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THE BASEL II FRAMEWORK IMPLEMENTATION

AND

SECURITISATION

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Abstract

Securitisation and credit derivatives are now commonly used by European Banks as tools in a dynamic assets and liabilities management in order to optimise the allocation of regulatory capital by main activities and to increase their profitability through developing a maximum credit capacity with a more sensitive risk management.

In this article we wish to address the consequences of the implementation of the Basel II framework on securitisations in Europe, using data collected in QIS 5 and try to determine if it will change their utilisation by European banks in their strategic allocation of capital.

We show that under the new framework, securitisation do not lead to an economy in regulatory capital, and that considering the wide range of results under the Internal Rating Based approaches, we need to undertake a microeconomic analysis of the securitisation portfolio of an international bank to measure the impact of the implementation of the new framework on traditional and synthetic securitisations.

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I. The role of securitisation for European banks.

In the 2000 years securitisation has become a major instrument in Assets and Liabilities management for European banks. Statistics show that gross issuances of credit linked notes have become significant since 2000, ABCP representing the main segment of these issuances.

The use of securitisation for originating banks aims at:

- restoring liquidity of the bank, thus hedging the liquidity risk as well as concentration risk, which is achieved by the effective cession of assets to a SPV in a traditional securitisation;

- diminishing the regulatory capital amount which stems from the lending activity of the bank , and represents now 8% of the exposures held by banks weighted by standard coefficients by categories of borrowers called risk weights.

Under the Basel I Accord banks have widely used traditional and synthetic securitisations in order to reduce their obligation in capital, thus enabling them to renew their lending capacity or to be able to benefit from new lending opportunities with highest margins. The choice of exposures and the securitisations structure are carefully done in order to optimize the final yield of the bank capital

A synthetic securitisation is defined in the Basel II Framework' (§ 540)as:

“ a structure with at least two different stratified risk positions or tranches that reflect different degrees of credit risk where credit risk of an underlying pool of exposures is transferred, in whole or in part, through the use of funded (e.g. credit-linked notes) or unfunded (e.g. credit default swaps) credit derivatives or guarantees that serve to hedge the credit risk of the portfolio.”

These synthetic securitisations have in the recent period become the most used instrument by European banks in their Assets & Liabilities management to reallocate capital by activities in order to maximise the bank ROC and have largely contributed to increase the European banks' gross margins.

Although synthetic securitisations are technically burdensome and costly since the originating bank pays the excess spread though the CDS premium, they stay profitable because they allow to reduce very significantly the capital obligation by substituting the banks' Risk weight of 20% to the corporates Risk Weight'100% thanks to credit swaps. The originating banks often kept the equity - i-e, the most risky tranche of credit linked notes or obligations- and may provide the collateral asset, or liquidity facilities in a repurchase agreement

Used by banks as a major instrument in their strategic allocation of capital, the synthetic securitisation funded as unfunded, have known a rapid development in Europe. This role of securitisation may change with the revision of the regulatory framework by the Basel committee.

“In developing the revised Framework the Committee has sought to arrive at significantly more risk-sensitive capital requirements which are conceptually sound. “. To reach this goal the Basel II Framework allows banks to use their internal risk assessments as inputs to calculate the obligation in capital and has taken into account all developments of modern finance.

The final version of the "International Convergence of Capital Measurement and Capital Standards" includes a thorough analysis of securitisation mechanisms in the fourth part of Pillar one -Credit Risk- in order to correctly take their economic consequences in account.

In this article, we wish to address the consequences of the implementation of the Basel II framework on securitisations using QIS 5 data and try to determine how it will change strategies of international banks in their capital allocations and dynamic assets and liabilities management.

II. The Basel II Securitisation Framework and results of QIS5.

In June 2006 the Basel II Committee published the results of the fifth Quantitative Impact Study, QIS 5, which has taken place between October and December 2005.

This study gives the first data measuring the impact of the new framework on securitisation, from 382 banks from 32 countries participating to the survey.(see <http://www.bis.org/bcbs/qis/qis5.htm>).

The primary objective of the survey was to evaluate the potential changes on obligation in capital under the Basel II Framework. The analysis of its results should allow us to measure the impact of the new framework on banks obligation in capital linked to exposures of securitisation.

The new framework results in a global economy in capital required moderate for standardised approach $\approx 1,3\%$, but significant for foundation and advanced Internal Rating Based (IRB) approaches, for which change in total minimum capital varies from 8% to 29 % according to banks categories.

