

Reducing the Reliance of Securitisation Capital on Agency Ratings

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Abstract

This paper describes the disadvantages of using agency ratings for securitisations in regulatory applications, and in particular as a basis for regulatory capital. We argue that an external ratings based approach to securitisation capital has become close to unworkable since the crisis, particularly in Europe because of major practical problems created by ratings agency practices.

These problems are (i) ratings volatility due both to methodology changes and the applications of sovereign and counterparty caps and triggers and (ii) to the lack of transparency of ratings agencies approaches and inconsistency with regulatory risk evaluations.

European regulators have adopted the objective of reducing reliance on external ratings in financial regulation substantially within Europe. In November 2013, the Joint Committee of the European Supervisory Authorities (EBA, ESMA and EIOPA - ESAs) launched a joint consultation on how this might be achieved. It has not, however, been obvious what risk measure for securitisation exposures one might employ as an alternative to agency ratings.

Here, we propose as a substitute for agency ratings a simple analytical formula termed the Conservative Monotone Simplified Arbitrage-Free Approach (CMA). This approach is a variant of the Arbitrage Free Approach (AFA) developed by Duponcheele et al (2013) in response to BCBS (2012) and an alternative to some of the approaches in BCBS (2013).

The approach allows one to assess the riskiness of a securitisation exposure on the basis of a small number of inputs. These consist of (i) its attachment and detachment points, (ii) the Basel regulatory asset class and associated regulatory parameters for the pool, (iii) the risk weight of the pool (either based on the Standardised Approach or Internal Ratings Based Approach calculations).

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1. Introduction

Regulation of Ratings Agencies

Regulators in several jurisdictions have adopted as an important objective to reduce reliance on agency ratings in financial regulation. This objective was expressed in the summit declaration of the G20 meeting in Toronto in June 2010 which stated: “We committed to reduce reliance on external ratings in rules and regulations. We acknowledged the work underway at the BCBS to address adverse incentives arising from the use of external ratings in the regulatory capital framework, and at the FSB to develop general principles to reduce authorities’ and financial institutions’ reliance on external ratings. [...]” (Appendix II, Paragraph 27).

In the United States, the use of agency ratings in regulatory contexts can be traced back to 1973 when the SEC proposed employing them as a basis for hair-cuts applied in broker-dealer net capital calculations. Following the crisis, in the summer of 2008,² the SEC made a series of relatively bold proposals including one that would have meant the removal of agency ratings from almost all SEC regulations.

In December 2008 this latter proposal was deferred but it subsequently resurfaced in the Dodd-Frank Wall Street Reform and Consumer Protection Act passed in July 2010.³ Dodd-Frank stated in section 931(5) that inaccurate credit ratings on structured financial products “contributed significantly to the mismanagement of risks by financial institutions and investors, which in turn adversely impacted the health of the economy in the United States and around the world.” On this basis, it required US regulatory agencies to remove dependence on external ratings from their rules and regulations.⁴

The European Commission, prior to the crisis, after some debate, decided to allow ratings agencies to regulate themselves as long as they adopted policies in conformity with a set of principles devised by IOSCO in 2004 for ratings agencies⁵. ESMA was required to perform periodic assessments of whether ratings agencies were following the code.⁶ As the fallout from the US subprime crisis continued, attitudes changed and following the April 2009 G20 meeting, an accelerated process took place to institute statutory regulation of ratings agencies.

Following the US example, the European authorities are also seeking to reduce reliance of both market participants and financial regulation on credit ratings. The European Council in October 2011 concluded that progress was needed on reducing over-reliance on credit ratings. In May 2013 the European Parliament and Council adopted regulation on credit rating agencies which included reduction of reliance on credit ratings as a stated aim. Article 6 of the May regulation states: “The Union is working towards reviewing, at a first stage, whether any references to credit ratings in Union law trigger or have the potential to trigger sole or mechanistic reliance on such credit ratings and, at a second stage, all references to credit ratings for regulatory purposes with a view to deleting them by 2020, provided that appropriate alternatives to credit risk assessment are identified and implemented.”⁷ In November 2013, the Joint Committee of the European Supervisory Authorities

² See SEC (2008a) and (2008b).

