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**REPORT FROM THE COMMISSION TO THE COUNCIL AND THE EUROPEAN
PARLIAMENT**

on effects of Directives 2006/48/EC and 2006/49/EC on the economic cycle

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TABLE OF CONTENTS

1.	Introduction	3
2.	Sources of pro-cyclicality and their implications for analysis	4
3.	Cyclicality of minimum regulatory capital	5
4.	Impact of capital requirements on bank lending activity	7
5.	Impact of credit availability on economic cycle	9
6.	Rationale underlying the calculation of capital requirements.....	11
7.	Measures to address pro-cyclicality	12
7.1.	Capital buffers and provisions	13
7.2.	Smoothing of the MRC	14
7.3.	Leverage.....	14
7.4.	Measures already adopted by the Commission.....	15
7.5.	Conclusions	16
8.	References	17

1. INTRODUCTION

1. The minimum capital requirements for banks under the EU Capital Requirements Directive (CRD),¹ based on the Basel II framework, are risk sensitive: the higher the risk, the more capital a bank needs to hold to meet that risk and cover potential losses. By consequence, as credit and market risks increase in a downturn, minimum capital requirements for banks will also increase to meet those higher risks. Banks may need to raise additional capital to meet these higher requirements at a time when their capital resources are being eroded by losses and opportunities for raising capital are scarce and costly. This may potentially constrain banks' lending capacity into the economy.
2. The possibility that the CRD may contribute to the pro-cyclicality observed in the financial system under the predecessor Basel I framework led to the inclusion in the CRD of Article 156 which requires the European Commission (Commission) to periodically monitor whether the CRD has '*significant effects on the economic cycle*' and, in the light of the examination, submit a biennial report to the European Parliament and to the Council together with any appropriate remedial measures.
3. This report has been drawn up for that purpose. It was prepared in close cooperation with the ECB and the Committee of European Banking Supervisors (CEBS) which in 2006 set up a joint Task Force on the Impact of the new Capital Framework (TFICF).² In addition to stakeholder consultations that were conducted by the ECB in the process of preparing its analytical contribution, the Commission conducted two on-line questionnaires to facilitate the input from borrowing³ and lending⁴ parties. It has to be emphasised that the analysis provided is indicative given the fact that the rules of CRD II⁵ were only adopted in 2009.

¹ Comprising Directive 2006/48/EC of the European Parliament and of the Council relating to the taking up and pursuit of the business of credit institutions and Directive 2006/49/EC of the European Parliament and of the Council on the capital adequacy of investment firms and credit institutions

² The mandate of the TFICF is to monitor the level and volatility of banks' minimum capital requirements as defined by the CRD and analyze their impact on bank lending and the economic cycle.

³ A questionnaire to the EU businesses ran from August 12 until September 28, 2009. Via the European Business Test Panel, the business community was consulted on their perceptions regarding the developments in availability and conditions of bank credit since October 2008. 429 members of the EBTP from 28 EU/EEA countries filled in the questionnaire. As regards the company size of the respondents, 59% of them were small enterprises, 20% medium enterprises and 21% large enterprises.

⁴ A questionnaire to the EU banking industry ran from May 21 until August 31, 2009. Nineteen responses were received from IT, SI, BE, AT, DE, UK and NL. Respondents included banks whose majority ownership is private (publicly traded), national cooperative bank networks and publicly owned banks. Some replies were submitted by national associations representing a consolidated position of their members, effectively increasing the number of individual credit institutions covered by the questionnaire.

⁵ 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

2. SOURCES OF PRO-CYCLICALITY AND THEIR IMPLICATIONS FOR ANALYSIS

4. Bank capital regulation may potentially amplify the cyclicity endemic to bank lending behaviour. Due to their risk-sensitive nature, capital requirements under the Basel II framework, transposed in the EU by the CRD, are expected to rise more in recessions and grow less during expansions. Since it may be expensive for banks to raise additional capital during economic downturns, this may encourage them to cut back on lending instead. By contrast, as capital requirements become more relaxed during economic upturns, banks may have more room for manoeuvre to extend more and / or riskier credit as compared to historical average over the business cycle.
5. However, bank lending is pro-cyclical in nature and it cannot be assumed that cyclical capital requirements per se have an amplifying effect. Indeed, the pro-cyclical nature of bank lending has many, often interconnected sources⁶ such as limitations in the measurement of risk⁷ and information asymmetries⁸ between borrowers and lenders. Furthermore, pro-cyclicality in lending may also stem from inappropriate responses⁹ of financial system participants to changes in the economic conditions.