Main contributors to this decrease are retail mortgages, corporate and SME+ retail portfolios.

These global results are in line with the favourable treatment of mortgages and SME financing of the new framework, and with its fundamental aim: to adjust capital requirement to the evaluation of losses expectation instead of the Basel I standards.

Traditional securitisations as well as synthetics ones unfunded, CDS, or funded by credit linked notes or obligations issuances, are concerned and operational requirements for each case are fully developed in the Securitisation Framework.

The three approaches for evaluating Credit Risk are applicable to securitisation exposures which are either retained or held by the originating bank or resulting from investment in tranches by any bank.

A. **Standardised approach for securitisation exposure**

Exposures are to be weighted by given risk weight that compares to risk weight of underlying assets as follows:

LT Rating Category	AAA to AA ⁻	A ⁺ to A ⁻	BBB ⁺ to BBB ⁻	BB ⁺ to B ⁻	Below B ⁻ /unrated
Standardised approach Corp. Banks	20	50	100	100	150/100 150
Securitisation	20	50	100	350	Deduction
ST Rating Categories	A1/P1	A2/P2	A3/P3	Other	
Corp. & Banks	20	50	100	150	
Securitisation	20	50	100	Deduction	

For retail claims most assets risk weight is 75 %, residential mortgages 35%, commercial ones 100%, for short term exposures the securitisation Risk Weight is the A1/P1 one.

The comparison of both treatments shows that there is no economy in capital requirement for underlying exposures rated above BB⁺ and A₃/P₃, and that for low and un-rated exposures the securitisation treatment is highly penalizing with a risk weight of 350% instead of 100% or the obligation to deduce the below B⁻ and unrated exposures from the regulatory capital (50% off Tiers1, 50 % off Tiers 2).

The exceptions to this severe treatment are:

1/ for unrated, the most senior exposure which receives a “look through” treatment – average Risk Weight of underlying exposures –

2/ second loss position in ABCP programs which incurs the greater of 100% and the highest risk weight in the underlying exposures;

3/ eligible liquidity facilities which are weighted at 20%, under conditions, or at the highest risk weight of underlying facilities. This 20% risk weight compares to a previous 100% Risk Weight when the facility was at the bank’s balance sheet, thus for eligible facilities, the economy in capital required is significant 1.6% instead of 8% of exposure.

Overall, the standardised approach should result in a greater capital requirement for securitisation than for the same exposures directly held in the balance sheet by banks. This is confirmed by QIS 5 results.

Securitisation portfolio change in Minimum Required Capital under standardised approach in percentages.

Banks	Group 1			Group 2		
	Size	Change in MRC	Contribution.	Size	Change in MRC	Contribution
G10 average	3.0	7.4	0.2	1.7	30.6	0.5
CEBS average	2.6	12.9	0.4	1.2	5.0	0.1
Non-G10 average	0.3	102.4	0.3	0.8	- 18.2	-0.1

The size represents the ratio of exposures linked to securitisation operations over the total exposures of all portfolios, and the contribution the impact of the change in overall required capital due to the securitisation change in minimum capital requirement.

Results for standardised approach reflect the large variety of situations covered by data; for all cases but one the MRC is higher than the present requirement in capital, which is contradictory with the fact that risk weights are smaller in the standardised approach than the Basel I ones. Exposures retained by originating banks or investment assets may be in low rating tranches which explains large increases in MRC.

Thus averages are not very significant and a microanalysis of each securitisation portfolio appears to us as more adequate to draw a relevant conclusion.

B. *IRB approach for securitisation exposures*

Under the Internal Rating Based approaches, banks internally rate exposures and calculate the minimum required capital for each internally rated class of its portfolio.

The securitisation framework specifies that a Rating Based Approach (RBA) must be applied for rated securitisation exposures and when they are not rated, banks choose between the use of the supervisory formula to calculate Risk Weights and an Internal Assessment Approach IAA to map them, the latest method being the only applicable for ABCP programs.

The maximum capital requirement is the one obtained under IRB by the underlying exposures had they not been securitised.

Risk weight assets are obtained by multiplying exposures by Risk Weights given in table exhibit 1, which represents, versus weights presently used for the Cook ratio, a significant economy for rating above BBB⁻ and a high penalty for below BBB⁻.