³ Altman et al (2011) provide background on the policy debate regarding regulatory use of agency ratings prior to Dodd-Frank.

⁴ Pre-Dodd-Frank discussions of US regulation of credit ratings includes Mason and Rosner (2007), Coffee (2009) and Herring (2009). Discussions of the impact of Dodd-Frank on ratings agency regulation include Hill (2011), Martin and Franker (2011), Wilmarth (2011), Schwarcz (2012).

⁵ For the latest form of these standards, see IOSCO (2008).

⁶ See European Commission (2008a), (2008b) and (2008c).

⁷ See European Parliament and the Council (2013).

(EBA, ESMA and EIOPA - ESAs) launched a joint consultation on how such a reduction could be achieved.⁸

While the European authorities now have a clear objective (as just described) of reducing reliance on agency ratings, exactly how this may be achieved remains a complex and challenging task, particularly in the field of securitisation ratings. Capital calculations for securitisation positions by regulated investors like banks rely heavily on external ratings⁹.

The November consultation specifically focussed on the Standardised Approach to bank regulatory capital calculation. Paragraph 40 of the consultation states: “Despite all the recommendation described above, the framework of the standardised approach for credit risk can still be labelled, at least to a certain extent, as mechanistic reliance. That issue, however, is not generated at the level of the Guideline but it is intrinsic in the Basel framework and in the European implementation. Therefore, even if there is overreliance, this cannot be corrected by any action of the ESAs, such as amending or repealing the Guidelines, both for policy reasons (there is no available or agreed alternative), as well as for legal reasons (in the EU the Guidelines/recommendations or delegated legislation and implementing measures cannot amend the CRR).”

Paragraph 43 goes on to state: “Further work is however needed, especially in regard to the international workflows (most notably, the Basel Committee Task Force on the Standardised Approach) that aim to find alternatives for replacing the mapping to external ratings in the standardised approach and the mapping for securitisations exposures.”

These quotations highlight the strong desire of European authorities to rely less on external ratings but some confusion about what in practice could be used instead. This is very clearly the case for Standardised Approach securitisation capital calculations. Below, we present a viable, rigorous alternative to external ratings based on a transparent formula economical in its use of inputs.

The Thinking behind Regulatory Developments

The background to the G10 resolution and the consequent change in the direction of US and European regulation is major debate within the regulatory and academic communities on why ratings agencies failed to foresee the crisis in sub-prime mortgage lending. A common view has been that, by providing over-optimistic credit assessments of securitisations used to finance that lending, the ratings agencies actually contributed to the crisis. Ratings agency methodologies employed in assessing the quality of re-securitisations appear in retrospect inadequate to capturing the risks involved. This exacerbated the fall-out from the initial crisis affecting sub-prime-related transactions.

Much of the academic analysis has focused on the incentives ratings agencies faced to offer over-optimistic credit assessments. Ratings agencies switched in the 1970s from a business model in which ratings were paid for by investor subscriptions to one in which issuers paid to secure a rating. Partnoy (2009) argues that the progressively wider use of ratings for regulatory purposes allowed a small group of ratings agencies to share a quasi-monopoly rent from providing regulatory “dispensations” and that this diverted them from their traditional role of providing expert opinions on credit.¹⁰ As the main rationale of ratings shifted from credit evaluations (aimed at investors) to regulatory

⁸ Alcubilla and Ruiz del Pozo (2012) provide a useful summary of regulatory developments in Europe pertaining to the ratings agencies. Blackrock (2012) provide additional industry perspectives. Masera (2012) and Brummer (2013) discuss policy-maker attitudes to ratings agencies on both sides of the Atlantic.

⁹ This is also the case for insurance companies, but under a different capital regime, such as Solvency II.

