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Response to BCBS Consultative Document

Revisions to the Basel Securitisation Framework

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Since 2002, Christofferson, Robb & Company (CRC) has managed funds that transfer credit risk from banks to non-bank institutional investors using securitisation. With $1.8 billion under management and over $1 billion in committed undrawn funds, CRC believes it is the largest and most experienced investor dedicated to bilateral balance sheet transactions. Most of CRC's deals are tied to small and medium enterprise (SME) loans, prime residential mortgages and counterparty exposure that banks originate in the natural course of their business. The investors in CRC's funds include public pension plans in Europe and the United States, pension plans of public companies, university endowments, and sovereign wealth funds.

CRC believes that decentralizing risk by transferring it to end-investors outside the banking system is a sustainable way to recapitalize the banks, and that such transfers ought to be encouraged by banking regulators. By transacting with CRC, banks transfer risk to long-term, systemically-unimportant, wealthy institutional investors, whose profit and loss is of interest only to them. CRC's investors, in turn, achieve exposure to assets, such as European small and medium enterprise loans, which are underrepresented in the capital markets.

Through the crisis, CRC's transactions have performed as intended. Some have lost money for CRC and its investors, while others have earned positive returns. In no cases have banks incurred losses in the senior tranche retained after selling a subordinated tranche to CRC. In all cases transactions have freed up capital and credit lines that banks have devoted to additional lending, while improving their Tier 1 capital ratios. CRC has invested in deals structured according to the Ratings Based Approach (RBA) and more recently according to the Supervisory Formula Method (SFM).

As we will illustrate in this note, the changes to the securitisation framework proposed in the Consultative Document would, if implemented in their current form, shut down bank balance sheet securitisation, and with it an important means of risk transfer out of the banking system.

The proposals in the Consultative Document are most relevant to assets held in the trading book, although the paper suggests applying the changes to all assets, and the calibration is geared to US subprime mortgage securitisations. The data shows that these assets have little in common with bank loans. Our comments are based on the effects of the proposal on the risk weight of senior retained tranches held in the banking book and arising from risk-sharing transactions.

Since the majority of CRC's transactions are balance sheet securitisations of internally rated loans and would likely be assessed according to the MSFA under Basel 3,

CRC's comments pertain mostly to the Modified Supervisory Formula Approach (MSFA).

For illustrative purposes, we discuss a 2012 trade between CRC and a large German bank. The structure of this deal is typical of risk sharing transactions referencing core lending activity to small and medium enterprises: the bank sold the losses in this portfolio from 1% to 9%, protecting itself against losses equal to 7.5× the historical average and more than double the historical peak loss rate.[1] CRC funded the entire potential liability at the outset, so the bank bore no counterparty exposure to CRC.

Portfolio Specification

Assets	SME loans
Pool size	€2bn
Weighted Average Life	1.7y
LGD	50%
1-year PD	0.7%
Correlation	0.19
Expected Loss	0.33% p.a.

Deal Structure

Tranche	Thickness	Subordination	Ownership
Senior	91%	9%	Bank
Mezzanine	8%	1%	CRC
FLP	1%	-	Bank

The scheduled maturity of the deal is 3.8 years, but the MSFA uses the legal maturity, 7 years in this case, capped at 5 years.

Basel II K_{IRB} was equal to 6.07%, with the capital charge for the un-securitised pool equal to €2bn x K_{IRB} = €121m. The bank prudently structured the deal to attach the senior tranche well above the value of K_{IRB}, making the capital treatment of the senior tranche robust to significant deteriorations in credit quality of the underlying pool.

[1] Since German reunification, defaults on loans to SMEs in Germany have never exceeded 1.5% in any year; realized losses have never exceeded 1%.