Fluctuations in the quality of banks' balance sheets are also influenced by accounting rules. In essence, the realised or unrealised gains due to asset price increases as reflected in the fair value of assets, or improved credit quality as reflected in lower provisioning requirements for banks, could improve banks' profit and loss accounts and thus their own funds, thereby providing the basis for a further expansion of lending.¹⁰

⁶ For a thorough description of the main sources of pro-cyclicality and the role of capital adequacy rules therein see BIS (2008) and Masschelein (2007)

⁷ In particular, 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. Measures of risk may be quite low as vulnerabilities and risk build up 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 and cognitive dissonance. For a comprehensive review, see Borio et al. (2001)

⁸ 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.

⁹ In some cases, responses are explained by short-term bias of remuneration structures or herding behaviour (tendency of market participants to conform their behaviour with that of their peers). Remuneration policies in financial institutions may have an enhancing pro-cyclical effect where they entail (possibly 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. For a comprehensive review, see Borio et al. (2001)

¹⁰ Conversely, in an economic downturn, market developments may lead to a decrease in the fair value of assets as well as to increased provisioning requirements. These downward adjustments in asset valuations and increasing loan losses could have an effect on banks to tighten lending standards and cut back lending.

6. As pro-cyclicality is driven by various factors, it is difficult to identify the exact impact of minimum capital requirements. In particular, it remains a challenge to distinguish the effects of loan supply from those of loan demand, especially as shifts in demand and supply both have an impact on bank lending rates and credit volumes. To correctly identify those effects, it would be necessary to have a detailed and sufficiently large data set, which – because the CRD has only recently been implemented – is yet not available. This first assessment set out in this report is therefore partly based on qualitative information collected from banks and borrowers.
7. In order for the CRD to have pro-cyclical effects, certain conditions must be fulfilled. To determine the extent to which they have held empirically, this report follows the structure suggested by the ECB by seeking answers to the following questions:
 - Does the increased risk sensitivity of the CRD framework lead to a stronger cyclicality of minimum required capital (MRC) and, if so, to what extent?
 - Do cyclical capital requirements have an impact on the level of capital that banks hold and impact bank loan supply?
 - Does the cyclicality of bank loan supply have an amplifying effect on the economic cycle?

3. CYCLICALITY OF MINIMUM REGULATORY CAPITAL

8. With the adoption of the CRD, capital requirements were made more risk-sensitive compared to Basel I by allowing banks to adopt approaches to determining regulatory capital that are appropriate to their situation and the sophistication of their risk management. The Internal Ratings Based (IRB) Approach, for instance, enabled banks to determine capital requirements for credit risk by using their own ‘risk inputs’ such as Probability of Default (PD), Loss Given Default (LGD) and Exposure at Default (EAD).¹¹
9. Due to the expected enhancement of risk-sensitivity of regulatory capital requirements under the CRD, it was widely expected that they would become more variable (or cyclical) over time. Given that requirements for credit risk represent more than 80% of overall MRC under Pillar 1, it is generally considered that the main driver of potential cyclicality of MRC is the integration of the credit risk parameters under the IRB approaches into calculation of risk-weighted assets (RWA), although risk weights under all three approaches – Standardised Approach

¹¹ As regards the relative impact of individual risk parameters of the IRB approach, PD is considered to be the main contributor to the cyclicality of the framework, while, to a lesser extent, the effects of LGD and EAD may also be relevant. The degree to which capital requirements oscillate may depend, among other factors, on whether a Point-in-Time (PIT) or a Through-the-Cycle (TTC) system is implemented by banks in their internal rating processes. Typically, TTC ratings do not change rapidly in response to fluctuations in the macroeconomic conditions, and thus are less influenced by the economic cycle momentum. Use of TTC rating systems is suggested by the Basel II and the CRD frameworks as a way to smooth the potential volatility of the capital requirements. However, due to banks' preferences to use recent default data and early warning systems as well as difficulties in obtaining a sufficient set of data, they primarily use PIT approaches, especially for exposures to SMEs and retail clients.

(SA),¹² Foundation IRB¹³ and Advanced IRB – are expected to be responsive to macro-economic conditions. In case of the IRB approaches, as PD of an exposure decreases in an economic upswing and increases during a downturn, capital requirements are expected to fluctuate accordingly.¹⁴

10. A comprehensive analysis of cyclicity of MRC would require a full business cycle. Currently, the available data include only three data points,¹⁵ which is not a sufficient basis for definitive answers.
11. According to the analysis of the TFICF, in December 2008, MRC¹⁶ under the CRD was lower on average by 10.6% for Group 1¹⁷ banks and by 6.1% for Group 2 banks relative to Basel I.¹⁸ At the same time, MRC rose by 8.3% for Group 1 banks and by 0.1% for Group 2 banks between June and December of 2008. These changes can be attributed to an increase in RWA of 8.2% for Group 1 banks and a decrease of RWA by 1.5% for Group 2 banks. However, total exposure amounts increased at a faster rate than RWA, i.e., at 10.7% and 2.8%, respectively, indicating that the increase in MRC between June and December of 2008 was not due to an increase in the riskiness of exposures.¹⁹
12. In June 2009, MRC for Group 1 and Group 2 banks continued to be lower under the CRD in comparison to Basel I (by 7.7% and 5.5%, respectively). Between December 2008 and June 2009, RWA of Group 1 banks declined by 2.1% despite an increase in total exposures of 0.3%. Group 1 MRC, nevertheless, increased by 3.7%, primarily driven by rising deductions for related entities and securitisations as well as shortfalls of provisions for expected losses. Therefore, further monitoring will have to assess

