 %)	3 %		
OPERATIONAL RISK	Article 104.3	Alternative Standardised Approach	The Competent Authorities may under certain conditions authorise institutions to use a alternative indicator to calculate its capital requirements.	60 % (3 %)	37 %		
OPERATIONAL RISK	Article 105.4	Qualifying criteria for AMA within the same group	The Competent Authorities may allow the qualifying criteria set out to be met by the parent and its subsidiaries considered together.	80 % (13 %)	7 %		
OPERATIONAL RISK	Annex X, Part 2, Para. 3 and 5	Alternative Standardised Approach	The Competent Authorities may authorise institution to calculate its capital requirement using an alternative standardised approach.	63 % (3 %)	30 %		3 %
OPERATIONAL RISK	Annex X, Part 3, Para. 11	Process for quantitative standards	Correlations in operational risk losses across individual operational risk estimates may be recognised only if credit institutions can demonstrate to the satisfaction of the competent authorities that their systems for measuring correlations are sound, implemented with integrity, and take into account the uncertainty surrounding any such correlation estimates (...)"				
OPERATIONAL RISK	Article 20.2 Dir. 2006/49/EC	Minimum level of own funds	The Competent Authorities may allow investment firms with limited licence to provide own funds which are always more than or equal to the higher of the capital requirement for credit and market risk or 25% of the preceding years fixed overheads.	70 %	13 %		17 %
OPERATIONAL RISK	Article 20.3 Dir. 2006/49/EC	Minimum level of own funds	The Competent Authorities may allow investments firms which hold 730 000 EUR in initial capital, but which fall within certain categories, to provide own funds which are always more than or equal to the higher of the capital requirement for credit and market risk or 25 % of the preceding	50 % (3 %)	30 %		17 %

Area	Directive 2006/48 (unless indicated 2006/49)	Denomination	Description	Exercise of options and national discretions by Member States			
				Yes (with proviso)	No	Not yet decided	N/A
			years fixed overheads.				
QUALIFYING HOLDINGS OUTSIDE THE FINANCIAL SECTOR	Article 122.1	Special treatment for insurance undertakings	Member States may exempt insurance sector undertakings from the general limits established for qualifying holdings.	70 %	27 %	3 %	
QUALIFYING HOLDINGS OUTSIDE THE FINANCIAL SECTOR	Article 122.2	Alternative - deduction	Member States may decide not to apply limits on qualifying holdings, provided excess is deducted from own funds.	60 % (3 %)	33 %	3 %	
TRANSITIONAL PROVISIONS	Article 153, Para. 1 (first sentence)	Transitional treatment for certain property leasing transactions	The Competent Authorities may, until December 31, 2012, allow leasing exposures on offices or commercial premises in their territory and subject to certain conditions, to be rated 50%.	23 %	77 %		
TRANSITIONAL PROVISIONS	Article 153, Para. 2 (second sentence)	Transitional definition of the secured portion of a loan	The Competent Authorities may, until December 31, 2010, allow, for the purpose of defining the secured portion of a loan, recognise eligible collateral other than the one meeting the requirements.	13 %	87 %		
TRANSITIONAL PROVISIONS	Article 154.1	Transitional use of a different definition of past due	Until December 31, 2011, the Competent Authorities may set the number of days past due up to 180 days if local conditions make it appropriate (for the purposes of application of the standardised approach). The specific number may differ across product lines.	10 % (3 %)	80 %	7 %	
TRANSITIONAL PROVISIONS	Article 154.2	Transitionally shorter test of use	Institutions applying for the use of IRB before 2010 may benefit from a test of use shorter than 3 years but above 1, until December 31, 2009.	83 % (7 %)	7 %	3 %	
TRANSITIONAL PROVISIONS	Article 154.3	Transitionally shorter requirement of use for LGD/conversion factors estimates	For those institutions applying for the use of their own LGD/conversion factors estimates, the three-year period of experience in use required by Article 84.4 may be reduced to two until December 31, 2008.	90 % (3 %)	7 %		
TRANS	Article 154.4	Transition	The Competent Authorities may, until	37 %	57 %	3 %	

Area	Directive 2006/48 (unless indicated 2006/49)	Denomination	Description	Exercise of options and national discretions by Member States			
				Yes (with provision)	No	Not yet decided	N/A
TRANSITIONAL PROVISIONS		Equal treatment for certain types of participations	December 31, 2012, allow credit institutions to continue to apply Basel I treatment to certain types of participations.	(3 %)			
TRANSITIONAL PROVISIONS	Article 154.6	Transitional exemption for certain equity exposures	The Competent Authorities may, until December 31, 2017, exempt from IRB certain equity exposures held on December 31, 2007.	53 %	47 %		
TRANSITIONAL PROVISIONS	Article 154.7	Days past due for corporate	"Until 31 December 2011, for corporate exposures the competent authorities of each Member State may set the number of days past due that all credit institutions in its jurisdiction shall abide by under the definition of default set out in Annex VII, Part 4, §44 for exposures to such counterparts situated within this Member State."				
TRANSITIONAL PROVISIONS	Article 155	Transitional calculation: standardised approach - operational risk (credit institutions)	Until December 31, 2012, the "trading and sales" business line may be applied a 15% factor, if it represents at least 50% of the total relevant indicators.	40 %	60 %		
TRANSITIONAL PROVISIONS	Annex VII, Part 2, Paragraph 8 (second subparagraph)	Transitional LGD for covered bonds	Until December 31, 2010, covered bonds may be assigned an LGD of 11.5%	73 % (3 %)	20 %		3 %
TRANSITIONAL PROVISIONS	Annex VII, Part 4, Paragraphs 66, 71, 86 and 95	Transitional reduction of minimum length of observation periods	Member States may transitionally allow a reduction of the minimum length of the observation periods required for own estimations of PD, LGD and CCF, subject to an absolute minimum of 2 years.	84 % (10 %)	3 %	3 %	
TRANSITIONAL PROVISIONS	Article 44 Dir. 2006/49/EC	Transitional calculation: standardised approach - operational risk (investment firms)	Until December 31, 2012, the "trading and sales" business line may be applied a 15% factor, if it represents at least 50% of the total relevant indicators.	50 %	33 %		17 %
TRANSITIONAL PROVISIONS	Article 46 Dir. 2006/49/EC	Alternative transitional	Until December 31, 2011, the Competent Authorities may choose not to apply requirements for operational risk as set out in Article 75(d) of directive 2006/48/EC to	40 %	43 %		17 %

Area	Directive 2006/48 (unless indicated 2006/49)	Denomination	Description	Exercise of options and national discretions by Member States			
				Yes (with proviso)	No	Not yet decided	N/A
SIONS		operational risk requirement	low size investment firms. An alternative treatment applies instead.				
TRANSITIONAL PROVISIONS	Article 47 Dir. 2006/49/EC	Transitional applicability of recognized specific risk models	Until December 31, 2009, or any other date specified by the Competent Authorities on a case-by-case basis, it may be provided that for institutions that have received specific risk model recognition prior to January 1, 2007, previous requirements (as in the old directive) apply.	35 % (3 %)	52 %	6 %	3 %
TRADING BOOK	Article 18.2 and 3 Dir. 2006/49/EC	Application of the banking book rules to trading book, if not material	The Competent Authorities may allow institutions to apply banking book rules to their trading book exposures, provided the trading book activities does not exceed certain limits.	93 % (3 %)	3 %		
TRADING BOOK	Article 19.2 Dir. 2006/49/EC	Specific risk requirement for covered bonds	Member States may set a reduced specific risk requirement for covered bonds, with reductions similar to those applied in the banking book under the standardised approach.	57 %	40 %	3 %	
TRADING BOOK	Article 19.3 Dir. 2006/49/EC and Annex I, point 52	Third country CIU	A Competent Authority of one member state may make use of the approval of another one without conducting its own assessment.	63 % (3 %)	30 %	3 %	
TRADING BOOK	Article 26 Dir. 2006/49/EC	Offsetting trading positions	For the purposes of calculation of consolidated capital requirements, the Competent Authorities may authorise the offsetting of trading (trading book, commodities, etc.) positions even when they are booked in different institutions within the group, subject to certain conditions.	60 % (7 %)	30 %	3 %	
TRADING BOOK	Article 33.3 Dir. 2006/49/EC	Alternative requirements for valuation in absence of readily available market prices	The Competent Authorities, in the absence of readily available market prices, may choose not to apply daily mark to market and, instead, require institutions to apply alternative methods subject to their approval.	77 % (3 %)	20 %		
TRADING BOOK	Annex I, Para. 4, 2nd subparagraph (first sentence) Dir. 2006/49/EC	Capital requirement for an exchange-traded future	Subject to certain conditions, the Competent Authorities may allow that the capital requirement for an exchange-traded future contract be equal to the margin required by the exchange.	37 % (3 %)	57 %	3 %	
TRADING BOOK	Annex I, Para. 4, 2nd subparagraph (second sentence)	Capital requirement for OTC derivative cleared by	Subject to certain conditions, the Competent Authorities may allow that the capital requirement for an OTC derivative cleared by a clearing house to be equal to the margin required by the clearing house.	30 % (7 %)	60 %	3 %	

Area	Directive 2006/48 (unless indicated 2006/49)	Denomination	Description	Exercise of options and national discretions by Member States			
				Yes (with proviso)	No	Not yet decided	N/A
	Dir. 2006/49/EC	a clearing house					
TRADING BOOK	Annex I, Para. 5, 2nd subparagraph Dir. 2006/49/EC	Prescription of specific methodologies for the calculation of delta	The Competent Authorities may prescribe that delta be calculated following methodologies specified by them.	37 %	60 %	3 %	
TRADING BOOK	Annex I, Para. 5, 3rd subparagraph Dir. 2006/49/EC	Capital requirement for exchange-traded written options and OTC options cleared by a clearing house	Subject to certain conditions, the Competent Authorities may allow that the capital requirement for an exchange-traded written option, or an OTC option cleared by a clearing house to be equal to the margins required by the exchange or the clearing house, respectively.	30 % (7 %)	60 %	3 %	
TRADING BOOK	Annex I, Para. 5, 3rd subparagraph Dir. 2006/49/EC	Capital requirement for exchange-traded bought options and OTC bought options cleared by a clearing house	Subject to certain conditions, the Competent Authorities may allow that the capital requirement for an exchange-traded bought option, or an OTC bought option cleared by a clearing house to be equal to the requirement for the underlying instrument.	43 % (7 %)	47 %	3 %	
TRADING BOOK	Annex I, Para. 14 Dir. 2006/49/EC	Specific risk charge for a non-qualifying issuer	The Competent Authorities may require that instruments issued by non-qualifying issuers are applied a specific risk capital charge higher than 8% or 12% and/or disallow offsetting for the purposes of general market risk between such instruments and any other instrument.	40 %	57 %	3 %	
TRADING BOOK	Annex I, Para. 26 Dir. 2006/49/EC	Use of duration instead of the standard system for calculation of the general risk of traded debt positions	The Competent Authorities may, either in general or on an individual basis, allow institutions to use a system for calculating the general risk for traded debt instruments which reflects duration instead of the system set out in the directive.	90 % (10 %)			
TRADING BOOK	Annex I, Para. 35, first sentence Dir. 2006/49/EC	Reduced specific risk requirement for certain	The Competent Authorities may allow certain equity portfolios to be assigned a specific risk requirement of 2% instead of 4%.	80 %	20 %		

Area	Directive 2006/48 (unless indicated 2006/49)	Denomination	Description	Exercise of options and national discretions by Member States			
				Yes (with provision)	No	Not yet decided	N/A
		equity portfolios					
TRADING BOOK	Annex I, Para. 35 (last sentence) Dir. 2006/49/EC	Alternative maximum weight of an individual position in an institution's equity portfolio	The Competent Authorities may authorise that individual positions represent a maximum of 10% of the total equity portfolio (instead of 5% as in the Directive), provided that the sum of such positions do not exceed 50%.	70 %	27 %		3 %
TRADING BOOK	Annex III, Para. 2.1, last sentence Dir. 2006/49/EC	Discretionary use of net present value for determining the open position in currencies or gold	The Competent Authorities have the discretion to allow institutions to use net present value when determining their open positions in currencies or gold.	80 %	20 %		
TRADING BOOK	Annex III, Para. 3.1 Dir. 2006/49/EC	Lower capital requirements for closely correlated currencies	The Competent Authorities may allow institutions to provide lower capital requirements for positions in closely correlated currencies, as defined in the Directive.	57 %	43 %		
TRADING BOOK	Annex IV, Para. 7 Dir. 2006/49/EC	Definition of 'positions in the same commodity'	The Competent Authorities may regard, in some cases, different but closely linked commodities as the same, for the purposes of calculating the position in a commodity.	77 % (3 %)	20 %		
TRADING BOOK	Annex IV, Para. 8 Dir. 2006/49/EC	Capital requirement for exchange-traded commodities OTC commodity derivatives cleared by a clearing house	Subject to certain conditions, the Competent Authorities may allow that the capital requirement for an exchange-traded commodity, or an OTC commodity derivative cleared by a clearing house to be equal to the margins required by the exchange or the clearing house, respectively.	33 % (3 %)	64 %		
TRADING BOOK	Annex IV, Para. 10 Dir. 2006/49/EC	Prescription of specific methodologies for the calculation of delta for derivatives on commodities	The Competent Authorities may prescribe that delta for commodity derivatives be calculated following methodologies specified by them.	30 % (7 %)	63 %		