Capital Calculations under Basel II IRB and proposed Basel III

		Basel II SFA		Basel III MSFA	
Tranche	Thickness	K	€m	K	€m
Senior	90.60%	0.56%	10.15	6.07%	109.98
Mezzanine	8.00%	69.40%	104.15	92.96%	148.74
FLP	1.40%	100.00%	28.00	100.00%	28.00
All tranches	100%		142.30		270.14
Retained tranches	92%		38.15		121.39

Under Basel II, this transaction allowed the bank to cut the capital charge of the €2 billion loan portfolio from €121 million to €38 million. Using the MSFA as proposed by committee, capital savings would be extinguished.

Considering our example above, we respond directly to Questions 6, 8, 16, 17 and 21 below.

Question 6: Is the RBA appropriately calibrated and formulated? Should other risk drivers be incorporated?

Our principal concern is the calibration of risk weights for the revised ratings-based approach to single-B bonds (Consultative Document, p. 35), whose 1-year default probability is 4.73%. These are not the sort of assets that banks originate. In CRC's experience, this default probability is 10 times higher than typical bank loan assets. For example, UK prime mortgage and German SME loan 1-year default rates have historically been closer to 50 basis points. Similarly, LGDs on single-B bonds of 60% are significantly higher than the historical average of 20% for bank loans. The rating agencies themselves note that recoveries on loans tend to be twice the recoveries on bonds, so using the recovery rate for bonds is not appropriate for a model that is intended to apply to banks.

Benchmarking multi-year PDs to issuer-weighted default data from Moody's corporate bonds from 1970 to 2010 in the MSFA (WP 22, p. 18, eq. 20) leads to extreme penalties for transactions with maturities greater than one or two years, and is an inappropriate measure for default probabilities of the majority of securitised bank loans. The default rates of bank loans are not only lower, but much less volatile than those of corporate bonds.

Question 8: Is the MSFA appropriately calibrated and formulated? Does it incorporate the appropriate risk drivers? Is the calibration of tau and omega appropriate? If not, what evidence can respondents provide to support an alternative calibration?

We have concerns about the derivation and the calibration of the MSFA.

The derivation of the MSFA infers a risk-neutral default probability conditioned on stress values of the single asymptotic risk factor using the market price of risk, which is empirically derived and assumed constant. Recent research (Espinoza & Segoviano, *Probabilities of Default and the Market Price of Risk in a Distressed Economy*, IMF 2011) shows that market price of risk increases during crises by as much as 30%, and so overstates implied PD by 15%.

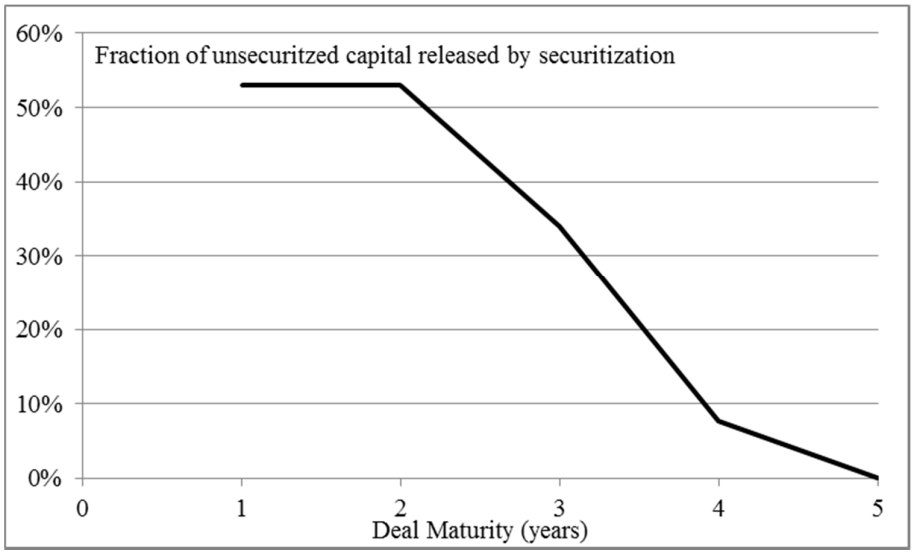
The calibration of the MSFA, as stated in the Technical Paper, is to be based on an expected shortfall, mark-to-market framework. The proposed changes to the securitisation framework seek to increase capital requirements on senior tranches of securitisations specifically to guard against mark-to-market losses during financial crises. This approach is inconsistent. The underlying bank assets are not marked-to-market thus retained senior securitised tranches resulting from risk-sharing transactions should not be marked to market.