¹⁰ Kisgen and Stahan (2010) provide empirical support for this view, demonstrating that the gain to issuers in obtaining a higher rating was a significant lowering of the spread.

dispensations (aimed at regulated issuers and regulated investors), the incentives for agencies to focus narrowly on accurately assessing credit quality diminished.¹¹

The incentive for agencies to rate generously was probably more intense in the field of structured product ratings than in traditional corporate ratings.¹² Securitisation ratings were a rapidly expanding and highly lucrative business in the run up to the crisis, in which the agencies were scrambling to gain market share.¹³ Fitch was a more credible challenger to the two established ratings agencies in securitisation ratings than it was in the more stable area of corporate ratings and so competitive pressures were greater. This may have diluted rating agency incentives to rate securitisations cautiously, especially in the largest securitisation market based on US residential mortgages.¹⁴

Academics have extensively studied agency incentives in the run up to the crisis. Partnoy (2009) emphasized the incentives faced by ratings agencies and the effect this may have had on securitisation ratings prior to the crisis. (He had earlier criticised the growing use of credit ratings in financial regulation (see Partnoy (1999).) Bolton, Shapiro and Freixas (2012) and Mathis, McAndrews and Rochet (2009) analyse the incentives of agencies to attract business by over-stating credit quality.¹⁵

Major Practical Problems in the Use of Ratings for Regulatory Purposes

The major practical difficulties created for financial institutions using ratings as a basis for regulatory capital or other regulatory applications have attracted much less attention. These problems have become much more apparent since the financial crisis.

1. Ratings agencies, struggling to restore their reputation, have adopted sudden and drastic changes in methodology that have imparted an extreme form of procyclicality to securitisation ratings.
2. Absent changes in methodology, the operation of caps and triggers included by agencies in their ratings evaluations to allow for transfer, convertibility and counterparty risk have had undesirable consequences particularly for banks located in unfavoured countries. This has caused major problems for securitisation markets in European periphery countries that have recently suffered sovereign downgrades.
3. The agencies' practices in reviewing securitisation ratings (with intermittent and unsystematic surveillance) are not compatible with the frequency of capital calculations.

¹¹ The Committee on the Global Financial System published a discussion paper in 2005 on the role of ratings in structured finance (see CGFS (2005). Although it identified some potential problems, its findings were somewhat over-optimistic in that it concluded "Similarly, the Working Group believes that potential conflicts of interest in structured finance are not materially different from the issuer fee-induced conflicts, if any, that might exist in other parts of the ratings business, and the agencies appear to be fully aware of the role of reputation in dealing with adverse incentives that might arise in this context. On this basis, it is the Group's assessment that the complexity of managing these conflicts is not affected by the agencies' involvement in rating structured finance instruments."

¹² He, Qian, and Strahan (2011) present empirical evidence consistent with this point.

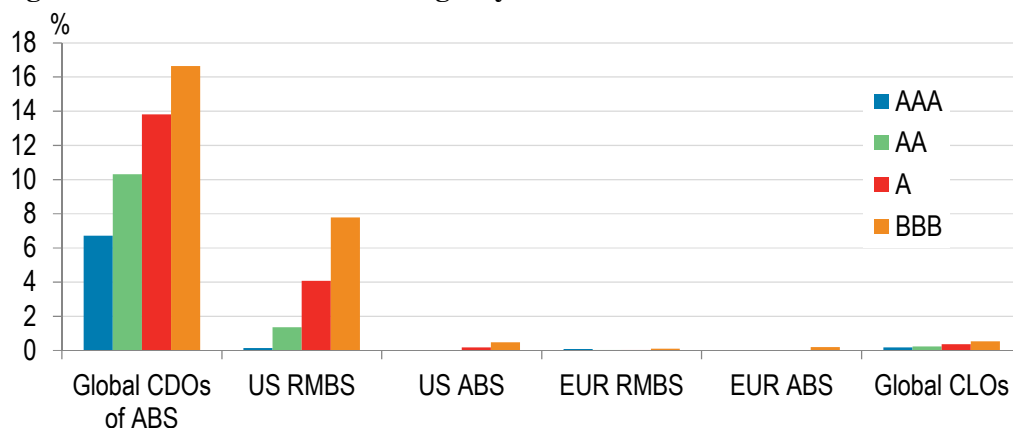
¹³ The competitive nature of the ratings market and the scope for issuers to shop around for ratings is analysed empirically by Griffin, Nickerson and Tang (2013).