¹² Under the SA, requirements are expected to fluctuate less as banks use risk weights based on external ratings (which tend to be determined on the TTC basis) issued by external credit assessment institutions

¹³ The FIRB risk-weighted assets for corporate portfolios are expected to be less responsive to business cycle than those under the AIRB, as under the latter banks use their own estimates of LGD and EAD. Internally estimated LGD and EAD are seen as more responsive to business cycles than the supervisory estimates used under the FIRB

¹⁴ In addition to credit risk parameters, there is likely to be an impact of the use of products of credit risk transfer, such as securitisations, on the cyclicity of capital requirements. In favourable circumstances, securitisation markets support the transfer of credit risk from individual institutions, thus having a relieving impact on banks' capital positions. Recent evidence revealed, however, that this risk transfer function might not necessarily be used effectively in a stressed market situation, which, in turn, may amplify the adverse effects on banks' capital positions.

¹⁵ June 2008, December 2008 and June 2009 for about 60-80 IRB banks from fourteen EU countries

¹⁶ Without taking into account the transitional floors

¹⁷ A bank is considered a Group 1 bank if its Tier 1 capital is above €3 billion and it is well diversified and internationally active

¹⁸ The impact of the CRD on capital requirements from the IRB approaches to credit risk may not yet fully be reflected in data disclosed by banks to the extent that banks are applying the partial use of the Standardised Approach. In December 2008, the share of banks' partial use exposures was significant for both Group 1 (31%) and Group 2 (40%) banks

¹⁹ Indeed, MRC per exposure - a measure of riskiness - was either unchanged (for Group 1 banks) or slightly lower (for Group 2) in December versus June 2008. While Group 1 banks' portfolio-level PDs increased on average, non-defaulted PDs were virtually unchanged indicating that the rise in average PDs was due to a higher number of defaults. To the extent that the rise in PDs reflects an increase in the share of defaulted exposures, the impact of rising average PD on RWA (and on MRC) is less straightforward since the risk weight on a defaulted exposure is zero (with some exceptions under AIRB). The risk is then accounted for by the expected loss, for which risk provisions should be made (in case of their shortfall, a deduction from capital is made). Furthermore, LGDs were lower for a number of exposures in December versus June 2008.

whether components of the MRC other than RWA contribute to its volatility over a longer term.²⁰

13. There are a number of factors that may have contributed to this somewhat surprising dynamics of RWA vis-à-vis total exposures, including government programs to support banks and shifts in bank portfolio composition towards less risky exposures. Indeed, observed changes in portfolio composition, which indicate a shift from portfolios with high PDs (corporate portfolio) to portfolios with lower PDs (sovereign portfolio), partially explain why the increase in RWA discussed above is smaller than increases in exposure amounts (see Chart 1 in the accompanying Staff Working Document). In addition, the outcome may be driven by the time lag inherent in PD revision process.²¹
14. Furthermore, regression analyses of the impact of the business cycle on various bank portfolio segments showed that the coefficient of the business cycle²² is positive for the corporate and retail exposure classes and negative for sovereign exposures²³, which seems to be in line with the finding mentioned above that banks have readjusted their portfolio composition towards exposures that were presumed to be less capital intensive.
15. The multi-country analysis of the supervisory data as of December 2008 concluded that macroeconomic conditions had an impact on the risk parameters, and on PDs in particular.²⁴ However, until the end of 2008 macroeconomic conditions did not significantly affect the MRC at the level of individual institutions. This somewhat counter-intuitive finding is largely due to the portfolio readjustment effects discussed above.

4. IMPACT OF CAPITAL REQUIREMENTS ON BANK LENDING ACTIVITY

16. In order for regulatory capital requirements to have an effect on bank lending, they must be binding on the level of capital that banks hold. Regulatory requirements, however, may not be the only relevant factor for banks in deciding how much capital to hold. Economic capital models, expectations of other market participants and, in

²⁰ MRC effectively summarises the numerator and the denominator of the regulatory capital ratio. It measures the capital required to cover (i) 8% of RWA; (ii) differences between total eligible provisions and the total expected loss amount; and (iii) other deductions.