Area	Directive 2006/48 (unless indicated 2006/49)	Denomination	Description	Exercise of options and national discretions by Member States			
				Yes (with proviso)	No	Not yet decided	N/A
RADING BOOK	Annex IV, Para. 10, three last subparagraphs Dir. 2006/49/EC	Capital requirement for exchange-traded options and OTC options cleared by a clearing house	Subject to certain conditions, the Competent Authorities may allow that the capital requirement for an exchange-traded written option, or an OTC option cleared by a clearing house to be equal to the margins required by the exchange or the clearing house, respectively. Also OTC bought options may be assigned the same requirement as the underlying commodity.	37 % (7 %)	57 %		
TRADING BOOK	Annex IV, Para. 14 Dir. 2006/49/EC	Offsetting positions in the same commodity	The Competent Authorities may allow positions in the same commodity - or in commodities regarded as the same - to be offset prior to assignment to the appropriate maturity band.	90 %	10 %		

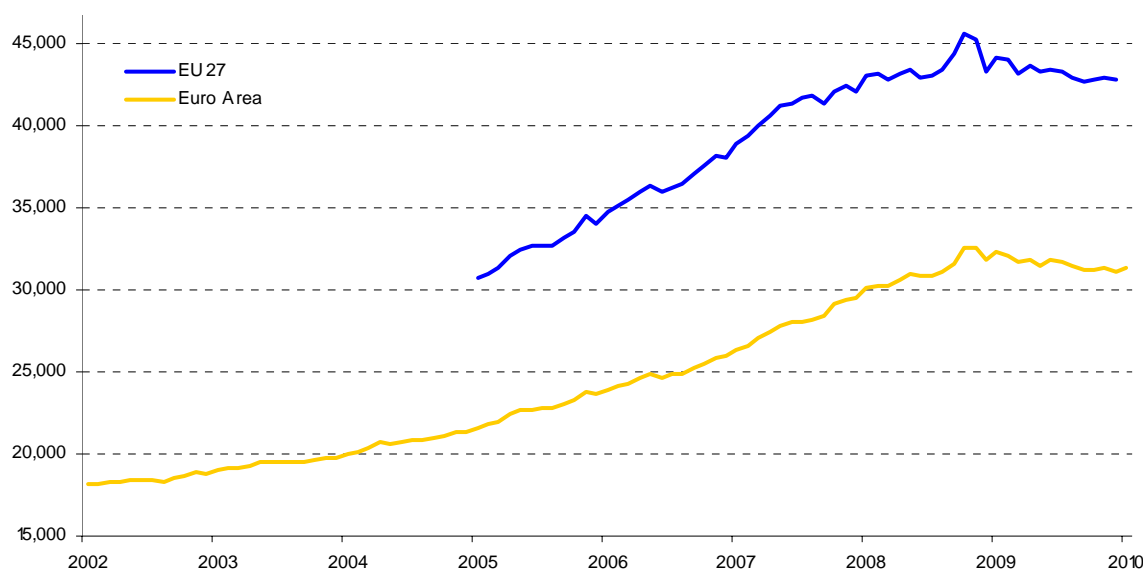
## ANNEX III: ECONOMIC AND FINANCIAL IMPORTANCE OF THE BANKING SECTOR IN EUROPE

### The size of the EU banking sector

The EU banking sector is a key sector in the EU economy. In relative terms, the EU banking sector is larger than its US counter part, respectively 340% of GDP and 92% of GDP in 2009. Until the outbreak of the crisis, the EU banking sector grew steadily, in terms of total assets, to reach a maximum of over €45,000 bn in late 2008. After this peak, it slightly declined and stagnated at around €43,000 bn.

**Chart 1:** Total assets of Euro Area MFIs

MFIs excluding the Eurosystem. € bn



Source: ECB: Aggregated balance sheet of EA MFIs and own calculations

Chart 1 illustrates the increasing size of the banking sector by plotting the evolution of the total assets of Euro Area Monetary and Financial Institutions (MFIs). Although MFIs include both money markets funds and credit institutions, the share of the former is relatively negligible (just over €1,000 bn, around 4% of MFIs).

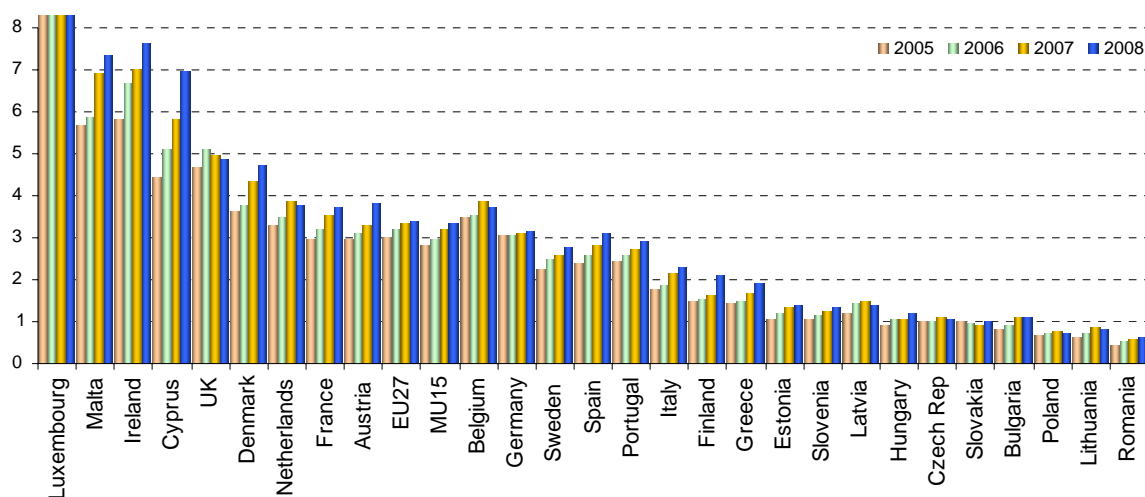
In 2008, the banking sector in EU27 was 3.4 times its GDP<sup>309</sup>. However, these aggregate figures hide very different realities across countries. The banking sector is, in general, much more developed in the old Member States than in the recently acceded ones. LU, MT, IE, CY, UK and DK have a very important banking sector with a size over 4 times their GDP. On the other hand, RO, LT, PL, BG, SK, CZ are characterized by a banking sector smaller than their GDP (See Chart 2).

Over the recent years (2005-2008), the banking sector grew steadily in most countries, although the growth has been particularly important in MT, IE, CY and DK.

**Chart 2:** Total assets of credit institutions with respect to GDP

<sup>309</sup> It should however be kept in mind that GDP is an annual flow while the size of the banking sector in terms of total assets is a stock.





Note: Values for Luxembourg ranked from 26.2 in 2005 to 25.4 in 2008.

Source: European Central Bank and own calculations.

The EU banking sector is the main financing source for the real economy (see next section). It is also a major contributor to the added value of our economies and an important employer. The EA financial sector generates an added value of over €400 bn (equivalent to 5% of the GDP).

### The crucial role of bank intermediation for the real economy: intermediation vs. direct financing

In general, financial system impacts allocative efficiency in the real economy through its intermediary role, producing information about possible investments, mobilizing savings, monitoring investments, managing and diversifying risk as well as easing the exchange of goods and services. Empirical evidence would indicate that restricting bank activities has generally negative repercussions for economic growth although there may be a trade-off in terms of stability. Similarly, facilitating bank entry generally yields benefits in terms of competition and access to finance and so enhances economic growth. Although effects of competition on financial stability have been subject of controversy, most recent evidence suggests that increased competition via contestable markets is positive for stability.

In the EU, the banking sector is the main financing source for the real economy. In the Euro Area, almost 50% of the financing of the real economy is performed via banking loans<sup>310</sup>.

In 2009, the outstanding amount of loans granted by Euro Area MFIs was €17,700 bn, while outstanding amount of securities issued in official markets were €15,300 bn for bonds and €4,400 bn for shares and equity. When the interbank loans and the securities issued by banks are not considered the figures were €11,750 bn for loans, €10,000 bn for bonds and €3,800 bn for shares and equity.

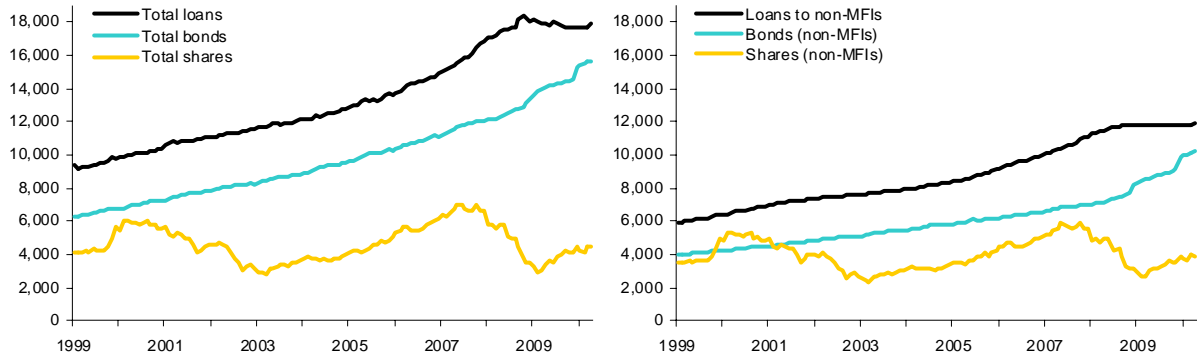
It should be underlined that the role of the banks as providers of financing to the economy goes beyond their "direct" intermediation activity. Beyond the lending activities, MFIs are very active in both the equity and bond markets. Indeed, in 2009, EA MFIs held over €5,000 bn bonds and €1,200 bn shares, corresponding to approximately one third of the respective markets. Therefore, taking into consideration the lending activity through loans and the financing through securities, the banking sector is responsible for about two thirds of the financing available in the Euro Area.

Chart 3: Sources of financing in the Euro Area

Total, €bn

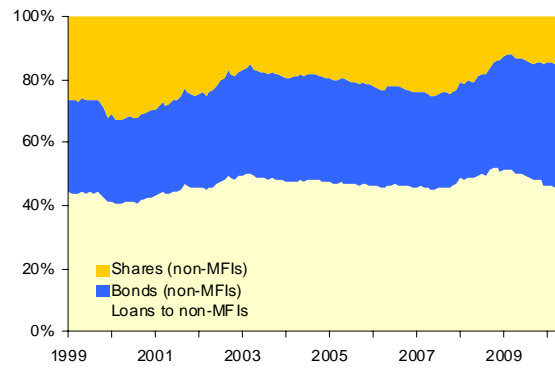
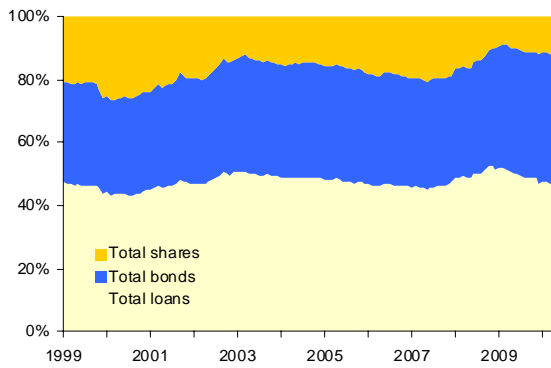
Excluding MFIs, €bn

<sup>310</sup> Equity, bonds and loans not issued in official market or through the banking system are neglected.



Total, %

Excluding MFIs, %



Note: Data for bonds and shares issued outside official markets are not available.

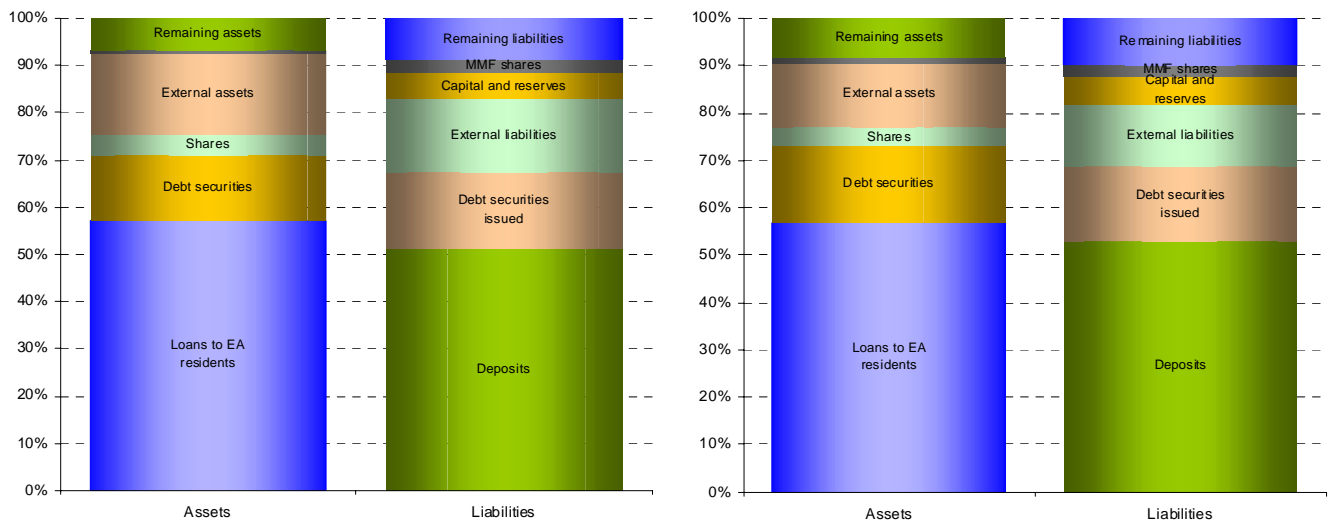
Source: European Central Bank and own calculations.