¹⁴ Leaving aside incentives and over-optimism, one may consider that the experience of the crisis demonstrated the inadequacy of the models employed by the ratings agencies especially in the case of complex transactions. As pointed out in IMF (2009) Figure 2.12 page 93, the fraction of AAA-rated US CDOs of ABS securitised in the period 2005-7 that remained AAA by June 2009 was just 11%. Almost 60% were less than single-B rated by that date.

¹⁵ Also see Fender and Mitchell (2009) and White (2011) which provide introductions to the ratings agency incentive problems and Opp, Opp and Harris (2013) and Pagano and Volpin (2009) which analyse agency incentives using game theoretic models.

4. The complexity and lack of transparency in structured product ratings, uncertainty about the agencies' future ratings policies and inconsistency with regulators' evaluations of risk have hampered the recovery of the market.
5. This paper documents the effects of reliance on agency ratings on the securitisation market, explaining how methodology changes and the use of triggers by agencies have injected undesirable volatility into ratings and hence capital calculations that depend on them. Apart from ratings actions pertaining to US residential mortgage-backed securitisations, most downgrades of securitisation tranches have reflected factors that have no direct connection to collateral credit quality, such as methodology changes and sovereign and counterparty ceilings and triggers.
6. Within Europe, these factors have generated numerous downgrades and then some subsequent upgrades when the ratings agencies reversed their opinions or methodology changes. When one looks at objectively observable indicators of credit quality that depend less on ratings agency judgments such as defaults, a different picture emerges of securitisation risk particularly within Europe. Figure 1 shows default rates in S&P-rated securitisation tranches.

Figure 1: Structured finance average 1-year default rates for 1983-2012



Source: Standard & Poor's.

An Alternative Formula-based Approach

In our view a simpler, model-based capital formula could serve as a more stable, transparent and consistent alternative to agency ratings as a basis for capital and other regulations. Models of this type were included, in the past, among the hierarchy of approaches that banks could employ for regulatory capital calculations under Basel II. The Supervisory Formula Approach (SFA) is applicable for banks that have enough information about the underlying asset pools to calculate the Basel II Internal Ratings Based Approach (IRBA) capital for the pool assets, denoted K_{IRB} .

A new class of such regulatory models has been developed by BCBS (2012), which proposed the use of the Modified Supervisory Formula Approach (MSFA), and by Duponchee et al (2013a), which suggested the Arbitrage Free Approach (AFA)¹⁶. In two subsequent papers, the latter authors presented a simplified version of the AFA which allowed one to calculate capital based on publicly available inputs (Duponchee et al (2013b)) and showed how the capital formula continued to hold in a multi-period setting, thereby introducing rigorous maturity effects (Duponchee et al (2013c)).

¹⁶ The AFA was developed as a response to the Basel Committee's consultative paper on securitisation capital BCBS (2012) and offers a family of analytically solvable models of securitisation capital consistent with the financial engineering behind the Internal Ratings Based Approach (IRBA) to whole loan capital of BCBS (2006).

Finally, Duponcheele et al (2013d) examined the accuracy of granularity adjustments included in the AFA.

As an alternative to the use of agency ratings in capital calculations and for other regulatory uses, we propose that one employs a variant of the Arbitrage Free Approach (AFA), namely the Conservative Monotone Simplified Arbitrage-Free Approach (CMA). As indicated by the word “conservative”, the CMA includes conservative modelling assumptions that mean that capital for all the tranches of a securitisation exceeds the capital required if the bank holds the underlying asset pool. Also, the CMA is “simplified” in the sense that the user may calculate capital based on publicly available information without access to the enhanced regulatory information that is typically only known by the originator of the deal.