Question 16: Is the definition of maturity appropriate, in light of the Committee's objectives?

The suggestion to make maturity at the tranche level a driver of risk is misconceived. We first illustrate the punitive nature of the maturity adjustment, we then discuss alternatives.

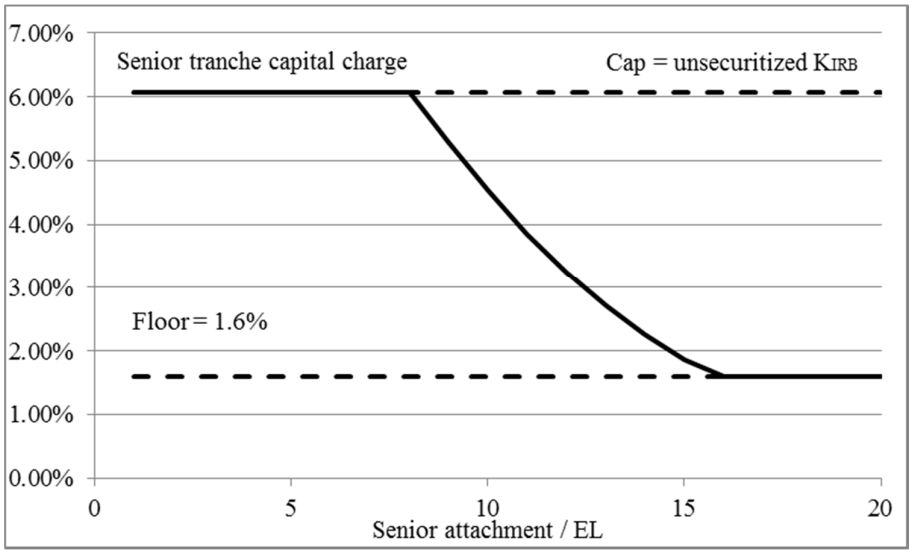
Maturity Adjustments

One punitive effect of the MSFA stems from the double-counting of maturity adjustment. Maturity of the assets in the pool is incorporated into the maturity adjustment to K_{IRB}, as in Basel II, and the maturity of the deal is further incorporated in a maturity adjustment term (w_j – *BIS Working Paper 22*, equation 26) which is supposed to approximate the dependence of PDM on maturity, PDM is the 1-year probability of default adjusted to M years via an empirical map derived from Moody's issuer-weighted corporate default data from 1970 to 2010. The effects of increasing maturity on our illustrative deal are severe, leading to capital requirements more than double those for the un-securitised assets, and negating any potential capital release:



Capital released falls rapidly with increasing maturity until the capital charge on the retained senior tranche hits the cap of the tranche width times the original capital charge on the un-securitised assets, which is not adjusted for maturity.

Another way of illustrating the extreme conservatism in the MSFA is to vary the attachment point of the senior tranche and note the value at which the risk weight of the tranche becomes lower than the un-securitised pool:



The risk weight of the senior tranche remains at its capped value – equal to the risk weight of the un-securitised pool – until the attachment point reaches 8× the expected loss of the pool assets. An attachment point at 7.5× expected loss was deemed safe enough under the Basel II SFA to permit a 56 bp capital charge on the senior retained tranche. Under the Basel III MSFA there is no benefit at all to our illustrative transaction.

In many transactions for risk-sharing purposes replenishment is permitted. This allows the maturity of the tranches to be significantly longer than the maturity of the underlying assets, which allows the bank to lock in protection costs over a longer period and avoid repeated cost in entering into new transactions. The senior tranche is protected by terminating replenishment as losses rise. The proposal will make transactions of this kind uneconomic.