²¹ PD are estimated using the P&L data, which are affected by the business cycle with some delay and are released with a further time lag. For example, if revenues of a firm start decreasing at the beginning of a year, they are reflected in its year-end financial statements that are published only some months into the following year and might be incorporated in the rating systems some additional months later.

²² Represented by lagged output gap and measured as a difference between actual and potential GDP

²³ Only for the corporate portfolio the coefficient is statistically significant (at 1%)

²⁴ Regression analyses on the relationship between the change in individual risk input parameters and the business cycle, conducted by the ECB, found that PDs of corporate and retail portfolios tend to increase more strongly in countries with low business activity, measured by the output gap lagged by one period. Similar regressions with respect to LGDs produced coefficients for all portfolios that are negative but statistically insignificant. This may indicate that the LGD values recorded in banks' internal models are somewhat stickier than PDs and thus may react less immediately to changes in the macroeconomic environment. Therefore, a longer sample period might be needed to provide firm evidence of the expected strong negative relationship between economic activity and LGDs. An additional explanation for failing to find any link between LGDs and the business cycle may be given by regulatory requirements that stipulate the use of stress LGDs.

particular, requirements of credit rating agencies (CRAs), may force banks to increase their capital levels even when they comply with their regulatory requirements.

17. Results of the questionnaires conducted by the ECB show that CRAs play a predominant role in the determination of the desired capital level, and that this factor is possibly even more relevant than the regulatory capital requirements for large, internationally active banks. This suggests that the changes in the level of desired capital and the related effects on banks' lending may primarily be influenced by the objective of individual institutions to receive specific ratings from CRAs. Similarly, for large banks, economic capital models could potentially be more important factors in capital allocation than regulatory requirements.²⁵ The recent financial crisis highlighted the significance of market participants' expectations in setting bank capital levels. It appears that the pressure on banks to refrain from drawing down capital buffers was driven by the concerns of market participants about adequacy of the quality and the level of capital in the stress period, rather than the cyclical volatility of the MRC.
18. In order for regulatory capital requirements to have an effect on bank lending, bank lending should be driven by loan supply rather than demand. Furthermore, capital requirements should also represent a major determinant of lending cyclicality in comparison with other loan supply and demand factors. Demand-side factors influencing bank loan growth include consumer expectations, inflation and unemployment levels.
19. The ECB's Bank Lending Survey (BLS)²⁶ suggests that the CRD had some impact on banks' lending policies. Banks surveyed reported that the impact of the CRD on credit standards was more pronounced with respect to corporate loans (both SMEs and large firms) compared to household loans (see Chart 2). The importance of the CRD, however, varied substantially across banks: while at the aggregate euro area level the large majority of banks reported that the CRD so far had basically no impact on their credit standards, a substantial dispersion across countries is notable (see Chart 3). Whereas in some countries banks reported that the CRD had little or no impact on their policies with respect to lending to enterprises, up to 80% of the banks in other countries reported that the CRD had led to a net tightening of credit standards. Similarly, while contributing to a net tightening of credit standards applied on loans to households in most countries, the CRD was reported to have led to a net easing in a few countries.
20. The questionnaire conducted by the Commission surveyed banks about the factors that had constrained their lending from October 2008 to April 2009 (see Chart 4). While 47% of respondents mentioned changes in regulatory capital, this factor was preceded by general economic and/or industry-specific outlook (95%), borrower-specific outlook (79%) and availability of collateral for new business (63%).

²⁵ Banks' answers to the questionnaire conducted by the Commission, however, indicate that regulatory capital requirements are the most important approach to determine target capital level - for both the SA and the IRB banks

²⁶ BLS of July 2009, covering a sample of more than 100 euro area banks, included questions about the impact of the CRD on the banks' lending policies (measured by their credit standards) during the period from Q1 2008 to Q2 2009

Similarly, recent studies of the ECB covering the euro area suggest that banks' capital position (in a broad sense, going beyond MRC) had an impact on the supply of loans to households and enterprises over the last two years, albeit less pronounced than the impact of factors under the 'perception of risk' category (see Charts 5 and 6).