#### Chart 4: Aggregate balance sheet of Euro Area MFIs

MFIs excluding the Eurosystem

2006

2009



Source: European Central Bank and own calculations.

### The importance of financial regulation for financial stability and sustainable growth

While the banking sector generally contributes to economic and financial development, the financial crisis has painfully revealed its weaknesses and the risks it bears for the entire economy. This section briefly reviews the

theory and empirical evidences regarding the role of regulation (for example minimum capital requirement), the capacity to lend and the economic activity.

A growing body of empirical research on the links between financial development and economic growth produces a remarkably consistent narrative: The services provided by the financial system exert a first-order impact on long-run economic growth.<sup>311</sup>

First, countries with better-developed financial systems tend to grow faster. Specifically, countries with (i) large, privately-owned banks that funnel credit to private enterprises and (ii) liquid stock exchanges tend to grow faster than countries with corresponding lower levels of financial development. The level of banking development and stock market liquidity each exerts an independent, positive influence on economic growth. Second, simultaneity bias (whether economic growth leads to financial development or vice versa) does not seem to be present, suggesting that it is indeed financial development that contributes to economic growth. Third, better-functioning financial systems ease the external financing constraints that impede firm and industrial expansion. Thus, one channel through which financial development matters for growth is by easing the ability of financially constrained firms to access external capital and expand.

Building on this last point, some studies suggest this is due to a "broad credit channel" (Oliner and Rudebusch, 1996), where the supply of funds comes from all financial intermediaries and markets, not just banks. This view is supported by Discroll (2004) who finds that for U.S. states, bank loans themselves have small, often negative and statistically insignificant effects on output. This could be due to the fact that firms are not in fact bank-dependent, and are able to substitute other forms of finance, such as bond or equity financing for firms with ready access to such markets, trade credit or other kinds of borrowing from other firms in the case of firms which do not have such access.

The existence of a credit channel operating through the banking system cannot be denied however. Kroszner, Laeven and Klingebiel (2007) analyse the effects of financial crisis on externally dependent sectors in both, well- and poorly-developed financial systems. They show that in times of crisis, externally dependent sectors (comprised of young firms or firms with a large fraction of hard-to-measure intangible assets) tend to experience a greater contraction of value added in well-developed, financial systems than in countries with shallower financial systems. Their reasoning is that a deeper financial system allows sectors dependent on external finance to obtain relatively more external funding in normal periods, so a crisis that significantly impairs the functioning of banks has a disproportionately negative effect on externally dependent firms in such systems. In contrast, since externally dependent firms tend to obtain relatively less external financing in shallower financial systems, a crisis in such countries has less of an effect on the growth of these sectors. Similarly, the authors find a disproportionately negative impact of banking crises on real growth in sales, real growth in earnings, and real stock returns for firms in externally dependent industries. While these results might suggest a dark side of financial development, the authors do not find evidence that on net the externally dependent firms fare worse in deep financial systems.

Overall, while the finding that **financial development has a positive impact on economic growth is generally accepted**, an important limitation of almost all studies on financial development and growth should be noted: There is a significant difficulty in designing empirical proxies for "financial development" (Levine and Demirgüç-Kunt, 2008).

There are two reasons for this difficulty: First, researchers do not have very good cross-country measures of the ability of financial systems to provide their services (to facilitate the screening of firms before they are financed, the monitoring of firms after they are financed, the managing of idiosyncratic project risk and liquidity risk, as well as the exchange of goods, services, and financial claims) to the economy. Second, international financial market integration makes the size of a domestic financial system an inadequate indicator of efficiency gains in terms of accessibility to credit and financial services, intermediation costs, or productivity of capital employed (Guiso et al. 2004).

Traditional approaches to bank regulation emphasize the **positive features of capital adequacy requirements** (Dewatripont and Tirole, 1994). Capital serves as a buffer against losses and hence failure. Furthermore, with limited liability, the proclivity of banks towards higher risk activities is curtailed with greater amounts of capital

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<sup>311</sup> The following paragraph builds on work by Bagehot (1873), Gurley and Shaw (1955), Goldsmith (1969), and McKinnon (1973), recent research has employed different econometric methodologies and data sets in producing three core results (Levine and Demirgüç-Kunt, 2008)

at risk. Capital adequacy requirements, especially with deposit insurance, play a crucial role in aligning the incentives of bank owners with depositors and other creditors (Berger et al., 1995).

As reviewed in Santos (2001) and Gorton and Winton (2003), however, theory provides conflicting predictions as to whether the imposition of capital requirements will have positive effects on stability and growth. For instance, Kim and Santomero (1988), Besanko and Kanatas (1996), and Blum (1999) argue that capital requirements **may increase risk-taking behaviour**. Furthermore, Thakor (1996) models the impact of an increase in risk-based capital requirements and concludes these reduce banks' willingness to screen and lend. In a general equilibrium context, Gorton and Winton (2000) show that raising capital requirements forces banks to supply fewer deposits, reducing the liquidity-providing role of banks<sup>312</sup>.

Barrell et al. (2009) argue that **changing capital and liquidity ratios changes the probability of financial crises**. They show that it would have been beneficial in terms of output to have had a one or even two percentage point higher level of capital and liquidity requirements in the UK prior to the current crisis. These results do not hold for the Euro Area or the US as they argue that a crisis in the UK was more likely, suggesting that with higher probabilities for a crisis, higher capital requirements are beneficial for long-term economic output<sup>313</sup>.

As banking sector plays a central role in economy any changes in regulatory environment that have impact on banking sector should indirectly affect also economic activity. The existing literature suggests the following relationships between the regulation and economic growth:

- Effects of capital requirements and leverage ratios on sustainable financial development are ambiguous; yet it is suggested that combining these policies may yield positive results.
- Effects of deposit insurance in terms of financial stability are ambiguous as they can reduce the systemic risk associated with bank runs but may reduce incentives for risk management in covered institutions and incentives for private sector oversight.
- Strong supervisory power on banks is beneficial for building robust legal systems.
- Evidence on the effectiveness of private sector monitoring of banks is ambiguous.
- Bank governance is found to be relevant to financial stability in two important respects:
- Bank risk is generally higher in banks that have concentrated ownership with substantial cash flow rights.
- The relation between risk and regulation depends critically on each bank's ownership structure, because it can determine whether the impact of regulation is either positive or negative with regard to stability.
- While private ownership of banks entails risks and needs careful design, government ownership of banks usually yields lower levels of financial development and growth, yet more concentrated lending and higher systemic fragility.

### **Available evidence from the cost of financial (banking) crisis**

As illustrated in the previous section, financial and banking regulation is crucial to the stability of the sector and eventually the long-term economic growth. These findings are further underlined by the evidence on the cost of past (and current) financial and banking crisis and provide a good rationale for designing and implementing appropriate regulation.

Financial crises, defined as systemic banking crises<sup>314</sup>, which can be aggravated by foreign exchange or sovereign debt crises, are particularly socially costly, not only for the rescue of ailing institutions but also in terms of opportunity costs and foregone growth. The traditional computations of the cost of such a crisis for a country are based on a calculation of its direct and indirect fiscal costs, as described in the graph below.

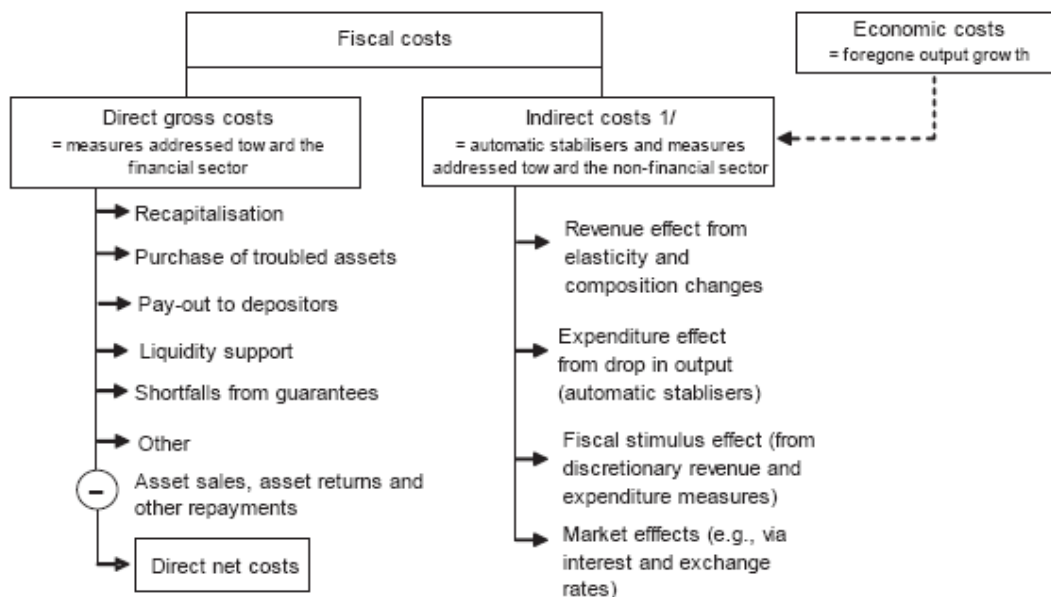
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<sup>312</sup> It should be noted that this literature does not take into account the Basel II framework where the more direct link between capital requirements and the specific risk of banks' activities may help to ease any incentive problems in risk management.

<sup>313</sup> They also refer to the case of Spain where the robustness of the banks shows the value of higher capital.

<sup>314</sup> Following the definition of Leaven and Valencia (2008) cited by the "Public Finances in EMU 2009" of the European Commission

**Chart 05: The costs of a financial crisis**



**Source:** European Commission, DG Economic and Financial Affairs (2009): "Public Finances in EMU 2009", European Economy 5, 10th edition

However, these fiscal costs do not include costs borne by depositors and borrowers, stemming from exposure to failed banks, or when facing higher costs for services provided by banks that compensate for losses.

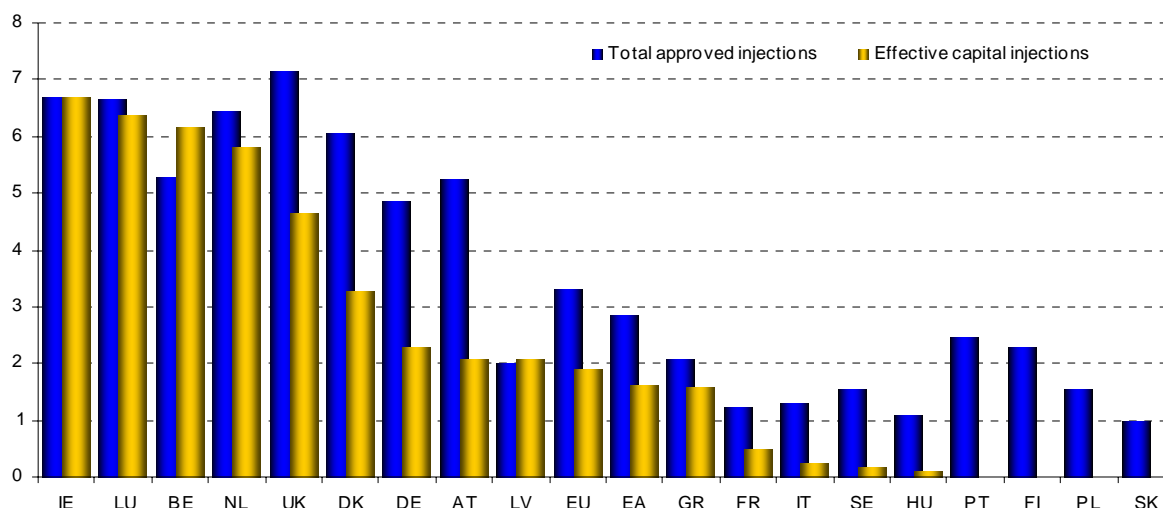
The debate also focuses on the best way to compute the economic costs of a banking crisis and the extent of what is referred to as the output gap caused by this crisis. The literature offers different means to conduct such calculations. On the one hand, it would be possible to approximate output losses as the difference between output growth before and a few years after the crisis – usually the time that it returns to its trend; on the other hand, to be more accurate, the difference could be computed in levels rather than in growth rates of GDP. Finally, econometric estimations of output gaps allow controlling for the bias that could come from "normal" cyclical output variations.

The European Commission analysed empirically in its publication, *Public Finances Report in the EMU 2009*, the costs of 49 crises that occurred in emerging and market economies since the 1970s. Consistent with the figures found by Leaven and Valencia (2008), the Commission reported an average direct net cost of 13%, i.e. expenses due only to the rehabilitation of the banking sector and already accounting for the recovery that the government can get from the sale or repayment of impaired assets that it had to buy – even though the average recovery rate did not exceed 18% of the initial gross outlays. Focusing only on the EU27, these figures show an average net fiscal cost of 6.6% of GDP, with a 23.9% recovery ratio, both under the OECD averages (respectively 11.4% of GDP and 29.7%).

All in all, the net fiscal costs of the last financial crisis should be rather greater than those of past crises, mainly because of its global nature, and given the recent expansion of the banking sector and low foreseen recovery of impaired assets. In the EU, according to the Commission report, these net fiscal costs could reach 16.5% of GDP on average, with higher figures for some Member-States taken individually.