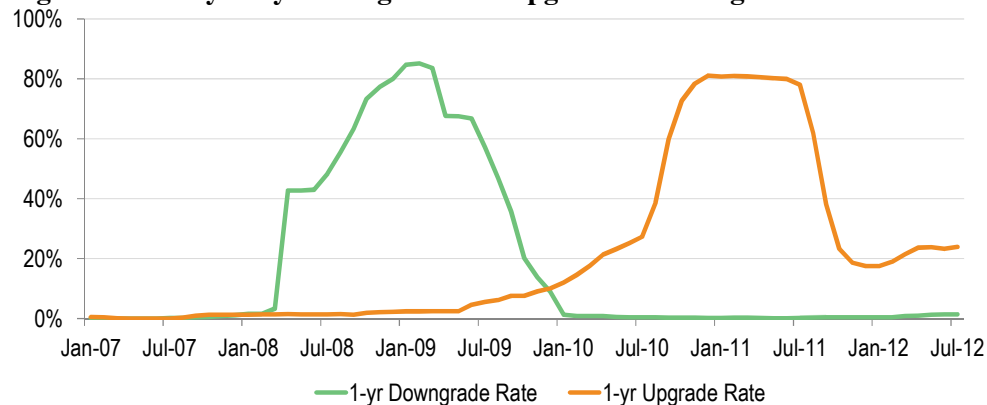
The remainder of this memorandum is organised as follows. Section 2 documents the practical problems that the use of agency ratings in securitisation capital calculations has generated. Section 3 justifies and describes the alternative, formula-based approach we advocate, the CMA. Section 4 concludes.

2. External Ratings: A Source of Financial Instability

Agency Methodology Changes as a Source of Ratings Instability

In this section, we illustrate with examples the disruptive impact of changes in ratings agency methodologies¹⁷. Much of the volatility in securitisation ratings in the recent crisis, particularly in Europe, has been driven by changes in ratings agency methodologies. These methodology changes have included modifications in the ways the agencies regard credit risk in particular asset classes and changes in the treatment of counterparty risk.¹⁸ They have added, materially, to the pro-cyclicality of the regulatory capital system, exacerbating the problems of financial institutions in managing themselves during the crisis.

Figure 2: Moody’s 1-yr downgrade and upgrade rates on global CLOs



Source: BNP Paribas and Moody’s.

A particularly extreme example of the former type of methodology change is the default probability stresses for CLOs adopted by Moody’s in 2009 and then removed in 2011. Figure 2 shows 1-year downgrade and upgrade rates for CLOs over this period. The figure illustrates the major fluctuations

¹⁷ To reduce those impacts, Nationwide Building Society (2013) discusses the need to simplify external ratings.

¹⁸ Note that in parallel to changes in methodologies for structured product ratings, the agencies have materially altered their approaches to rating banks as discussed in Packer and Tarashev (2011).

in ratings (and hence in capital) generated by Moody's initially adopting and then dropping the additional stresses.¹⁹

The details of Moody's actions in this are as follows. In 2009, the agency included a 30% stress on the PDs of all pool assets included in CLOs it was rating. This was announced in a February 2009 press release (see Moody's (2009a) page 1). This was then also included in the updated criteria paper that was published in August 2009 (see Moody's (2009b), page 5, section 2.2.1.4). In 2011, the agency removed the stresses. Initially, this was proposed in their Request for Comment (RFC) from March 2011 (see Moody's (2011a) pages 1 and 2 – also in the associated press release). The finalised new criteria were published in June 2011 (see Moody's (2011b) with no mention of the stress anymore.²⁰

The point here is not that ratings agencies should refrain from employing new data or the best and latest techniques for forecasting credit market outcomes. It is more that apparently arbitrary reactions to a crisis situation by ratings agencies may produce very substantial fluctuations in bank capital with little transparency as to the evidence that justifies such discrete (and, as it turned out, contrary) reactions.

Another example of the impact of methodology changes concerns counterparty risk: the criteria changes announced by Standard & Poor's (S&P) in December 2010. S&P was leaving issuers a 6 month time frame to restructure their transaction. On 12th April 2011, as S&P was not satisfied with the amount of restructuring, it placed on "CreditWatch negative" the ratings of 2,005 structured finance securities in 975 transactions. This impacted about 30% of outstanding of mainly European transactions rated by S&P at the time. Another 554 securities (involved in 225 transactions) avoided negative CreditWatch status because S&P judged that "credible action plans" had been submitted to mitigate counterparty risk.