21. Recent events have shown that certain weaknesses in regulatory capital requirements may also have pro-cyclical implications. In the buoyant years preceding the turmoil, many large banks aggressively increased leverage thus amplifying risks, including risks held in the trading book, that were not adequately captured by regulatory capital. The crisis prompted concerns over banks' capital adequacy and in order to achieve higher capital ratios deemed appropriate by the market participants, many banks have had to quickly de-leverage their operations and raise additional capital in a difficult market environment, adding to the stress. Up to 50% of the banks reported to the ECB that the financial turmoil had negative implications on both their capital position (reflecting substantial write-downs and losses on trading books²⁷ and disruptions of access to wholesale funding) and lending decisions (see Chart 7).
22. Nevertheless, the ECB analysis concluded that the recent decline in loan growth was to a considerable extent influenced by declining loan demand. The long-run trends of aggregate loan growth and economic activity in the euro area (see Chart 8) illustrate that historically lending has tended to move pro-cyclically with the business cycle. Notwithstanding the pressures experienced by the euro area banks during the financial turmoil and the transition to the CRD, loan growth at the aggregate level recently moved more-or-less in line with historical patterns. Household loan growth declined broadly in parallel with the slowdown in economic activity, whereas growth of loans to non-financial corporations only started declining with a lag, which is consistent with what has been observed in the past.
23. **Overall, the extent to which the introduction of the CRD has led to more pro-cyclical bank lending is still difficult to assess. Although the evidence presented in this section does point to some potential links between CRD and bank lending behaviour, analysis over a longer period is needed to draw more robust conclusions. Moreover, it is important to stress that as the implementation of the Basel II framework coincided with the outbreak of the financial crisis, disentangling the effects of these two events is particularly difficult.**

5. IMPACT OF CREDIT AVAILABILITY ON ECONOMIC CYCLE

24. The final step of the analysis concerns the extent to which CRD-induced changes in bank loan supply have an impact on the economic cycle.
25. For the CRD to have amplifying effects on the real economy, a significant number of borrowers must be 'bank-dependent', meaning that they cannot substitute bank loans by other means of finance. The ECB data shows that in terms of new business loans granted to non-financial corporations (see Chart 9) small-sized loans peaked in mid-2008 but have since declined by around 15%, while large-sized loans peaked in early 2009 and declined by around 10% by September 2009. While this indicates that

²⁷ After trading account profit (including unrealised gains and losses) of €2 billion in 2007, a sample of 105 EU banks incurred trading account loss of €4 billion in 2008; sources: Orbis, Bloomberg

lending to SMEs has been more strongly affected by the economic downturn, lending to large corporations has also declined in recent months. However, volumes of small-sized loans declined more than those of large-sized loans, and the spreads between the rates on small-sized and large-sized loans have increased since the beginning of 2008 (see Chart 10).

26. However, according to a recent survey²⁸ of European SMEs, most of them appear still to have access to bank financing in spite of deterioration in terms and conditions of borrowing. The results of the survey showed that applications for bank financing were mostly successful: 60% of the euro area SMEs reported that in the first half of 2009 they had received the full amount of loans applied for and a further 17% received part of the amount; only 12%²⁹ of the applications were rejected (see Chart 11). Comparable estimates were obtained by the Commission in a separate questionnaire to EU businesses on availability of bank credit.³⁰
27. In terms of extent to which corporate borrowers are able to cushion the impact of restrained lending in the context of the economic downturn, evidence shows that market-based financing, such as equity and debt securities issuance, has somewhat mitigated the decline in long-term bank financing observed since late 2008 (see Chart 12). As regards SMEs, while the majority of those that had applied for trade credit or other external financing in the first half of 2009 received the full amount requested, some businesses reported to have not been able to obtain any funding from these alternative sources (13 % and 15%, respectively, see Chart 11).
28. **Notwithstanding the indications of ongoing substitution between market-based and bank-based financing in recent months, the predominant role of banks in providing funds for spending and investment should not be underestimated, especially given the fact that obtaining the necessary funding from alternative sources has been burdensome for some, particularly smaller, businesses. Moreover, there is recent empirical evidence that shocks to loan supply have the potential to affect economic activity in the predominantly bank-based euro area financial system.**³¹

²⁸ A survey conducted by the ECB in cooperation with the Commission between June 17 and July 23, 2009, covering 6,000 SMEs and large firms in the euro area

²⁹ The larger the firms, the more successful they were in obtaining a loan as only 5% of large firms had their loan applications rejected

³⁰ Feedback from 429 EU/EEA businesses showed that in the period from October 2008 to September 2009 13% of businesses who applied for bank credit were not successful in obtaining any funding in the form of bank credit, and this percentage was higher for SMEs (15%) than for large enterprises (5%). The replies also showed that for a sub-sample of businesses who said that they had been adversely affected by availability of bank credit, obtaining the funds needed from other sources was more difficult to SMEs relative to large enterprises.

³¹ Cappiello et al. (2009) provide empirical evidence on the existence of bank lending channel of monetary policy transmission in the euro area. The authors find that changes in the supply of credit, in terms of both volumes and credit standards applied to loans to enterprises, have significant effects on real economic activity. Therefore, bank balance sheet constraints, such as binding regulatory capital requirements - to the extent that they lead banks to reduce their loan supply - may have negative repercussions on real economic growth.