In the case of trade-finance portfolios, the average portfolio maturity is typically between 90 and 180 days. For example, the Sealane II transaction of Standard Chartered bank has a portfolio of 65 days average life but a legal maturity of 4.5 years. Replenishment is permitted, provided cumulative defaults are below 4.0%. The senior tranche (risk weighted at 7% under Basel II) attaches at 7%.

Question 17: Is the proposed 20% risk-weight floor set at an appropriate level? Please provide justification and evidence, to the extent possible, for alternative levels for the risk- weight floor.

We believe that 20% is unnecessarily high. Historical rating agency data shows that concerns about the risks of senior rated assets are overblown, particularly for balance sheet transactions.

Some of the best data comes from Fitch Ratings' "Special Report: Global Structured Finance Losses, 2000-2011" and Standard & Poor's. Here are some surprising findings:

- During this period, Fitch rated $9.5 trillion in structured finance assets globally. So far, they have realized a *cumulative* 1.5% in losses. This includes all ratings categories from single-B to triple-A. It counts securities backed by residential mortgages and consumer assets such as credit card receivables; collateralized loan obligations backed by loans to fund leveraged buyouts; commercial mortgage-backed securities, and "re-securitisations" of assets that are, themselves, asset-backed securities.
- No losses whatsoever have been incurred in the $1.5 trillion triple-A-rated tranches of asset-backed securities in the U.S. backed by credit cards, auto loans and student loans. Based on performance to date, Fitch expects cumulative losses in these transactions of 0.2% before they mature.
- More surprisingly, the same can be said of all $500 billion of Fitch triple-A commercial mortgage backed securities in the U.S. These securities have experienced no losses so far and 0.4% of cumulative losses are expected before all outstanding deals mature.
- There have been no losses to date in the €2 trillion triple-A-rated issuance of structured finance in Europe, Middle East and Asia, nor does Fitch expect losses in these transactions over time.
- Data from Standard & Poor's is equally impressive, although less comprehensive and available only for Europe. There were €275 billion asset backed securities outstanding in mid-2007, not counting mortgage backed securities. They experienced 0.16% cumulative defaults by mid-2012. Default rates were 0.052% p.a., while losses were even lower, since most defaulted ABS have significant recoveries.
- According to S&P, 0.07% of the €755 billion in rated residential mortgage backed securities (RMBS) outstanding in mid-2007 defaulted by mid-2012. That is not an annual figure, but cumulative over five years. It includes all rated tranches, from single-B to triple-A. It includes RMBS in distressed real estate markets from Iceland and Ireland to Spain and Greece. Triple-A RMBS defaults were confined to two technical events:

(i) For the US dollar tranches of Eurosail, a U.K. nonprime RMBS, USD payments were stuck with the swap counterparty over the weekend when Lehman filed for bankruptcy, thus leading to a non-timely payment. All payments were later made in full. (ii) Several tranches in Celtic Irish RMBS transactions were restructured, but ultimately paid the triple-A tranches in full.

- CRC believes that no bank has ever lost $1 due to losses reaching the triple-A attachment point on any balance sheet transaction.

This suggests that 56 bp should be an adequate reserve against the most highly rated senior tranches defaulting. The choice of 20% as a floor makes it uneconomic to hedge portfolios of residential mortgages, as these pools are typically risk weighted around 30%.

Question 21: Are the assumptions used in developing and calibrating the approaches discussed above appropriate in view of the Committee's stated objectives? Please provide empirical justification for alternative assumptions to those noted above.

The revised framework for bank capital treatment of securitised assets is motivated by an incorrect assumption about the data and consequently imposes inappropriately high capital charges on securitised assets.

From page 1 of the Consultative Document:

> Capital requirements assigned to highly-rated (eg AAA) senior and mezzanine securitisation exposures, which could be as low as 56 basis points, were too low, and this was illustrated by the poor performance of these securities.

This commonly held belief, which is a primary motivation for the revised rules, is simply untrue. The historical data from the rating agencies (summarized above) demonstrates this.