In order to avoid a full deduction of unrated exposures off the capital, the bank should apply either the supervisory formula or use the IAA, to determine their Risk Weights. The IAA consists in a mapping of an equivalent external rating of an eligible ECAI. The bank must satisfy operational conditions in order to use IAA, including the ability to use ECAI methodologies in developing their internal assessment.

After having estimated the internal rating through IAA process, the bank will, apply the RBA method to them. If this is not feasible the supervisory formula is used to determine directly the IRB capital charge (exhibit 2)

Overall the IRB approach should result in an economy of required capital since unfavourable cases are capped by the maximum capital requirement of the underlying exposures had they not been securitised (see § 610)

The structure of the weight scale of RBA shows that the economy in capital obligation directly depends upon the seniority of tranches held by the banks, and or of the rating of exposures retained. Thus enhancing method resulting in leaving the originating bank with equity tranche is highly penalizing.

QIS 5 results vary largely among groups of banks.

Securitisation portfolio change in MRC under most likely IRB approach (i.e. Foundation on Advanced according to Bank)

Portfolio	Group 1			Group 2		
	Size	Change in MRC	Contribution	Size	Change in MRC	Contribution
G10 average :	2.8	0.5	0.0	1.7	-24.1	-0.4
CEBS average	2.0	8.6	0.2	1.3	-26.6	-0.4
Non-G 10 average	1.3	-35.0	-0.5	1.9	-59.8	-1.2

The largest banks Group 1 of G10 and CEBS, show as impact of the new framework on minimum required capital linked to securitisation exposures, an increase 0.5 to 8.6%;

For smaller banks and non G10 banks the change is a very significant decrease of MRC -24% to -60%.

Again these results correspond to different situations and average results may not be significant.

The analysis by components of these increases in MRC shows that the MRC change is highly sensitive to the quality of exposures and to the proportion of unrated exposures (Exhibit 3)

As largest banks are more likely to be originating ones, the fact that they are penalized by the new framework induces us to think that securitisation no more leads to a reduction of minimum required capital but that each case must be carefully analyzed in order to correctly measure its effect on the obligation in capital and the capital allocation strategy of the bank.

III. Consequences of the implementation of the Basel II framework on securitisation.

The large variation of change in minimum required capital given by QIS 5 data shows that the economy in regulatory capital given by securitisation is highly dependent of the securitisation structure and of the quality of exposures held.

For synthetic securitisations, where originating bank often retains both senior and equity tranches, global results indicate that, for G10 Group 1 banks which are the most concerned, the economy is small and might be questioned considering the cost and complexity of operations.

Though the limited size of the sample and the variety of structures could give misleading averages, and the widespread range of detailed results indicates that a microeconomic analysis of various securitisations of a bank is needed in order to separate traditional securitisations from synthetic ones and to measure exactly for both categories the impact of securitisations on minimum capital requirement under the new framework.

It will allow us to check to what extent securitisation still implies an actual significant economy of regulatory capital. As the new framework, under the IRB approaches, aims at sizing the minimum capital requirement to the expectancy of future losses linked to the nature of exposures, all securitisation which maintain the most risky exposures in the originating bank portfolio, either directly or through the acquisition of equity tranche and hedges the credit risk on others with a CDS should not result in an economy of regulatory capital versus keeping all underlying exposures.

Hence for most synthetic securitisations the benefit might be too weak to resume their use as tools in Assets and Liabilities management with the objective to decrease the obligation in regulatory capital, allowing the originating bank to reallocate this economy to other activities.

Exhibit 1.

International Convergence of Capital Measurement and Capital Standards

615. Banks may apply the risk weights for senior positions if the effective number of underlying exposures (N, as defined in paragraph 633) is 6 or more and the position is senior as defined above. When N is less than 6, the risk weights in column 4 of the first table below apply. In all other cases, the risk weights in column 3 of the first table below apply.

RBA risk weights when the external assessment represents a long-term credit rating and/or an inferred rating derived from a long-term assessment

External Rating (Illustrative)	Risk weights for senior positions and eligible senior IAA exposures	Base risk weights	Risk weights for tranches backed by non-granular pools
AAA	7%	12%	20%
AA	8%	15%	25%
A+	10%	18%	35%
A	12%	20%	
A-	20%	35%	
BBB+	35%		50%
BBB	60%		75%
BBB-		100%	
BB+		250%	
BB		425%	
BB-		650%	
Below BB- and unrated		Deduction	

616. The risk weights in the table below apply when the external assessment represents a short-term credit rating, as well as when an inferred rating based on a short-term rating is available. The decision rules outlined in paragraph 615 also apply for short-term credit ratings.