Ciccarelli et al. (2009) use a panel VAR for the euro area with GDP, prices, short-term interest rates, loan demand and loan supply conditions. Using impulse response functions, the authors find that a tightening of credit standards lead to a significant decline in real GDP growth. Hence, to the extent that

6. RATIONALE UNDERLYING THE CALCULATION OF CAPITAL REQUIREMENTS

29. In the context of the G20 decisions, on February 26 2010 the Commission launched a public consultation on a package of options to amend the CRD in the areas of liquidity and counterparty credit risk management, definition of capital, leverage ratio, counter-cyclical measures, systemically important financial institutions and single rule book. It would go beyond the the scope of this report to present the assessment on these potential requirements.³²
30. However, in the context of pro-cyclicality two issues have received particular attention in the wake of the crisis: the effect of securitisation downgrades and loans to SMEs. In particular, there have been concerns about the negative effects for SMEs if the capital framework resulted in reduced access to credit and higher interest rates.
31. The asset correlation could be described as the dependence of the asset value of a borrower on the general state of the economy – all borrowers are linked to each other by this single risk factor and therefore they tend to present similar evolution. These correlations are asset class dependent, because different borrowers and asset classes show different degrees of dependency on the overall economy, and they also influence the risk weights. An example of low correlation is the retail portfolio, since defaults of retail customers tend to be more idiosyncratic and less dependent on the economic cycle than corporate defaults. As a consequence, the loss curve is relatively flat, and the capital requirements are less dependent on the state of the economy. The current CRD framework recognises the importance of SMEs to the European economy and attributes loans to SMEs with a credit volume of less than one million euro to the asset class for retail loans. Consequently, capital requirements for such loans are less affected by the economic cycle and offer considerable advantages for SMEs compared to Basel I.
32. The MRC for securitisations is also important. These are primarily based on the external rating given by a CRA.³³ External ratings provide a relatively standardised, easy-to-understand and independent measure that was already extensively used by the market before being incorporated in the Basel II framework.³⁴ Each credit rating for a securitisation tranche is linked to a specific risk-weighted capital charge (see Chart 13). The capital requirements increase sharply when a securitisation is rated lower than BBB- and anything rated lower than B+ must be fully backed by regulatory capital because:
- for subordinated tranches, the losses after default may be far greater for securitisation positions than for ordinary corporate loans that have a similar PD; and

the CRD affects bank credit standards, this finding suggests that eventually economic activity would be also affected by the CRD.

³² http://ec.europa.eu/internal_market/bank/regcapital/index_en.htm

³³ Banking regulators have not been in favour of allowing banks to utilise their own credit risk models to derive capital requirements, due to the uncertainty and lack of data with respect to asset correlations. As recent experience has shown, banks' internal models have not performed particularly well

³⁴ Directive 2009/111/EC which amended the CRD requires full due diligence on the part of banks, including 5% retention of securitised assets, while the governance of rating agencies will be addressed by the Regulation on Rating Agencies

- regulators introduced an incentive to discourage banks from investing in lower-rated risky, subordinated tranches.³⁵

During the financial crisis securitisation tranches were severely downgraded by CRAs. Not only subordinated but also senior, originally highly-rated tranches received higher capital charges. As of June 2009, capital charges for securitisation positions on average constituted 6% of the MRC for Group 1 banks and 3.2% for Group 2 banks.³⁶ More differentiation and granularity in the capital requirements could address this problem and securitisation capital charges are therefore currently under review.

33. To evaluate the overall effects of potential amendments to the Basel II framework on capital levels, the Basel Committee will conduct a Quantitative Impact Study. In order to assess their impact on European banks and possible effects on bank lending, the Commission has invited the CEBS to carry out a parallel exercise for the EU. Importantly, the CEBS' analysis will include small banks whose lending activities may be of particular relevance to SMEs.

7. MEASURES TO ADDRESS PRO-CYCLICALITY

34. Since it is not possible to achieve greater risk sensitivity across institutions at a given point in time without introducing a certain degree of cyclicity in the MRC over time, some degree of pro-cyclicality may be unavoidable. The CRD responded to this trade-off by introducing a number of safeguards to limit potential pro-cyclical effects, including stress testing (as part of Pillar 2), transitional floors to capital levels, more favourable risk-weights for exposures to less cyclical borrowers (SMEs) and inputs to the capital calculation to be based on long data histories (for PDs) and downturn estimates (for LGDs).
35. However, the recent crisis has shown that market participants expect a rise in capital levels where they do not believe that an institution is well placed to absorb losses. Enhanced counter-cyclical measures within the regulatory framework for capital requirements could help to restore confidence in banks' balance sheets, and thus reduce the likelihood that banks will have to increase capital requirements or sharply de-leverage their credit portfolios to meet market participants' expectations. The Commission agrees with international institutions such as the FSB and the Basel Committee that additional measures are necessary to avoid excessive pro-cyclicality.