Indeed, as it appears in the graphs below, the extent of capital injections and of guarantees on bank liabilities, in terms of percentage of GDP, varied greatly from one European country to another, respectively from 1% to 7% and from 1% to almost 240%.

**Chart 6: Public interventions in the banking sector (% of GDP) - situation at 31/12/2009**

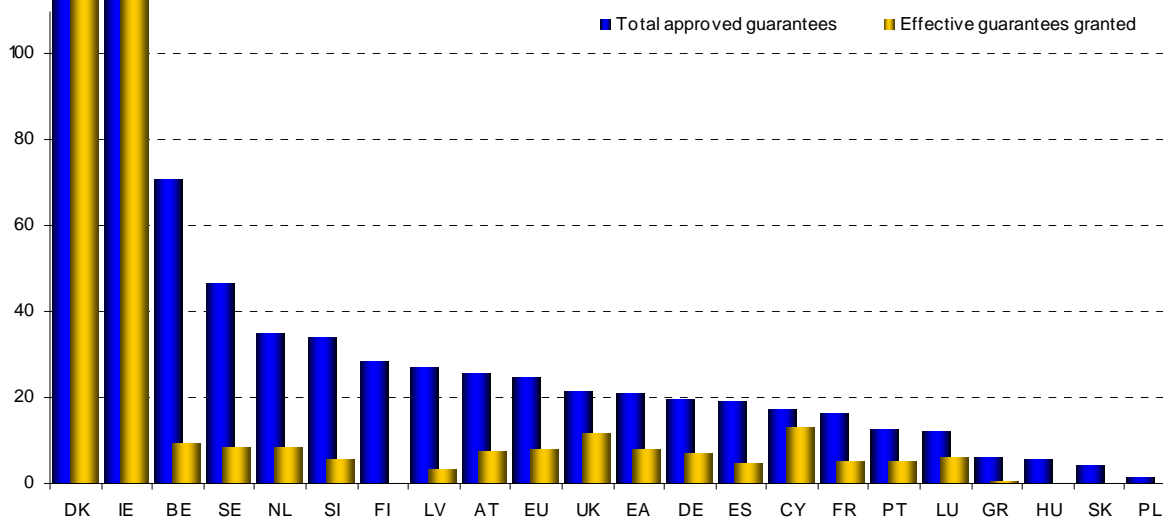


Source: Commission Services

Beyond the direct burden of the banking rescue measures, the indirect costs of past financial crises have also weighted significantly on social wealth. The gross public debt-to-GDP ratio has on average grown by 18% in the course of the years when past crises occurred, under the multiple pressures of automatic stabilizers and fiscal stimuli. In addition to this expenditure effect (+1.1% of GDP in EU27 on average), financial crises also trigger a loss through the revenue effect (on average -0.9% in the EU27), notably in terms of foregone tax payments, as well as a potential strong market effect leading to higher premia on interest payments.

This consequence is particularly worrying because of its long-term implications. Indeed, in the sample analysed by the Commission, it took governments at least eight years to come back to pre-crisis levels of debt-to-GDP ratios, driven up both by the changes in the primary deficit and by the "snow-ball effect" of interest payments.

Chart 7: Guarantees on bank liabilities (% of GDP)



Notes: Denmark: 237.5% approved guarantees and 205.3% effective guarantees granted.  
Ireland: 167.5% approved and effective guarantees granted.  
Source: Commission services

**ANNEX IV: LIQUIDITY COVERAGE RATIO AS SPECIFIED IN FEBRUARY 2010 PUBLIC CONSULTATION**

The public consultation of February 2010 by the Commission services included the following possible specification of the LCR. As regards the buffer of high quality liquid assets, the Commission services consulted on the impact of both a narrow regulatory definition of liquid assets composed of cash, central bank reserves and high quality sovereign debt, as well as a somewhat broader definition which could also include a proportion of high quality corporate bonds and/or covered bonds.

<b>Item</b>	<b>Factor (to be multiplied against total amount)</b>
<b><i>Stock ("buffer") of "high quality liquid assets"</i></b>	
Cash and qualifying central bank receivables (including reserves to the extent that they can be drawn down in times of stress)	100%
Qualifying marketable securities from sovereigns, central credit institutions, public sector entities, and multi-lateral development banks that could receive a 0% risk weight for credit risk under the standardised approach	100%
Domestic sovereign or central bank debt in domestic currency	100%
For not more than 50% of the buffer, the following additional assets could be considered:	
Corporate bonds not issued by institutions rated AA or higher A- to AA-	80% 60%
Covered bonds not issued by the institution itself rated AA or higher rated A- to AA-	80% 60%
to the extent that those corporate and covered bonds are traded in large, deep and active markets characterised by a low level of concentration and a bid-ask-yield spread that has not exceeded 40 bsp (assigned a 20% haircut) or 50 bsp (assigned a 40% haircut) neither during all of the last 10 years nor during a relevant period of significant liquidity stress. Furthermore, the maximum historic decline of price or increase in haircut over a 30-day period neither during the last 10 years nor during a relevant period of significant liquidity stress may not exceed 10%.	
<b><i>Cash Outflows over 30 days under the regulatory stress scenario, taking into account the earliest possible call or termination date for the funding</i></b>	
<u><i>Retail deposits placed by a natural person (rather than a legal entity), but excluding deposits placed by sole proprietorships and partnerships. However deposits by a legal entity, sole proprietorship or partnership where the reported sales for the consolidated group of which the firm is a part are less than €50 million and the total aggregated funding raised from one such customer is less than €1 million may be treated as retail.</i></u>	
- stable deposits that are both covered by an EEA deposit insurance scheme (or a non-EEA scheme recognised as effective by competent authorities) and are made in transactional accounts (e.g. accounts where salaries are automatically credited) or the depositors have other established relationships with the same bank which make deposit withdrawal highly unlikely;	7.5%
- less stable retail deposits [additional sub-categories to be determined]	15% or higher for possible sub-categories
<b><i>Unsecured wholesale funding:</i></b>	
- non-financial corporates, no operational (cash management, salary disbursement etc. to be defined further) relationship with credit institution	75%
- non-financial corporates, sovereigns, central banks and public sector entities	25% of deposits needed for

<b>Item</b>	<b>Factor (to be multiplied against total amount)</b>
with operational relationships	operational purposes
- other legal entity customers and sovereigns, central banks, and PSEs without operational relationships	100%
<i><b>Secured funding:</b></i>	
Funding from repo of assets not eligible for the buffer and securities lending/borrowing transactions where assets not eligible for the buffer are lent out	100%
Liabilities related to derivative collateral calls related to a downgrade of up to 3-notches	100% of collateral that would be required to cover the contracts in case of up to a 3-notch downgrade
Market valuation changes on derivatives transactions requiring additional collateral/margin	treatment still to be determined
Valuation changes on posted non-cash or non-high quality sovereign debt collateral securing derivative transactions	20%
ABCP, SIVs, Conduits, etc:	100% of maturing amounts and 100% of returnable assets
Term ABS (incl. structured covered bonds)	100% of maturing amounts
<i><b>Currently undrawn portion of committed credit and liquidity facilities to:</b></i>	
- retail clients	10% of outstanding lines
- non-financial corporates; credit facilities	10% of outstanding lines
- non-financial corporates; liquidity facilities	100% of outstanding lines
-- other legal entity customers	100% of outstanding lines
Other contingent funding liabilities (such as guarantees, letters of credit, revocable credit and liquidity facilities etc)	treatment still to be determined
Planned outflows related to renewal or extension of new loans (retail or wholesale) and any other cash outflows (including planned derivative payables)	100%
<i><b>Cash Inflows</b></i>	
Amounts receivable from retail counterparties	100% of planned inflows from performing assets
Amounts receivable from wholesale counterparties	100% of planned inflows from performing wholesale customers
Receivables in respect of repo and reverse repo transactions backed by assets not eligible for the buffer and securities lending/borrowing transactions where assets not eligible for the buffer are borrowed.	100%
Receivables in respect of repo and reverse repo transactions backed by assets eligible for the buffer and securities lending/borrowing transactions where assets eligible for the buffer are borrowed.	0%
Undrawn portion of liquidity lines or other facilities committed to the institution	0%



## ANNEX V: NET STABLE FUNDING RATIO AS SPECIFIED IN FEBRUARY 2010 PUBLIC CONSULTATION

The public consultation of February 2010 by the Commission services included the following possible specification of the NSFR.

Sources of stable funding available for purposes of the requirement	Availability Stable funding Factor
Own funds eligible instruments and other liabilities > 1year residual term	100%
Stable deposits of retail and small business customers (non-maturity or residual maturity < 1year)	85%
Less stable deposits of retail and small business customers (non-maturity or residual maturity < 1year)	70%
Wholesale funding provided by non-financial corporate customers (non-maturity or residual maturity < 1year)	50%
All other liabilities and equity not included above	0%

Assets requiring stable funding	Required Stable Funding Factor
<p>All cash immediately available to meet obligations not held for operational purposes, not currently encumbered as collateral and not held for planned use as contingent collateral.</p> <p>All short-term unsecured instruments and transactions with outstanding maturities of less than one year.<sup>315</sup></p> <p>All securities with stated remaining maturities of less than one year with no embedded options that would increase the expected maturity to more than one year.</p> <p>All securities held where the institution has an offsetting reverse repurchase transaction when the security on each transaction has the same unique identifier (e.g. ISIN)</p> <p>All loans to financial entities with effective maturities of less than one year that are not renewable and for which the lender has an irrevocable right to call. When the loan is secured, the underlying collateral must have a maturity of less than one year.</p>	0%
Unencumbered marketable securities with residual maturities over one year representing claims on or claims guaranteed by sovereigns, central banks, BIS, IMF, EC, non-central government public sector entities (PSEs) or multilateral development banks which are rated AA or higher and are assigned a 0% risk-weight under the credit risk standardised approach, provided that active repo-markets exist for these securities.	5%
<p>Unencumbered corporate bonds<sup>316</sup> or covered bonds<sup>317</sup> satisfying all of the following conditions:</p> <p style="padding-left: 20px;">- Central bank eligibility for intraday liquidity needs or overnight liquidity shortages in relevant jurisdictions.<sup>318</sup></p>	20%

<sup>315</sup> Such instruments include but are not limited to: short-term government and corporate bills notes and obligations; commercial paper; negotiable certificates of deposits; reserves with central banks and sale transactions of such funds (e.g. fed funds sold); bankers acceptances; money market mutual funds.

<sup>316</sup> Corporate bonds are plain vanilla assets whose valuation is easy and standard and does not depend on private knowledge, i.e. no complex structured products, no subordinated debt.

<sup>317</sup> Covered bonds eligible under point 68 of Annex VI of Directive 2006/48/EC

<sup>318</sup> Central bank eligibility: This is an optional criterion for jurisdictions whose list of central bank eligible assets is only very narrowly defined. In those jurisdictions, the relevant supervisors may exercise discretion to

Assets requiring stable funding	Required Stable Funding Factor
<ul style="list-style-type: none"> <li>- Not issued by a credit institution, investment or insurance or financial services firm and in particular not issued by the respective firm itself</li> <li>- Low credit risk: assets have a credit assessment by a recognised ECAI equivalent to at least AA, or do not have a credit assessment by a recognised ECAI and are internally rated as having a PD equivalent to that associated with a AA credit assessments of ECAs</li> <li>- Proven record as a reliable source of liquidity in the markets (repo and sale) even during stressed market conditions: ie maximum price change or increase in haircut over a 30-day period during the last 10 years or during a relevant period of significant liquidity stress not exceeding 10%.</li> <li>- Traded in large, deep and active markets characterised by a low level of concentration. The bid-ask-yield spread has not exceeded 40 bsp during the last 10 years or during a relevant period of significant liquidity stress.</li> </ul>	
<p>Unencumbered gold, corporate bonds, covered bonds, and equity securities that satisfy all of the following conditions:</p> <ul style="list-style-type: none"> <li>- Central bank eligibility for intraday liquidity needs or overnight liquidity shortages in relevant jurisdictions.<sup>319</sup></li> <li>- Not issued by a credit institution, investment, insurance, or financial services firm (except in the case of covered bonds).</li> <li>- Not issued by the respective firm itself</li> <li>- Low credit risk: assets have a credit assessment by a recognised ECAI of at least single A, or do not have a credit assessment by a recognised ECAI and are internally rated as having a PD equivalent to that associated with a single A credit assessments of ECAs conform the Basel II Accord.</li> <li>- Traded in large, deep and active markets characterised by a low level of concentration. The bid-ask-yield spread has not exceeded 50 bsp during the last 10 years or during a relevant period of significant liquidity stress.</li> <li>- Listed on a recognised exchange and included in a large cap market index.</li> </ul> <p>All assets held in the trading book that are not securities or loans that satisfy all of the following conditions.</p> <ul style="list-style-type: none"> <li>- The instrument's fair value can be determined based on inputs that are quoted prices (unadjusted) in active markets for identical assets at the measurement date.</li> <li>- Traded in large, deep and active markets characterised by a low level of concentration. The bid-ask-spread has not exceeded 50 bsp during the last 10 years or during a relevant period of significant liquidity stress.</li> <li>- Listed on a recognised exchange in multiple time zones and included in a main index.</li> </ul> <p>Loans to non-financial corporate clients having a maturity of less than one year.</p>	50%
Loans to retail clients (ie natural persons) having a maturity of less than one year.	85%
All other assets not included in the above categories.	100%

allow non-central bank eligible corporate bonds provided that they meet the other respective criteria above.