Exhibit 2

Fifth Quantitative Impact Study, QIS 5

624. The Supervisory Formula is given by the following expression:

$$(2) \quad S[L] = \left\{ \begin{array}{ll} L & \text{when } L \leq K_{IRB} \\ K_{IRB} + K[L] - K[K_{IRB}] + (d \cdot K_{IRB} / \omega) \left(1 - e^{-\omega(K_{IRB} - L) / K_{IRB}} \right) & \text{when } K_{IRB} < L \end{array} \right\}$$

where

$$\begin{aligned} h &= (1 - K_{IRB} / LGD)^N \\ c &= K_{IRB} / (1 - h) \\ v &= \frac{(LGD - K_{IRB}) K_{IRB} + 0.25(1 - LGD) K_{IRB}}{N} \\ f &= \left(\frac{v + K_{IRB}^2}{1 - h} - c^2 \right) + \frac{(1 - K_{IRB}) K_{IRB} - v}{(1 - h) \tau} \\ g &= \frac{(1 - c)c}{f} - 1 \\ a &= g \cdot c \\ b &= g \cdot (1 - c) \\ d &= 1 - (1 - h) \cdot (1 - \text{Beta}[K_{IRB}; a, b]) \\ K[L] &= (1 - h) \cdot ((1 - \text{Beta}[L; a, b])L + \text{Beta}[L; a + 1, b]c). \end{aligned}$$

625. In these expressions, Beta[L; a, b] refers to the cumulative beta distribution with parameters a and b evaluated at L.⁹⁶

626. The supervisory-determined parameters in the above expressions are as follows:

$$\tau = 1000, \text{ and } \omega = 20$$

⁹⁶ The cumulative beta distribution function is available, for example, in Excel as the function BETADIST.

Exhibit 3

Table 25

**Change in minimum required capital for the securitisation portfolio
in per cent, G10 Group 1 banks**

	Standardised approach	IRB approach
Total risk-weighted assets; of which	-15.5	-18.5
– Risk-weighted assets rated exposures	-25.6	-18.7
– Risk-weighted assets unrated exposures	12.0	27.7
– Investors' interest early amortisation	0.0	0.1
– Correction for cap	-2.0	-20.8
– Correction for provisions		6.8
Positions to be deducted	23.2	19.0
Overall change in MRC versus current	7.7	0.5

This table only includes banks for which complete QIS 5 workbooks were available.

Table 26

**Change in minimum required capital for the securitisation portfolio
in per cent, G10 Group 2 banks**

	Standardised approach	IRB approach
Total risk-weighted assets; of which	-69.5	-62.6
– Risk-weighted assets rated exposures	-52.5	-56.2
– Risk-weighted assets unrated exposures	-16.2	5.0
– Investors' interest early amortisation	0.0	0.0
– Correction for cap	-0.7	-11.4
– Correction for provisions		0.0
Positions to be deducted	79.7	45.4
Overall change in MRC versus current	10.2	-17.3

This table only includes banks for which complete QIS 5 workbooks were available.

Exhibit 3

Table 27

**Change in minimum required capital for the securitisation portfolio
in per cent, CEBS Group 1 banks**

	Standardised approach	IRB approach
Total risk-weighted assets; of which	3.7	-5.8
– Risk-weighted assets rated exposures	-17.1	-10.1
– Risk-weighted assets unrated exposures	23.4	43.4
– Investors' interest early amortisation	0.0	0.0
– Correction for cap	-2.6	-29.4
– Correction for provisions		-9.7
Positions to be deducted	17.5	13.7
Overall change in MRC versus current	21.2	7.9

This table only includes banks for which complete QIS 5 workbooks were available.

Table 28

**Change in minimum required capital for the securitisation portfolio
in per cent, CEBS Group 2 banks**

	Standardised approach	IRB approach
Total risk-weighted assets; of which	-67.5	-60.3
– Risk-weighted assets rated exposures	-49.6	-52.3
– Risk-weighted assets unrated exposures	-16.9	-7.4
– Investors' interest early amortisation	0.0	0.0
– Correction for cap	-1.0	-0.6
– Correction for provisions		0.0
Positions to be deducted	63.6	45.8
Overall change in MRC versus current	-3.9	-14.6

This table only includes banks for which complete QIS 5 workbooks were available.

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