By July 2011, after the 6 month time frame, S&P had lowered 1,090 ratings in 511 mainly European transactions by an average of 2.9 notches. CMBS and RMBS were the most affected asset classes. Downgrades were concentrated toward the top of transaction capital structures, especially among tranches previously rated in the range AAA to AA-.²¹ Even high quality asset classes were impacted, such as Dutch RMBS who saw 27% of transactions with securities downgraded by a severity of 2.6 notches.

Our point here is not that S&P should refrain from changing its criteria if there is an increased in risks for investors, it is simply to illustrate the extreme procyclicality of securitisation ratings when they are hard-wired in the regulation. This is evident by looking at what happened to Ireland and Portugal in Table 1. In the 6 month transitional period, the downgrades by S&P for Irish and Portuguese RMBS were particularly severe: 100% of Irish transactions with 78% of securities were downgraded with a severity of 6.4 notches, 89% of Portuguese transactions with 45% of securities downgraded with a severity of 2.9 notches. This is because S&P, in that 6 month period, a) changed the counterparty criteria, b) lowered the ratings of counterparties and c) lowered the sovereign ratings for Ireland and Portugal, creating a perfect storm for the mortgage securities ratings, and because of the hardwiring of ratings in regulation, this compounded the problems for banks in those countries.

¹⁹ Note that some other securitisation sectors like Trade Receivables and Auto-Loan deals did not experience volatility in the methodologies employed by the ratings agencies.

²⁰ The removal of the PD stress was highlighted again in their CLO Interest newsletter from June 2011.

²¹ See Standard & Poor's (2011a) and Standard & Poor's (2011b).

Table 1: Summary of Downgrades for EMEA CMBS and RMBS Potentially Affected by Updated Counterparty Criteria

Sector	Sub-sector	Tranches downgraded*		Transactions with downgrades*		Average downgrade severity (notches)
		Number	% of outstanding	Number	% of outstanding	
CMBS	Total	223	25	95	52	-2.9
	U.K.	100	24	48	53	-2.6
	German	39	20	17	49	-2.9
	Multi-country	69	35	24	73	-3.3
	Other	15	17	6	27	-2.6
RMBS	Total	699	25	283	41	-2.9
	U.K. prime	204	34	53	40	-2.8
	U.K. nonconforming	237	31	77	68	-2.7
	Spanish	68	14	45	33	-2.6
	Italian	32	14	25	27	-2.6
	Dutch	45	14	22	27	-2.6
	Portuguese	52	45	34	89	-2.9
	Irish	45	78	16	100	-6.4
	Other	16	7	11	14	-2.9

*Downgrades between Jan. 18, 2011 and July 19, 2011 on tranches identified as potentially affected by 2010 counterparty criteria.

Source: Standard & Poor's.

The De-stabilising Effects of Triggers

Even if ratings agencies were to follow consistent and stable methodologies, their use of triggers and overrides in securitisation ratings may have unfortunate consequences, especially in a crisis. To illustrate, sovereign ratings ceilings for European securitisation tranches have generated wide-spread downgrades in entire country-specific sub-sections of the securitisation market in recent years.

The policies followed by ratings agencies in imposing sovereign ceilings on securitisation ratings are complex and apparently arbitrary. For example, the methodology followed by Fitch (set out in Fitch Ratings (2013)²²) allows tranche ratings to exceed the rating of their corresponding sovereign to some degree depending on how much the deal has mitigated transfer and convertibility risks. However, in the words of Fitch, sovereign ratings are a “magnet” for the ratings of securitisations in the same country and Fitch imposes an absolute rule that the rating of a securitisation tranche cannot be more than 4 notches above the rating of the corresponding sovereign.