<sup>319</sup> Central bank eligibility: This is an optional criterion for jurisdictions whose list of central bank eligible assets is only confined to tier 1 assets. In those jurisdictions, the relevant supervisors may exercise discretion to allow non-central bank eligible corporate bonds provided that they meet the other respective criteria

## **ANNEX VI: ELIGIBILITY CRITERIA FOR CORE TIER 1, NON-CORE TIER 1 AND TIER 2 REGULATORY CAPITAL AS SPECIFIED IN FEBRUARY 2010 PUBLIC CONSULTATION**

The public consultation of February 2010 by the Commission services included the following possible eligibility criteria for regulatory capital.

### **Eligibility criteria for core Tier 1 capital**

1. Represents the most subordinated claim in liquidation of the institution.
2. Entitled to a claim of the residual assets that is proportional with its share of issued capital, after all senior claims have been repaid in liquidation, i.e. has an unlimited and variable claim, not a fixed or capped claim.
3. Principal is perpetual and never repaid outside of liquidation, setting aside discretionary repurchases or other means of effectively reducing capital in a discretionary manner that is allowable under national law.
4. The institution does nothing to create an expectation at issuance that the instrument will be bought back, redeemed or cancelled nor do the statutory or contractual terms provide any feature which might give rise to such an expectation.
5. Distributions are paid out of distributable items (retained earnings included). The level of distributions are not in any way tied or linked to the amount paid in at issuance and are not subject to a cap, except to the extent that an institution is unable to pay distributions that exceed the level of distributable items.
6. There are no circumstances under which distributions are obligatory. Non-payment is therefore not an event of default.
7. Distributions are paid only after all legal and contractual obligation have been met and payments on more senior capital instruments have been made. There are no preferential distributions, including in respect of other elements classified as the highest quality issued capital.
8. It is the issued capital that takes the first and proportionately greatest share of any losses as they occur. Within the highest quality capital, each instrument absorbs losses on a going concern basis proportionately and *pari passu* with all the others.
9. The paid in amount is recognised as equity capital (i.e. not recognised as a liability) for determining balance sheet insolvency.
10. The paid in amount is classified as equity under the relevant accounting standards.
11. It is directly issued and paid-up.
12. The paid in amount is neither secured nor covered by a guarantee of the issuer or related entity or subject to any other arrangement that legally or economically enhances the seniority of the claim.
13. It is only issued with the approval of the owners of the issuing institution, either given directly by the owners or, if permitted by applicable law, given by the Board of Directors or by other persons duly authorised by the owners.
14. It is clearly and separately disclosed on the institution's balance sheet.

### **Eligibility criteria for non-core Tier 1 capital**

1. Issued and paid-up.
2. Subordinated to depositors, general creditors and subordinated debt of the institution.
3. Is neither secured nor covered by a guarantee of the issuer or related entity or other arrangement that legally or economically enhances the seniority of the claim vis-à-vis institution creditors.
4. Is perpetual: there is no maturity date and no incentive to redeem.
5. May be called at the initiative of the issuer only after a minimum of five years.
  - a. To exercise a call option an institution must receive prior supervisory approval.
  - b. An institution shall do nothing that creates an expectation that the call will be exercised.
  - c. An institution shall not exercise a call unless:
    - i) it replaces the called instrument with capital of the same or better quality and the replacement of this capital is done at conditions which are sustainable for the income capacity of the institution; or
    - ii) the institution demonstrates fully to the competent authorities that its capital position would be well above the minimum capital requirements after the call option is exercised.
6. Any repayment of principal (e.g. through repurchase or redemption) shall be subject to prior approval by the competent authorities. An institution shall not assume or create market expectations that such approval will be granted.
7. Dividend/coupon discretion.
  - a. An institution shall have full discretion at all times to cancel distributions / payments.

- b. Cancellation of discretionary payments shall not be an event of default.
  - c. An institution shall have full access to cancelled payments to meet obligations as they fall due.
  - d. Cancellation of distributions / payments shall not impose restrictions on the institution except in relation to distributions to common shareholders.
8. Dividends / coupons shall be paid out of distributable items.
  9. The instrument shall not have a credit sensitive dividend feature, that is a dividend that is reset periodically based in whole or in part on the current credit standing of the institution's or that of its group.
  10. The instrument shall not contribute to liabilities exceeding assets if such a balance sheet test forms part of national insolvency law.
  11. An instrument classified as a liability for the purposes of national insolvency law shall have principal loss absorption through either: conversion to common shares at an objective pre-specified trigger point or a write-down mechanism that allocates losses to the instrument at a pre-specified trigger point. A write-down shall:
    - a. Reduce the claim of the instrument in liquidation;
    - b. Reduce the amount re-paid when a call is exercised; and
    - c. Partially or fully reduce coupon / dividend payments on the instrument.
  12. The issuing institution or a related party shall not knowingly purchase, or directly or indirectly fund the purchase of, the instrument.
  13. The instrument shall not have any feature that could hinder recapitalisation, such as provisions that require the issuer to compensate investors if a new instrument is issued at a lower price during a specified period.
  14. If an instrument is not issued out of an operating entity in the consolidated group (e.g. a Special Purpose Vehicle or holding company), proceeds must be immediately available without limitation to an operating entity in the consolidated group in a form which meets or exceeds all of the other eligibility criteria for non-Core Tier 1 Capital.

**Additional requirements**

The criteria above shall also apply to an instrument that appears in the consolidated accounts as a minority interest.

This element of capital shall be net of the appropriate corresponding deductions related to holding of non-common equity capital instruments in other financial institutions.

**Eligibility criteria for Tier 2 capital**

1. Issued and paid-in.
2. Subordinated to depositors and general creditors of the institution
3. Is neither secured nor covered by a guarantee of the issuer or related entity or other arrangement that legally or economically enhances the seniority of the claim vis-à-vis depositors and general institution creditors
4. Maturity
  - a. Has a minimum original maturity of at least 5 years.
  - b. Recognition in regulatory capital in the remaining 5 years before the repayment date will be amortised on a straight line basis.
  - c. There are no incentives to redeem.
5. May be callable at the initiative of the issuer only after a minimum of five years.
  - a. To exercise a call option an institution must receive prior approval by the competent authorities.
  - b. An institution shall not do anything that creates an expectation that the call will be exercised.
  - c. Institutions shall not exercise a call unless:
    - i. they replace the called instrument with capital of the same or better quality, and the replacement of this capital is done at conditions which are sustainable for the income capacity of the institution; or
    - ii. the institution demonstrates fully to the competent authorities that its capital position would be well above the minimum capital requirements after the call option is exercised.
6. An investor in the instrument shall have no rights to accelerate the repayment of future scheduled payments (coupon or principal), except in bankruptcy and liquidation.
7. The instrument shall not have a credit sensitive dividend feature, that is a dividend that is reset periodically based in whole or in part on the institution's current credit standing or that of its group.
8. The institution or a related party shall not have knowingly purchased, or directly or indirectly have funded the purchase of, the instrument
9. If the instrument is not issued out of an operating entity in the consolidated group (e.g. a Special Purpose Vehicle or holding company), the proceeds shall be immediately available without limitation to an operating entity in the consolidated group in a form which meets or exceeds all of the other criteria for inclusion in Tier 2 Capital.

**Additional requirements**

These criteria shall also apply to instruments which appear in the consolidated accounts as minority interest. This element of capital will be net of the appropriate corresponding deductions related to holding of non-common equity capital instruments in other financial institutions.

## **ANNEX VII: REGULATORY ADJUSTMENTS AS SPECIFIED IN FEBRUARY 2010 PUBLIC CONSULTATION**

### **Prudential filters and deductions from the Core Tier 1**

#### **Stock surplus**

Stock surplus (i.e., share premium) may be included in Core Tier 1 only if the shares giving rise to the stock surplus qualify as Core Tier 1 capital.

Stock surpluses relating to shares excluded from Core Tier 1, e.g., preference shares, shall be included in the same elements of capital as the shares to which they relate.

#### **Minority interests**

Minority interests may not be included in Core Tier 1.

#### **Goodwill and other intangibles**

Goodwill and other intangibles shall be deducted from Core Tier 1 capital. The amount deducted shall be net of any associated deferred tax liability that would be extinguished if the goodwill became impaired or derecognised under the relevant accounting standards.

#### **Deferred tax assets**

Deferred tax assets that rely on future profitability of the institution to be realised shall be deducted from Core Tier 1. The amount deducted shall be net of deferred tax liabilities.

Deferred tax assets that do not rely on the future profitability of the institution to be realised - e.g. prepayments to tax authorities - shall be assigned the relevant sovereign risk weighting under the institution's approach to credit risk for the sovereign asset class, i.e. Standardised or Internal Ratings Based Approach.

#### **Investments in own shares (treasury stock)**

An institution's investments in its own common shares shall be deducted from Core Tier 1 capital (unless already derecognised under the relevant accounting standards). Any own stock which the institution could be contractually obliged to purchase shall be deducted from Core Tier 1 capital. The treatment described would apply irrespective of the location of the exposure in the non-trading book or the trading book. In addition:

- gross long positions shall be deducted net of short positions only if the short positions involve no counterparty risk; and
- institutions shall look through holdings of index securities to deduct exposures to own shares.

#### **Investments in the common shares of certain banking, financial and insurance entities which are outside the regulatory scope of consolidation**

Institutions shall apply a 'corresponding deduction approach' to investments in the capital of other credit institutions, other financial institutions and insurance entities where they fall outside of the regulatory scope of consolidation. The deduction shall be applied to the same component of capital for which the capital would qualify if it were issued by the institution itself.

All holdings of capital which form part of a reciprocal cross holding agreement or are investments in affiliated institutions (e.g. sister companies) shall be deducted in full on a corresponding basis. For all other holdings, the corresponding deduction approach would apply when the holdings exceeded certain thresholds. For holdings of common stock the thresholds shall be as follows:

- if an institution has holdings of common stock in other credit and financial institutions which exceed 10% of the common stock of the other credit and financial institutions then the full amount of this holding shall be deducted from the institution's Core Tier 1 capital; and
- if a institution has holdings of common stock in other credit and financial institutions which in aggregate exceed 10% of the institution's Core Tier 1 (after applying all other regulatory deductions) then the amount above 10% shall be deducted from the institution's Core Tier 1 capital.

This treatment described shall apply irrespective of whether the exposure is assigned to the non-trading book or the trading book. In addition:

- gross long positions may be deducted net of short positions only if the short positions involve no counterparty risk; and
- institutions shall look through holdings of index securities to deduct relevant exposures to financial institutions which exceed the threshold limits.

#### **Shortfall of the stock of provisions to expected losses**

Any shortfall in the stock of provisions compared with the expected loss amount under the Internal Ratings Based (IRB) approach shall be made from Core Tier 1 capital.

#### **Cash flow hedge reserves**

The positive and negative cash flow hedge reserve should be removed from Core Tier 1 capital where it relates to the hedging of projected cash flows that are not recognised on the balance sheet.

#### **Gains and losses due to changes in own credit risk on fair valued financial liabilities**

All gains and losses resulting from changes in the fair value of liabilities that are due to a changes in the institution's own credit risk shall be removed from Core Tier 1 capital.

**Defined benefit pension fund assets and liabilities**

No filter shall be applied to net defined benefit pension fund liabilities.

The value of any defined benefit pension fund net asset should be deducted from Core Tier 1 capital. Subject to supervisory approval, assets in the fund to which an institution has unfettered access could be permitted to offset the deduction. Such offsetting assets should be assigned the risk weight they would receive if they were owned directly by the institution.

**Remaining 50:50 deductions**

All remaining deductions currently made 50% from Tier 1 and 50% from Tier 2, and which are not addressed elsewhere in the proposal, should receive a 1,250% risk weight. These include:

- certain securitisation exposures;
- certain equity exposures under the Probability of Default / Loss Given Default approach;
- free deliveries; and
- significant investments in commercial entities.

## ANNEX VIII: ASSESSMENT OF ADMINISTRATIVE COSTS AND BURDENS

Implementation of legislation entails costs for businesses. Costs that are linked to providing information either to public or private parties are called administrative costs. The share of these costs that is specifically linked to information that businesses would not collect and provide in the absence of a legal obligation is called administrative burdens. The Commission's Better Regulation strategy is aimed at measuring administrative costs and reducing administrative burdens.<sup>320</sup>

In the area of prudential banking regulation, certain information requirements are necessary to provide for the desired level of financial stability and creditor protection and, hence, should be set at a level that ensures an equilibrium between ensuing administrative burdens and the benefits that they yield. With regard to the legislative changes brought forward with this initiative, it has to be noted that they were undertaken with a view to achieving multiple operational, specific and general objectives and had to be designed accordingly.

In August-September 2010, the Commission services distributed a questionnaire about the impacts of CRD IV proposal on administrative cost to the members of the Group of Experts in Banking issues (GEBI). The questionnaire was distributed directly to 25 bank members of the Group and to members of the following industry associations: European Banking Federation, European Savings Banks Group, European Association of Co-operative Banks, European Association of Public Banks and European Federation of Building Societies. In total, 24 replies from institutions in 10 Member States were received and of them, 16 (6 Group 1 banks and 10 Group 2 banks) were considered in the analysis of administrative burdens of the individual parts of the CRD IV proposal. A number of replies were omitted from this analysis as they contained estimated impacts only at the overall package level. It shall be noted that replies from Group 1 banks generally showed a wider dispersion of estimates than replies from Group 2 banks. For this reason, in the calculation of administrative burdens of Group 1 banks median answers were used as inputs, whereas for Group 2 banks, means were largely used.