³⁵ However there are important factors, that can reduce the impact of the increases in capital requirements if ratings deteriorate, because: (i) rating downgrades were accompanied by accounting valuation losses. As EU banking rules allow banks to off-set accounting valuation losses against the capital requirement, the effect of rating downgrades will be far lower for those banks that adopted conservative valuation policies for their securitisation positions; (ii) banks that have benefited from government guarantees for their securitisation positions or that have sold them into the markets or to specialised government sponsored vehicles ("bad banks"), will also have had full or partial relief from the increases in capital requirements.

³⁶ At the end of June 2008, these averages stood at 2.9% for Group 1 and 4.5% for Group 2

7.1. Capital buffers and provisions

36. The Commission is considering the introduction of capital buffers and / or through-the-cycle provisions. Both types of measures aim to mitigate pro-cyclicality. Dynamic provisioning deals with provisioning for "expected" credit losses on exposures and buffers deal with "unexpected losses".
37. Furthermore, there are two types of counter-cyclical measures – those that are applied on the basis of bank specific risk characteristics (micro level) and those that are based on one or more macro-variables, reflecting the broader systemic risk (macro level). Dynamic provisioning, capital conservation buffers and a proposal of CEBS to smoothen the cyclicality of MRC (see below) are bank specific measures – they look at specific risks associated with the individual bank.
38. Provisions for loan losses reduce reported net income in the period in which the provision is recognised and decrease the carrying value of the loans. Accounting standards currently use the "incurred loss model", allowing for recognition of losses only if they have been incurred at the balance sheet date. Current standards do not permit credit losses based on events that are expected to occur in the future to be included in provisions.³⁷
39. In practice, therefore, for a long-term loan portfolio initiated during an economic upturn, there may be no incurred loss event and no provisions would be set up under the current IFRS for credit losses on individual loans. Through-the-cycle provisioning ("dynamic provisioning") and the IASB proposal would require banks to set aside provisions for expected credit losses. As a result, during economic upswings banks would build up provisions that could act as a buffer during a downturn.
40. Several options are currently considered to address effectively the pro-cyclicality issue, improving provisioning rules being one of them. In this context, more forward-looking solutions, such as dynamic provisioning, have some advantages so that banks reflect expected losses sooner. The IASB is already working on amending current

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The IASB has undertaken a comprehensive review of the IAS 39 "financial instruments" including credit loss provisioning, and in November 2009 issued a separate Exposure Draft (ED). The ED contains five high level measurement principles (Expected Cash Flow Model, ECF) that reporting entities should use in combination with the principles-based application guidance to determine the amortised cost. Under the proposed method banks would:

- a) initially estimate the expected cash flows for the (remaining) life of the financial instrument including the expected credit losses (taking into account the collateral);
- b) calculate the "effective interest rate" (internal rate of return) on the basis of the expected cash flows. The effective interest rate would be lower than the contractual interest rate because estimated credit losses would be taken into account;
- c) at each reporting date review the initial cash flow and credit loss expectations and revise them when necessary.

The ECF approach could improve provisioning for credit risks compared to the current incurred loss model of IAS 39 because it would no longer require a trigger event and would allow an earlier recognition of credit losses. The ECF approach would also achieve a better matching of contractual interest income with expected losses. However, the ED provides limited guidance on the use of data and models. The ED basically requires point-in-time estimates for cash flows and expected credit losses. As well as the Basle Committee and other stakeholders, the Commission is assessing the IASB proposal and will contribute to its improvement in accordance with the objectives set out by the G20.

accounting rules on provisioning. The Basel Committee is planning to provide a thorough contribution which would limit pro-cyclicality and make the IASB's model more operational.

41. As far as capital buffers are concerned, two complementary elements are identified. The first element stipulates a fixed target buffer (capital conservation buffer) over the regulatory capital minimum that is available to absorb losses in "stressed" periods. Banks would be expected to build up such capital in good times. Banks that are below the fixed target would face constraints on capital distributions (i.e., dividend payments, share buybacks) until fixed target buffers are reached. This would ensure that the banking sector builds up capital buffers when it has the earnings capacity to do so and uses those buffers in periods of stress. Requiring capital to rise during periods of strong earnings could help dampen excessive banking sector credit extension and leverage.
42. The second element stipulates a counter-cyclical capital buffer. It would be designed to achieve the broader macro-prudential goal of protecting the banking sector from periods of excessive credit growth and support bank lending in the economic downturn. The target level of counter-cyclical capital buffer would vary over time and would be set as a function of one or more macro variables chosen to act as an indicator of build-up of risks at a macro level. Deviation of the macro variable(s) from the long-term average would indicate periods of build-up of macro risks, leading to the extension of the range of capital conservation buffer.
43. In order to address pro-cyclicality on a macro prudential level, the Commission acknowledges the option of a time-variant capital buffer. As such a measure would include an overall economic, monetary and macro-prudential assessment, the Commission will, together with the ECB, assess possible ways to integrate this measure into the new architecture for supervision.