While a subset of 2006-2007 vintage triple-A U.S. subprime and alt-A mortgage securitisations did lose principal (though less than 5% in aggregate over even these worst-performing vintages), as well as re-securitisations of these securities, we would raise two principal objections to calibrating all retained triple-A tranches to this experience: (i) these mortgages were originated to sell, and provide a poor proxy for bank balance sheet assets and (ii) logically, this practice is similar to calibrating equity risk to the worst performing stocks over the worst performing interval (e.g., assuming all equities are internet stocks in March of 2000). A subset of U.S. mortgages performed badly over a certain interval, but in general securitisation performance was in line with expectations.

The concern for "cliff effects" derives from an error of logic. "Cliff effects" were deliberate in the original SFA, and do not understate capital requirement if used as intended.

For a senior tranche that attaches anywhere above K_{IRB}, the SFA applies a 7% risk weight. As the Technical Document correctly observes, "when the attachment point exceeds K_{IRB} the SFA often produces very low charges for tranches that, if externally rated, would be well below investment grade." Considering the effect of moving the attachment point of the senior tranche down through the value of K_{IRB}, the SFA applies a 1250% risk weight to every additional unit of senior exposure below K_{IRB}, which is conservative. Since banks have to apply the SFA to a pool of exposures on an all or nothing basis, a far more relevant issue than the details of the behavior of risk weights near the K_{IRB}, is whether the K_{IRB} attachment point is too high or too low in the first place.

In the 1930s, hard-up taverns offered a "free lunch" as long as the customer bought an expensive beer to accompany it. The beer was overpriced while the food was underpriced. You would not have the food without the beer, as the famous expression suggests, "There's no such thing." Similarly, we have to look at the cliff effect as a package of tranches.

Since each transaction is reviewed by regulators—and generally approved in advance—through Pillar 3, the national regulators already have the tools to address abuses.

The calibration of the MSFA imposes capital charges that effectively banish most securitisation for bank loans, unjustly punishing securitised assets by double-counting maturity effects and calibrating with reference to "junk bonds" that historically default ten times more frequently than bank loan.

In our illustrative transaction, capital released is equal to the un-securitised capital requirement minus the capital requirements for the FLP and senior tranches retained by the bank after selling the mezzanine tranche to CRC. Under the Basel II SFA, capital release was equal to €84m, or 69% of the pre-securitisation capital charge. Under the Basel III MSFA there is no capital release, since the capital charge on the retained tranches is at its capped value of the charge on the un-securitised pool. (The capital charge on the senior tranche is also capped at the un-securitised value.)

The extreme treatment of securitised tranches appears to arise from several elements of conservatism buried in the calculations. In each case, the risk of the loans themselves is modeled differently once they enter a securitised pool. There is no economic justification for this asymmetry.

Society can debate whether or not it wishes to ban transactions that transfer banks' credit risk to long-term institutional investors. CRC would argue against such a ban, showing how these transactions create a less fragile banking system: they make banks simpler, easier to manage and easier to regulate, while channeling funds to banks' clients such as SMEs. However, this debate should not become lost in a maze of dense mathematics which obscure, rather than elucidate. *No prudent economic analysis could possibly attribute a zero risk reduction to a securitised transaction that transfers all the risk from 1× expected loss to 7.5× the expected loss.* (In fact, it is only due to the MSFA caps that the capital charge does not rise after securitisation. If the bank in this example hedged credit risk up to 8× expected loss, securitisation would still confer zero capital savings under the MSFA.)

The concerns about model risk are exaggerated.

Basel II already addresses model risk in two ways. First, the confidence interval for the ASFR is set at 99.9%. Presumably, society will tolerate bank failures more than once a millennium. The rules set the threshold conservatively to account for imperfections in the model.

Second, the maturity adjustment at the loan level increases the risk weight to account for the increasing hazard rate of low PD loans. For instance, the maturity adjustment is 2× for an annual PD of 0.1% and a 6-year maturity. If this is not enough, the maturity adjustment formula should be amended. Then the adjustment will flow through to all of a bank's exposures, whether or not they are securitised.

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