Since the questionnaire referred to the consultative documents of the Basel Committee of December 2009 and announcement of the GHOS of July 2010 as the basis for the estimation of administrative burdens, the eventual administrative burdens may be different to the extent that final CRD IV provisions will differ from the above texts. A number of respondents have indicated that the figures - where provided - represent their best-effort estimates, as they are still in the process of assessing the implications of Basel III on their operations, including on costs related to reporting and information provision. Also, the below estimates overestimate the administrative costs and burdens to the extent that they were extrapolated based on the sample of banks almost entirely composed of larger institutions (particularly with regard to Group 2) from EU-15, whereas i) FTE-related annual costs are not distributed evenly across the EU-27 and ii) individual proposals (e.g., counterparty credit risk) may impact less, if at all, the smallest EU banks with a simple balance structure.

Comparing the impacts of different policy tools on administrative burdens (see table below), it can be observed that they vary depending on the bank type. In terms of administrative burdens on the on-going basis, Group 1 banks are the most affected by the proposals for counterparty credit risk, while Group 2 banks are the most affected by the new proposals in the area of liquidity risk management. The same observations hold for the one-off investment costs.

Overall, annual administrative burden, for Group 1 and Group 2 banks combined, due to the CRD IV provisions that are linked to Basel III is estimated to fall in the area of €3.2 billion (of them, 31% driven by LCR and 38% by NSFR), or approximately 0.008% of the EU bank assets. In terms of activities that would drive such costs, the respondents most frequently referred to data collection, IT/systems maintenance related costs, data quality assurance, analysis & review, management reporting and publication of information.

One-off costs are estimated in the range of €6.9 billion or approximately 0.016% of the EU bank assets.

Similarly to the on-going annual costs, these implementation-related expenditures are expected to be the highest in relation to the LCR (31% of all one-off costs) and the NSFR (38% of all one off-costs). With respect to the one-off costs, it needs to be kept in mind that they would be spread over a number of years, particularly, given the transitional provisions of the CRD IV.

The questionnaire also included a set of questions pertaining to the impact of proposals on the single rule book. The Commission services anticipate that the eventual impact in this area will vary by Member State (depending on the current exercise of national options and discretions and the extent of 'gold-plating') and bank type whereby banks with more cross-border activity would benefit from harmonization of the rules the most.

However, the sample size was insufficiently big and diverse to allow for the estimation of the impacts while simultaneously giving due consideration to the above factors.

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<sup>320</sup> For more on the Commission's approach towards dealing with administrative costs and burdens please see: [http://ec.europa.eu/governance/better\\_regulation/admin\\_costs\\_en.htm](http://ec.europa.eu/governance/better_regulation/admin_costs_en.htm)



**Table: Administrative burden of CRD IV by the area**

**ADMINISTRATIVE BURDENS OF CRD IV**

Capital definition						Tariff (€ per hour)		Time (hour)		Price (per action or equip)	Freq (per year)	Nbr of entities	Total nbr of actions	Total cost	Regulatory origin (%)				Comments & Assumptions	
No.	Ass. Art.	Orig. Art.	Type of obligation	Description of required action(s)	Target group	i	e	i	e						Int	EU	Nat	Reg		
1	N/A		Non-labelling information for third parties	Other	Group 1 banks	59		2.672		156.750	1	50	50	7.837.500	100%				Median 1,5 FTE at 110000 euros per year and BAU factor of 5%. One off cost after BAU factor of 10%	
2	N/A		Non-labelling information for third parties	Other	Group 1 banks					132.750	1	50	50	6.637.500	100%					
3	N/A		Non-labelling information for third parties	Other	Group 2 banks	53		816		42.848	1	4.500	4.500	192.813.750	100%				Mean 1,5 FTE at 110000 euros per year and BAU factor of 13%. One off cost after BAU factor of 13%	
4	N/A		Non-labelling information for third parties	Other	Group 2 banks					165.300	1	4.500	4.500	743.850.000	100%					
<b>Total administrative costs (€)</b>																		<b>951.138.750</b>		
<i>Administrative costs by origin (€)</i>																		951.138.750		
LCR						Tariff (€ per hour)		Time (hour)		Price (per action or equip)	Freq (per year)	Nbr of entities	Total nbr of actions	Total cost	Regulatory origin (%)				Comments & Assumptions	
No.	Ass. Art.	Orig. Art.	Type of obligation	Description of required action(s)	Target group	i	e	i	e						Int	EU	Nat	Reg		
1	N/A		Non-labelling information for third parties	Other	Group 1 banks	64		3.244		207.600	1	50	50	10.380.000	100%				Median 2 FTE at 120000 euros per year and BAU factor of 14%. One off cost after BAU factor of 10%	
2	N/A		Non-labelling information for third parties	Other	Group 1 banks					900.000	1	50	50	45.000.000	100%					
3	N/A		Non-labelling information for third parties	Other	Group 2 banks	55		3.935		216.403	1	4.500	4.500	973.814.202	100%				Mean 2,5 FTE at 103000 euros per year and BAU factor of 15%. One off cost after BAU factor of 15%	
4	N/A		Non-labelling information for third parties	Other	Group 2 banks					455.758	1	4.500	4.500	2.050.908.797	100%					
<b>Total administrative costs (€)</b>																		<b>3.080.102.999</b>		
<i>Administrative costs by origin (€)</i>																		3.080.102.999		
NSFR						Tariff (€ per hour)		Time (hour)		Price (per action or equip)	Freq (per year)	Nbr of entities	Total nbr of actions	Total cost	Regulatory origin (%)				Comments & Assumptions	
No.	Ass. Art.	Orig. Art.	Type of obligation	Description of required action(s)	Target group	i	e	i	e						Int	EU	Nat	Reg		
1	N/A		Non-labelling information for third parties	Other	Group 1 banks	64		3.375		216.000	1	50	50	10.800.000	100%				Median 2 FTE at 120000 euros per year and BAU factor of 10%. One off cost after BAU factor of 5%	
2	N/A		Non-labelling information for third parties	Other	Group 1 banks					875.900	1	50	50	43.795.000	100%					
3	N/A		Non-labelling information for third parties	Other	Group 2 banks	53		5.083		267.580	1	4.500	4.500	1.204.110.462	100%				Mean 3,3 FTE at 99000 euros per year and BAU factor of 17%. One off cost after BAU factor of 17%	
4	N/A		Non-labelling information for third parties	Other	Group 2 banks					574.419	1	4.500	4.500	2.584.883.485	100%					
<b>Total administrative costs (€)</b>																		<b>3.843.588.948</b>		
<i>Administrative costs by origin (€)</i>																		3.843.588.948		

**Table: Administrative burden of CRD IV by the area (continued)**

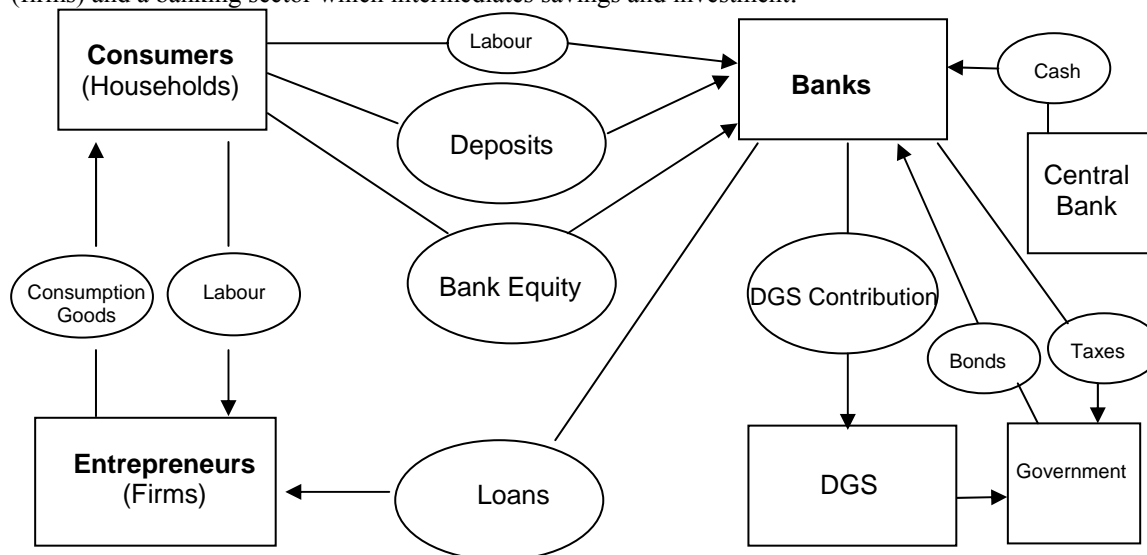
**ADMINISTRATIVE BURDENS OF CRD IV**

Leverage ratio						Tariff (€ per hour)		Time (hour)		Price (per action or equip)	Freq (per year)	Nbr of entities	Total nbr of actions	Total cost	Regulatory origin (%)				Comments & Assumptions	
No.	Ass. Art.	Orig. Art.	Type of obligation	Description of required action(s)	Target group	i	e	i	e						Int	EU	Nat	Reg		
1	N/A		Non-labelling information for third parties	Other	Group 1 banks	59		2.813		165.000	1	50	50	8.250.000	100%				Median 1,5 FTE at 110000 euros per year and BAU factor of 0%. One off cost after BAU factor of 0%	
2	N/A		Non-labelling information for third parties	Other	Group 1 banks					350.000	1	50	50	17.500.000	100%					
3	N/A		Non-labelling information for third parties	Other	Group 2 banks	37		700		25.913	1	4.500	4.500	116.606.663	100%				Mean 0,4 FTE at 70000 euros per year and BAU factor of 9%. One off cost after BAU factor of 9%	
4	N/A		Non-labelling information for third parties	Other	Group 2 banks					67.475	1	4.500	4.500	303.638.925	100%					
<b>Total administrative costs (€)</b>														<b>445.995.588</b>						
<i>Administrative costs by origin (€)</i>																				445.995.588
Counterparty credit risk						Tariff (€ per hour)		Time (hour)		Price (per action or equip)	Freq (per year)	Nbr of entities	Total nbr of actions	Total cost	Regulatory origin (%)				Comments & Assumptions	
No.	Ass. Art.	Orig. Art.	Type of obligation	Description of required action(s)	Target group	i	e	i	e						Int	EU	Nat	Reg		
1	N/A		Non-labelling information for third parties	Other	Group 1 banks	64		10.055		643.500	1	50	50	32.175.000	100%				Median 6,5 FTE at 120000 euros per year and BAU factor of 18%. One off cost after BAU factor of 15%	
2	N/A		Non-labelling information for third parties	Other	Group 1 banks					2.550.000	1	50	50	127.500.000	100%					
3	N/A		Non-labelling information for third parties	Other	Group 2 banks	16		971		15.430	1	4.500	4.500	69.437.160	100%				Mean 0,6 FTE at 30000 euros per year and BAU factor of 16%. One off cost after BAU factor of 16%	
4	N/A		Non-labelling information for third parties	Other	Group 2 banks					115.698	1	4.500	4.500	520.639.845	100%					
<b>Total administrative costs (€)</b>														<b>749.752.005</b>						
<i>Administrative costs by origin (€)</i>																				749.752.005
Capital buffers						Tariff (€ per hour)		Time (hour)		Price (per action or equip)	Freq (per year)	Nbr of entities	Total nbr of actions	Total cost	Regulatory origin (%)				Comments & Assumptions	
No.	Ass. Art.	Orig. Art.	Type of obligation	Description of required action(s)	Target group	i	e	i	e						Int	EU	Nat	Reg		
1	N/A		Non-labelling information for third parties	Other	Group 1 banks	53		1.688		90.000	1	50	50	4.500.000	100%				Median 1 FTE at 100000 euros per year and BAU factor of 10%. One off cost after BAU factor of 0%	
2	N/A		Non-labelling information for third parties	Other	Group 1 banks					0	1	50	50	0	100%					
3	N/A		Non-labelling information for third parties	Other	Group 2 banks	65		1.796		117.422	1	4.500	4.500	528.400.717	100%				Mean 1 FTE at 120000 euros per year and BAU factor of 6%. One off cost after BAU factor of 6%	
4	N/A		Non-labelling information for third parties	Other	Group 2 banks					91.851	1	4.500	4.500	413.331.066	100%					
<b>Total administrative costs (€)</b>														<b>946.231.783</b>						
<i>Administrative costs by origin (€)</i>																				946.231.783

## ANNEX IX: QUANTITATIVE IMPACT OF THE CRD IV: QUEST MODEL

### Set up

QUEST III<sup>321</sup> is a standard closed economy dynamic stochastic general equilibrium (DSGE) model with a banking sector subject to regulatory policy. The model distinguishes three types of private actors in addition to a central bank and a government<sup>322</sup>. The private sector consists of consumers (saver households), entrepreneurs (firms) and a banking sector which intermediates savings and investment.



In order to ensure a positive share of loans in the balance sheet of entrepreneurs it is assumed that they have a higher rate of time preference than savers. It means that entrepreneurs prefer to use profits for their own consumption today than to save them for investment tomorrow. In this case the solvency of entrepreneurs requires that banks restrict lending by imposing a collateral constraint. This specification closely follows Kiyotaki and Moore (1997)<sup>323</sup>; the constraint is a reaction to information asymmetries between borrowers and lenders – only the borrowers have information about their willingness and ability to repay; thus lenders require collateral.