7.2. Smoothing of the MRC

44. The CEBS has proposed to use the Pillar 2 process to adjust for the compression of PD estimates during benign credit conditions. In practice, the methodology is based on the application of an adjustment which reflects the gap between current PDs and PDs corresponding to either recessions or long-term average. Designed in this way, the size of the adjustment decreases in a recession and increases in expansionary phases and the buffer would be calculated accordingly. The buffer would thus be able to absorb cyclical fluctuations of MRC, reducing pro-cyclicality.

7.3. Leverage

45. Leverage within the financial system grew significantly in the run up to the recent financial crisis, both within the regulated banking sector and unregulated sectors, in entities such as hedge funds and private equity firms. While increased leverage can have the effect of increasing returns during good times, it also exacerbates losses during a downturn. Furthermore, the de-leveraging process that occurred across the financial system caused further damaging effects for financial markets and the wider economy.

46. The G20 declaration of April 2, 2009³⁸ stated that “risk-based capital requirements should be supplemented with a simple, transparent, non-risk based measure which is internationally comparable, properly takes into account off-balance sheet exposures, and can help contain the build-up of leverage in the banking system”. In its public consultation the Basel Committee outlined the contours of a leverage ratio that would work as a supplementary measure to the Basel II risk-based framework with a view to migrating to a Pillar 1 treatment based on appropriate review and calibration. In line with the Basel Committee, the Commission is considering the introduction of a leverage ratio with the aim of achieving the following objectives:
- limit the build-up of leverage in the banking sector, thus helping to mitigate the risk of the destabilising deleveraging processes which can damage the financial system and the economy; and
 - introduce additional safeguards against model risk and measurement error by supplementing the risk-based measure with a simple, transparent, independent measure of risk that is based on gross exposures.
47. It is desirable that the leverage ratio is harmonised internationally before it is implemented, and fully adjusted for any remaining differences in accounting. The ratio would be calibrated so that it serves as a credible supplementary measure to the risk-based requirements, taking into account the forthcoming changes to the Basel II framework.

7.4. Measures already adopted by the Commission

48. During the financial boom years, the design of incentive schemes for decision-making staff within financial firms fostered pro-cyclicality by stimulating excessive risk-taking through a focus on short-term profitability without adequately capturing and adjusting for risk or the long-term performance.³⁹
49. In order to address this detrimental effect of poorly designed remuneration structures, the Commission has proposed to supplement the requirements of the CRD by 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.⁴⁰
50. To improve the adequacy of bank capital requirements, the Commission has also proposed amendments to the CRD to increase regulatory capital requirements for the trading book activities and re-securitizations held in the banking book.⁴¹ During the financial crisis, the weaknesses in the MRC in these areas led to additional stress on banks' capital positions which, in turn, probably contributed to the tightening of bank lending standards.

³⁸ G-20 (2009)

³⁹ See para 5 for more on inappropriate responses of market participants to changes economic conditions

⁴⁰ COM (2009) 362 final

⁴¹ Ibid

51. In 2009 the Commission also proposed to set up a European Systemic Risk Board (ESRB)⁴² to oversee the stability of the financial system as a whole. The ESRB, if established in accordance with that proposal, will 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.⁴³ 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.

7.5. Conclusions

52. It has to be emphasised that the analysis provided is indicative given the fact that the rules of CRD II were only adopted in 2009.
53. The Commission notes that many international institutions and committees have emphasised the importance of introducing counter-cyclical measures in the prudential framework in order to reduce excessive pro-cyclicality within the financial system. In parallel with work going on in the Basel Committee, the Commission will in particular examine the options which address systemic risk and pro-cyclicality in the most effective way. The Commission believes that these measures should be able to limit excessive risk-taking in times of economic growth but also be designed in a way that they can be drawn down during economic downturns to increase the resilience of the banking sector and to support the credit flow into the economy.
54. The Commission recalls the conclusions of the Ecofin Council⁴⁴ calling for "the introduction of forward looking provisioning, which consists in constituting provisions deducted from profits in good times for expected losses on loan portfolios, and which would contribute to limiting pro-cyclicality". The Commission also recalls the G20 recommendation calling on "the accounting standard setters to work urgently with supervisors and regulators to improve standards on valuation and provisioning and achieve a single set of high-quality global accounting standards". The Commission will take into account the ongoing work by the international accounting standard setter (IASB) and prudential supervisors (in particular, the Basel Committee) when considering a legislative proposal.

⁴² See COM (2009) 499 final

⁴³ See para 5 for more on these issues

⁴⁴ ECOFIN (2009)

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