The behaviour of the different agents in QUEST III is described below.

#### *Savers:*

Savers maximise an intertemporal utility function with consumption, liquidity services from deposits and leisure as arguments. Savers can hold wealth either in the form of government bonds, bank deposits or bank equity and receive interest income from bonds and deposits and dividends as well as capital gains from bank equity. There is an exogenous equity premium on bank stocks. Savers also offer labour services to entrepreneurs and banks and receive wage income.

#### *Entrepreneurs:*

Entrepreneurs maximise an intertemporal utility function over entrepreneurial consumption (coming from profits), subject to an intertemporal budget constraint, a technological constraint, a capital accumulation constraint and a collateral constraint along the lines suggested by Kiyotaki and Moore (1997). They combine capital and labour to produce output using a constant-returns-to-scale (CRS) technology. The output market is monopolistically competitive. Entrepreneurs demand labour and make investment decisions. They partly finance investment by taking out loans.

#### *Banks*<sup>324</sup>:

<sup>321</sup> QUEST III is a New-Keynesian Dynamic Stochastic General Equilibrium model (DSGE) with microeconomic foundations derived from utility and profit optimisation. It includes imperfections in goods, labour and financial markets. More information about QUEST III, as well as developments in incorporating a financial sector in the model can be found here: [http://ec.europa.eu/economy\\_finance/research/macroeconomic\\_models\\_en.htm](http://ec.europa.eu/economy_finance/research/macroeconomic_models_en.htm)

<sup>322</sup> A Deposit Guarantee Scheme is part of the government setup.

<sup>323</sup> Kiyotaki, N. and J. Moore (1997), *Credit Cycles*, Journal of Political Economy 105, pp. 211-248

<sup>324</sup> Interbank market can be included with a separation of banks to savings and investment banks. Savings banks can be modelled to collect deposits from households, and to only lend to investment banks in the

Banks provide loans to entrepreneurs and receive deposits and bank capital from savers. They pay taxes, purchase government bonds and contribute to a deposit guarantee scheme (DGS), and receive liquidity from the central bank (cash in the form of credits to their reserve account at the central bank).

Banks maximise their stock market value (present discounted value of future dividend stream) subject to a cash flow constraint and a capital and liquidity requirement constraints. Banks can increase capital either by issuing new shares or via retained earnings. Both strategies yield identical results. Banks use labour in order to provide intermediation services. Labour in banks is divided in overhead (fixed) labour and variable labour that is proportional to loans. The banks pay wages to employed labour, and a levy on non-deposit liabilities. Banks provide contributions to a DGS.

*Government policy (monetary policy, fiscal policy and DGS):*

The central bank sets the policy rate according to a standard Taylor rule. The government taxes labour, capital and consumption and uses the revenues to finance government purchases of goods and services as well as transfers. There is a debt rule which fixes the level of government debt to a target in the long run. Revenues from bank levy are collected by the government. DGS contributions are collected by the DGS and used to purchase government bonds; income generated is added to the banks' DGS contributions.

Equilibrium is defined as a set of optimality conditions for the agents and a set of prices that clear all markets.

## Calibration

All parameters describing behaviour of the non-financial sector are taken from Ratto et al. (2009)<sup>325</sup>. Our preferred balance sheet concept for the banking sector is a consolidated balance sheet, which provides information about the stock of loans to the non financial sector. This gives us the leverage position of the non financial sector, and yields an accurate estimate of the (loan) capital cost of the private sector. This is important for calculating the macroeconomic impact of the regulatory measure.<sup>326</sup>

The interest data are from the ECB and other EU27 central banks. The pre-crisis figures (2004-2008) suggest a loan interest rate of 5.2%, a deposit rate of 2.5% and a rate on government bonds of 4.2%. For the rate of return on bank equity we use a value of 14.3%.<sup>327</sup>

V. Escudero (2009)<sup>328</sup> reports that the employment share of financial intermediaries in total employment is about 3% in EU27 citing Eurostat. Another important characteristic of loan interest rate determination is a mark up over marginal costs charged by banks. Recent empirical estimates see Christopoulou et al. (2008)<sup>329</sup>, show a mark up of 58% in the euro area, which is at the upper end across sectors. Though it is economically plausible that mark up in financial intermediation is significant because of large overhead costs and fixed capital, mark up estimates as conducted in this study are likely to be overestimated, see Konings et al. (2011)<sup>330</sup> if there are fixed costs. Therefore we assume a mark up that is close to 30%. The share of labour in banking that is subject to cost optimization under new regulation is 75%.

## Pass-through of effects

In the model banks must observe a minimum capital requirement, which is a ratio of Tier I capital to risk-weighted assets<sup>331</sup>. Whenever the minimum capital requirements increase the banks face higher costs of capital

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interbank market. Investment bank in turn can be modelled to issue bank equity and to borrow from households in the form of deposits or from savings banks on the interbank market.

<sup>325</sup> Ratto, M., Roeger W. and Veld, J. in 't, *QUEST III: An estimated open-economy DSGE model of the euro area with fiscal and monetary policy*, Economic Modelling, 2009, vol. 26, No. 1, pp 222-233

<sup>326</sup> Because the model is based on the unconsolidated balance sheet of the banking sector for EU 27 it uses the assumption that the ratio of loans to the non financial sector and interbank loans is slightly higher in EU 27 compared to the EA. Based on the consolidated EA balance sheet published by the ECB, loans to the non financial sector are about 140% of GDP, hence, QUEST III uses a value of 150% of GDP for EU 27.

<sup>327</sup> This value is taken from BCBS MAG report and refers to the RoE for the year 2006 of a hypothetical European bank for eight European countries (AT, BE, FI, FR, DE, IT, NL), excluding the UK banks, which typically have shown higher RoE.

<sup>328</sup> Escudero V., *Effects of the Crisis on the Financial Sector: Trends and Policy Issues*, International Institute for Labour Studies, Discussion Paper 197, 2009

<sup>329</sup> Christopoulou R, P. Vermeulen, *Markups in the Euro Area and the US over the Period 1981-2004, a Comparison of 50 Sectors*, ECB Working Paper, 856, 2008

<sup>330</sup> Konings Josef, W. Roeger, L. Zhao, *Price-cost Margins and Shares of Fixed Factors*, CEPR Discussion Paper, 8290, 2011

<sup>331</sup> The model distinguishes between two types of assets: liquid, which are given a risk weight of 5% and illiquid which are given a risk weight of 55%. The risk weights are the average risk weights for credit risk as

since the return on bank equity is higher than the deposit rate.<sup>332</sup> In the model they can respond by obtaining more capital through retained earnings, thus decreasing profits, or through issuing new capital, these two options produce equivalent results.

QUEST III models a complete pass-through of higher capital costs to the banks' clients via an increase in the intermediation spread. The loan interest rate in the model is determined as a mark up over banks' marginal costs. Thus the acquisition of new bank capital translates into an increase in borrowing costs for firms and a decrease in aggregate lending, in the value of firm collateral, in aggregate investment and in GDP.

At the same time banks are required to observe a liquidity requirement. They face an opportunity cost of holding more liquid assets than if they did not have to observe a liquidity requirement. The opportunity costs equal the difference between the higher rate of return on loans (illiquid assets) and the lower rate of return on government bonds (liquid assets) that the banks earns on the share of its assets that are required to be of the liquid type.

The banks respond to the liquidity requirement in the following way. They increase the demand for deposits to meet it and have to pay a higher deposit interest rate (which is however still lower than the rate earned on liquid assets). This increases marginal bank funding costs, which are shifted onto loan interest rate. This reduces the demand for loans in the economy.<sup>333</sup>

Compliance with the minimum capital and liquidity requirements is instantaneous in each period of the model. Thus the actual and the required bank capital and liquidity ratios are the same in every period.

The model pass-through is characterized by some **mitigating factors**.

Industry representatives have often claimed that the increase in the capital requirement increases funding costs for banks because they have to use more equity to fund loans. This statement has been contested in the finance literature; see Admati et al. (2011)<sup>334</sup> and Miles (2011)<sup>335</sup>. Against this statement, reference is usually made to the **Modigliani Miller theorem** (1958)<sup>336</sup> which stipulates that the structure of corporate financing does not matter (if one disregards tax and subsidy considerations which may affect debt and equity differently) because a change in the composition of corporate liabilities only distributes the risk which must be borne by equity owners. In the baseline parameter setting of the QUEST model (no MM applicability), the equity premium is exogenous<sup>337</sup>, because the stochastic environment faced by households, firms and banks is not fully specified. However in a simpler two-period version of QUEST which is analytically more tractable it can be shown that the MM theorem holds.

Therefore two additional specifications of the applicability of the MM theorem for bank equity have been included. The rate of return on bank equity is equal to the risk free rate plus an equity premium which depends on the covariance of the loan losses (per unit of equity) with the marginal utility of investors in bank capital. Under the assumption that the change in capital requirements does not change the riskiness of bank operations, an increase in capital requirements leads to a proportional decline in the equity premium, because the same risk is distributed over a larger equity base. In our first additional specification, the MM theorem holds in full (100%). If the only risk for the shareholder comes from loan default risk, an increase in capital requirements would be completely offset by a fall in the equity premium and funding costs should not change.

Whether a fall in the risk premium could offset increased capital requirement by 100% is however questionable. Apart from tax considerations (see Modigliani-Miller (1963)<sup>338</sup>), there may be other factors which require a premium for households to invest in bank equity. In accordance with theory, the empirical evidence in Miles et

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reported in 2008 by the Banking Supervision Committee (BSC) of the European System of Central Banks

<sup>332</sup> The deposit rate is the rate of return on bank debt. Together with return on bank equity they represent cost of funding for the banks.

<sup>333</sup> Notice also, the demand for liquid assets and deposits incorporates all the restrictions imposed on bank behaviour implied by the capital and liquidity requirement constraints. An important implication of the capital requirement is that the bank is forced to increase the demand for deposits in such a way as to comply with it.

<sup>334</sup> Admati, A., P. DeMarzo, M. Hellwig, P. Pfleiderer (2010), *Fallacies, Irrelevant Facts, and Myths in the Discussion of Capital Regulation: Why Bank Equity is Not Expensive*, Stanford GSB Research Paper, No. 2065

<sup>335</sup> Miles, D., Yang, J., and G. Marcheggiano (2011), *Optimal bank capital*, Bank of England Discussion Paper No. 31

<sup>336</sup> Modigliani, F.; M. Miller (1958), *The Cost of Capital, Corporation Finance and the Theory of Investment*, American Economic Review 48 (3): 261–297

<sup>337</sup> This assumption was also retained because it was the working hypothesis of the BCBS MAG report

<sup>338</sup> Modigliani, F.; M. Miller (1963), *Corporate Income Taxes and the Cost of Capital: A Correction*, American Economic Review 53 (3): 433–443

al. (2011) and Kashyap et al. (2010)<sup>339</sup> does not show a full offset. Therefore in our second additional specification the MM offset holds at 50%, in line with these empirical results.

Under the new bank regulatory regime the minimum capital requirements rise. In the absence of any MM offset of higher capital requirements the return on bank equity decreases initially since lower investment demand puts a downward pressure on the risk free rate. Over the transition period equilibrium investment is restored and the risk free rate returns to its steady state thus the return on bank equity reverts under but very close to its baseline. Thus when a new steady state is reached in the long run, in the case when the MM theorem is assumed not to hold, the return on bank equity is practically unchanged as the capital requirements increase. In this result QUEST differs from industry studies which find substantial post regulation decrease in the return on bank equity under no MM offset. The return on bank equity in QUEST falls below its baseline only when the MM theorem is assumed to hold (either in full or partially).

The information asymmetry in financial intermediation in QUEST III is evident in borrower's collateral constraint. When bank regulation brings about higher capital requirements and banks increase the spread between loan and deposit rates, the present discounted value of firms' future profits are reduced since firms now have to pay more in order to borrow. Higher firm capital costs result in a decrease in the market value of the stock of firm capital and therefore the market value of firm collateral. Banks are prompted by changes in minimum capital requirements to ration the supply of loans based on the firms' abilities to pledge collateral. Higher capital and liquidity requirements raise firm borrowing costs. In response entrepreneurs start reducing leverage and gradually shift to using more own resources in financing their investment decisions. Lower firm leverage reduces credit rationing by the bank and thus mitigates financial market imperfections.

Finally as the regulatory requirements increase, banks respond by optimizing labour employed in providing intermediation services. The model treats three quarters of the labour employed in banking services as a variable factor of production. Whenever banks face higher regulatory requirements they increase their interest rate on loans and decrease their volume of lending as loan demand by borrowers falls. Banks are allowed to optimize the quantity of labour they use for up to three quarters of the labour employed.<sup>340</sup>

### **The evolution of the model variables as a result of changes in bank regulation**

In QUEST III, agents are modelled to be forward looking. Firms face investment adjustment costs and a collateral constraint. In anticipation of the increase in the cost of loans, they adjust today's behaviour responding to tomorrow's increase in regulatory requirements and banks' intermediation margin. In addition, current investment decisions are discounted with a higher future discount rate. Thus the model reports a macroeconomic impact even prior to the implementation of the regulatory changes.

When banks are required to hold more capital their marginal costs increase since equity funding is more expensive than funding by deposits (the increase in the risk premium of bank equity can be partly or fully offset by the applicability of the MM theorem). Banks respond by optimizing assets and liabilities on their balance sheets so that all the increase in the marginal costs is transferred to customers. They **increase own capital**<sup>341</sup>, supply **fewer loans** and attract **more deposits**, so that the **intermediation margin between the loan rate and the deposit rate increases**<sup>342</sup>.

The applicability of the MM theorem determines the magnitude of the response of bank funding costs. If the MM theorem holds, the **return on bank equity** decreases. Still bank funding is more expensive than in the baseline as new regulation requires a higher share of bank equity funding. If the MM theorem does not hold the return on bank equity stays below but very close to its baseline value and funding costs increase even more. As the intermediation spread increases borrowing becomes relatively more expensive and firms hold less capital thus lowering the value of the collateral that they can pledge against borrowing. As a result firms invest less and start relying more on internal sources of funding for their investment decisions. **Aggregate investment** in the economy decreases, reaching its lowest point below the baseline along the new regulatory implementation schedule before stabilizing to a less negative value below the no-change-in-regulation trend later on. Since firms become more self-reliant **firm cost of capital** increases only during an initial shock in the very short run then

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<sup>339</sup> Kashyap A., S. G. Hanson, J. C. Stein (2010), *An Analysis of the Impact of "Substantially Heightened" Capital Requirements on Large Financial Institutions*, mimeo

<sup>340</sup> QUEST III assumes that three quarters of the bank employees are not entrusted with managerial and cross-product servicing tasks but are directly engaged in marketing, originating and servicing loans thus are subject to layoffs if bank lending decreases.

<sup>341</sup> Since banks hold more capital today the NPV of their infinite dividend stream increases substantially.

<sup>342</sup> The increase in the bank intermediation margin is not only a result of a higher loan rate but also a higher rate on deposits. Had the deposit rate remained constant the rise in the loan rate for the same increase in the intermediation margin would have been lower and the negative impact of new regulation would have been lower. Banks offer higher rates on deposits because they try to expand their balance sheets in meeting the liquidity requirement.

decreases or increases only moderately along the implementation schedule. Firm cost of capital changes not only in response to changes in bank lending spreads but also in response to changes in the shadow price of bank collateral.

Lower investment is translated into **lower GDP**, since lower capital accumulation means less output. In the long run it also translates into **lower consumption** and less time spent at work (**lower employment**). Employment falls because less capital translates into lower labour productivity and lower wages. Even though consumption represents the largest part of GDP in national accounting the impact on investment through increased costs of borrowing is higher and drives down the GDP.

Consumption rises above the baseline before and during the model periods, in which implementation takes place, due to the increase in the opportunity costs of saving. As banks prepare for the implementation of the new regulatory regime by increasing the intermediation margin consumers are better off using their current wealth in today's consumption rather than saving it in the form of bank deposits or bank equity, which are then to be transformed into future consumption<sup>343</sup>.

For the purpose of calibrating **the change in the minimum capital requirements** the QUEST III model uses Tier 1 capital.<sup>344</sup> The following three tables show the impact on various variables when Tier 1 ratio is assumed to increase by 2.5 percentage points, depending on the assumption on MM offset (0%, 50% and 100%).

**Cumulative impact of regulatory reforms: new quantitative and qualitative capital requirement, capital conservation buffer (0% MM offset)**

	2012	2013	2014	2015	2016	2017	2018	2019	average 2020-2030	2050
<b>Impact on macro variables (deviation from baseline in %)</b>										
GDP	-0.10	-0.11	-0.15	-0.20	-0.24	-0.28	-0.32	-0.36	-0.52	-0.85
consumption	0.24	0.44	0.45	0.40	0.36	0.31	0.26	0.20	-0.10	-0.71
investment	-1.52	-2.34	-2.56	-2.70	-2.81	-2.87	-2.89	-2.89	-2.71	-2.35
labour hours	-0.14	-0.11	-0.11	-0.13	-0.14	-0.14	-0.14	-0.14	-0.13	-0.10
<b>Impact on bank variables (deviation from baseline in %)</b>										
volume of loans	-0.27	-0.68	-0.84	-0.84	-0.94	-1.04	-1.13	-1.21	-1.51	-2.12
volume of deposits	2.97	2.71	2.63	2.69	2.46	2.22	1.97	1.72	1.48	1.00
loan rate	-0.19	-0.14	0.31	0.19	0.18	0.20	0.22	0.23	0.25	0.27
deposit rate	-0.15	-0.11	0.23	0.13	0.08	0.06	0.03	0.00	0.01	0.03
return on bank equity	-0.25	-0.20	0.13	0.04	0.00	-0.02	-0.04	-0.06	-0.04	-0.01
firm cost of capital	0.47	0.12	0.00	0.01	0.02	0.03	0.04	0.06	0.07	0.10

Note: impact on rates (loan, deposit, return on bank equity, firm cost of capital) expressed as deviation in percentage points

**Cumulative impact of regulatory reforms: new quantitative and qualitative capital requirement, capital conservation buffer (50% MM offset)**

	2012	2013	2014	2015	2016	2017	2018	2019	average 2020-2030	2050
<b>Impact on macro variables (deviation from baseline in %)</b>										
GDP	-0.05	-0.06	-0.08	-0.11	-0.14	-0.16	-0.18	-0.20	-0.26	-0.37
consumption	0.13	0.23	0.24	0.21	0.19	0.16	0.13	0.09	-0.08	-0.32
investment	-0.82	-1.27	-1.39	-1.48	-1.54	-1.56	-1.56	-1.52	-1.24	-0.99
labour hours	-0.08	-0.06	-0.06	-0.08	-0.08	-0.08	-0.08	-0.08	-0.06	-0.04
<b>Impact on bank variables (deviation from baseline in %)</b>										
volume of loans	-0.15	-0.37	-0.46	-0.46	-0.51	-0.57	-0.62	-0.66	-0.74	-0.92
volume of deposits	1.68	1.54	1.50	1.54	1.32	1.09	0.86	0.62	0.48	0.30
loan rate	-0.10	-0.07	0.18	0.11	0.10	0.12	0.13	0.14	0.13	0.11
deposit rate	-0.08	-0.05	0.14	0.09	0.05	0.02	0.00	-0.03	-0.01	0.01
return on bank equity	-0.20	-0.26	-0.17	-0.32	-0.44	-0.56	-0.67	-0.79	-1.34	-1.93
firm cost of capital	0.25	0.06	0.00	0.00	0.01	0.02	0.03	0.04	0.04	0.04

Note: impact on rates (loan, deposit, return on bank equity, firm cost of capital) expressed as deviation in percentage points

<sup>343</sup> The return on bank equity and the deposit rate decrease prior to the implementation of the new capital requirement because of higher costs of bank capital and the increase in the intermediation spread respectively. As a consequence consumers start to save less and consume more of their wealth. Due to habit formation consumption still remains above the no-change-in-regulation trend even after the rates on deposits and equity start rising again.

<sup>344</sup> Data used refer to EU 27 and end of 2009

**Cumulative impact of regulatory reforms: new quantitative and qualitative capital requirement, capital conservation buffer (100% MM offset)**

	2012	2013	2014	2015	2016	2017	2018	2019	average 2020-2030	2050
<b>Impact on macro variables (deviation from baseline in %)</b>										
GDP	-0.01	-0.01	-0.01	-0.02	-0.02	-0.03	-0.03	-0.03	0.01	0.13
consumption	0.01	0.02	0.02	0.02	0.01	0.01	-0.01	-0.02	-0.06	0.09
investment	-0.08	-0.12	-0.15	-0.17	-0.19	-0.18	-0.14	-0.08	0.31	0.44
labour hours	-0.01	-0.01	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	0.01	0.02
<b>Impact on bank variables (deviation from baseline in %)</b>										
volume of loans	-0.02	-0.04	-0.05	-0.05	-0.06	-0.08	-0.08	-0.07	0.07	0.34
volume of deposits	0.31	0.30	0.30	0.31	0.11	-0.10	-0.32	-0.55	-0.58	-0.44
loan rate	0.00	0.00	0.03	0.02	0.03	0.03	0.04	0.04	0.00	-0.05
deposit rate	0.00	0.01	0.04	0.04	0.01	-0.01	-0.04	-0.07	-0.04	-0.01
return on bank equity	-0.13	-0.31	-0.48	-0.67	-0.88	-1.09	-1.30	-1.51	-2.64	-3.85
firm cost of capital	0.02	0.00	0.00	-0.01	0.00	0.01	0.01	0.02	0.01	-0.02

Note: impact on rates (loan, deposit, return on bank equity, firm cost of capital) expressed as deviation in percentage points



## ANNEX X: OVERVIEW OF QUANTITATIVE MODELS

Several impact studies based on various modelling techniques have been carried out by industry associations and the public authorities. Most of these studies (especially ones commissioned or carried out by industry associations) concentrated on finding the impact on bank capital and loan volume and pricing. A few studies have translated the impact on banking further to the general macro-economy.

Most of the studies focus on the negative impact of new banking regulation, in terms of the increase in the costs of new bank capital, rise in loan pricing and credit rationing, fall in investment and GDP. Only a few studies have attempted to find precise estimates of the benefits of stronger bank capital in terms of a decrease in the probability of a financial crisis. The BCBS LEI report deserves to be mentioned. A summary of some of these studies can be found in below table.

In general, the results of the studies performed by the banking industry are more pessimistic than the ones of public institutions as regards the decline in the volume of lending and the temporary and permanent decline in GDP. This is mainly due to the data quality, different economic assumptions, regulatory scenarios and modelling techniques used. For instance, impact of the regulatory changes on the industry in the BCBS MAG study is based on results of the quantitative impact study (reflecting actual impact on the balance sheets of participating institutions), whereas industry studies for information that is not publicly available have to rely on estimates.

Also, the modelling techniques used by the industry such as simulations, accounting projections or simple macro-models are rather crude in deriving accurate macroeconomic results. Initially, the industry assumed a full implementation of all proposed changes under Basel III, but the final agreement was less binding. Moreover, their economic assumptions appear to swell the negative economic impact because:

- banks are supposed to maintain a certain level of return on equity (RoE) (sometimes very high at pre-crisis level), without due recognition to the fact that sounder balance-sheets entail lower risk and therefore a reduction in RoE and the cost of capital;
- the increase in the spreads between lending and deposit rates is fully translated only into higher lending rates not into a combination of higher lending rates and lower deposit rates;
- the increased capital costs are not internalised by banks via cost efficiency measures or a reallocation of the assets;
- non-bank credit channels in the economy are largely overlooked;
- the transformation of the credit shock into an output impact is based on past elasticities which may differ in a radically changed economic environment

In general, the direct translation of credit shocks into a long-term impact on output and other macro-economic variables is not optimal. The growth in nominal terms of bank credit is not the main factor driving output in an economy, but rather the efficient intermediation of real savings towards productive activities. Changes in the volume of credit are partly accommodated in time via changes in relative prices. It optimises the use of real savings and factors of production in the economy and reduces the impact on output

## Overview of selected public and industry studies on the impact of regulatory reforms

	Author	Published	Policy changes	Methodology	Results
MAG	BCBS MAG Group	Final: December 2010; Interim: August 2010	TCE minimum ratio from 5.7% (estimated by BIS QIS) to 7%; a 25% increase in holdings of liquid assets	A macroeconomic impact via lending margin increases and reduced loan volumes. Macro impact through a set of structural and reduced-form models	Capital requirement impact - GDP falls by 0.22% relative to baseline (average for all countries and all models)
LEI costs	BCBS LEI Group	August 2010	Increase in TCE minimum ratio by 4%, introduction of NSFR	A macroeconomic impact via lending margin increases and reduced loan volumes. Macro impact through a set of structural and reduced-form models	GDP falls by 0.61% relative to baseline (average for all countries and all models)
LEI benefits	BCBS LEI Group	August 2010	Increase in TCE minimum ratio from 7% to 9%, introduction of NSFR	Average frequency of a financial crisis per year: 4.5%; median cumulative loss of crisis: 63% of pre-crisis GDP; reduced-form and structural models estimate the impact on higher capital and liquidity on the probability of a crisis	Probability of a systemic banking crisis falls from 3.3% to 1.6%; benefits rise from 0.76% to 1.82% of GDP per year
FSA OP38	FSA NIESR (UK)	July 2009	Increase of capital and liquidity requirements by 3 percentage points	NiGEM model, higher capital and liquidity increase the price for bank credit	Net present benefit is 7% of real GDP in 2009
IMF Staff Position Note 10/16	IMF	November 2010	From current Tier I ratio to Basel III ratio using new rules on capital deductions, market risk, risk weights	A sample of 62 banks, balance sheet analysis	If applied immediately the new capital rules will lower the core Tier I ratio of an average bank to 5.8%
Cumulative impact report IIF	IIF	Interim: June 2010; Update: October 2010	Tier I ratio increases to 6%, overall ratio to 8%, redefinition of capital, LCR, NSFR, a bank levy	Increased costs of capital via higher lending rates and lower loan volumes impacts credit growth which in turn impacts GDP growth	GDP falls by 4.7% relative to baseline (euro area)
Basel III and European Banking	McKinsey	November 2010	Core Tier I requirement is 7%, LCR and NSFR introduction	Capital calculated according to the proposed CRD changes	Normalized industry return on equity less than 15%; bank implementation costs 45-70 million euro
JPMorgan Equity Research	JP Morgan	February 2010	Separation of activities, increased capital requirement, LCR, NSFR, leverage ratio, dynamic provisioning, bank-specific taxes, resolution and recovery	A sample of 16 large banks, balance sheet analysis	Average ROE falls from 13.3% to 5.4%