The other ratings agencies also follow policies which imply that securitisation ratings cannot exceed the ratings of the corresponding sovereign by more than a specified number of notches. In the case of Moody's, the maximum gap between sovereign and structured product ratings is more variable. Moody's (2011c) discusses how the agency assessed the impact of sovereign credit weakness on structured ratings in the case of the Eurozone crisis. Table 1 (page 4) in that document shows the highest structured rating, the contemporary sovereign rating for several countries, the gap between them varying being 2, 5, 6 and 7 notches for Spain, Portugal, Greece and Ireland, respectively. Again, in the case of Standard & Poor's, the links between sovereign and structured ratings are somewhat complex but the agency requires that structured ratings be no more than 6 notches higher than sovereign ratings when the sovereign is in investment grade and 5 notches when it is sub-investment grade.

²² See also the earlier study, Torres and Zelter (1998).

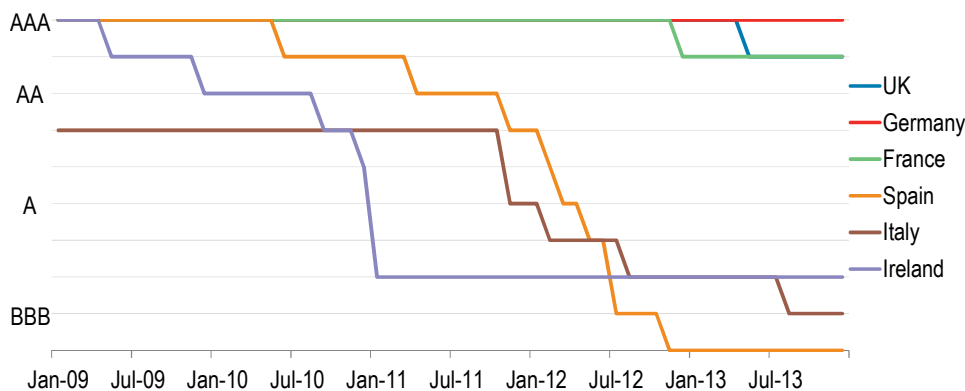
In a recent request for comment paper, however, Standard & Poor's (2013a) proposes to strengthen the link between sovereign ratings and securitisation ratings. Transactions with moderate sensitivity such as ABS and RMBS could be rated up to 4 notches above the sovereign ceiling: S&P estimates that all ratings on SME CLO will be affected in Italy and Portugal and more than half of all ratings in RMBS in Spain, Italy and Portugal. Transactions with high sensitivity such as pools backed by public sector assets could be rated only 2 notches above the sovereign rating. These stricter criteria are likely to reinforce the negative feedback loop between rating downgrades and sovereign crisis in the future.

It is not clear from rating agency documentation exactly how reduced credit standing of a sovereign affects the rating of securitisations within the corresponding jurisdiction. The link may reflect considerations of convertibility, reduced chances of a bailout or general macroeconomic correlations between sovereign default and pool performance. Convertibility is much less relevant for a local bank investing in local securitisations. Reduced chances of a bailout does not appear a relevant factor for regulatory capital. One might question whether general correlation links between sovereign default and pool performance justifies a hard link like a sovereign ceiling.

Moreover, sovereign ratings appear highly judgmental and in some cases bordering on arbitrary. Some academic studies have identified observable macroeconomic indicators that appear to drive sovereign ratings (see, for example, Cantor and Packer (1996) and Hu, Kiesel and Perraudin (2002)). But, the evolution of sovereign ratings for some countries in the recent crisis period have been controversial and inconsistencies of opinions between ratings agencies have been noticeable. For whole markets to be downgraded because of a debatable judgment on unclear criteria is not a desirable feature of a regulatory capital allocation process.

Figure 3 shows the time paths of selected composite sovereign ratings in recent years. The composite ratings are calculated by combining the ratings of Fitch's, S&P and Moody's and taking the second highest rating. Key periods for major periphery country ratings are Oct 2011 – Nov 2012 where Spain dropped from AA to BBB+ and Oct 2011 – Aug 2012 where Italy dropped from AA- to BBB+.

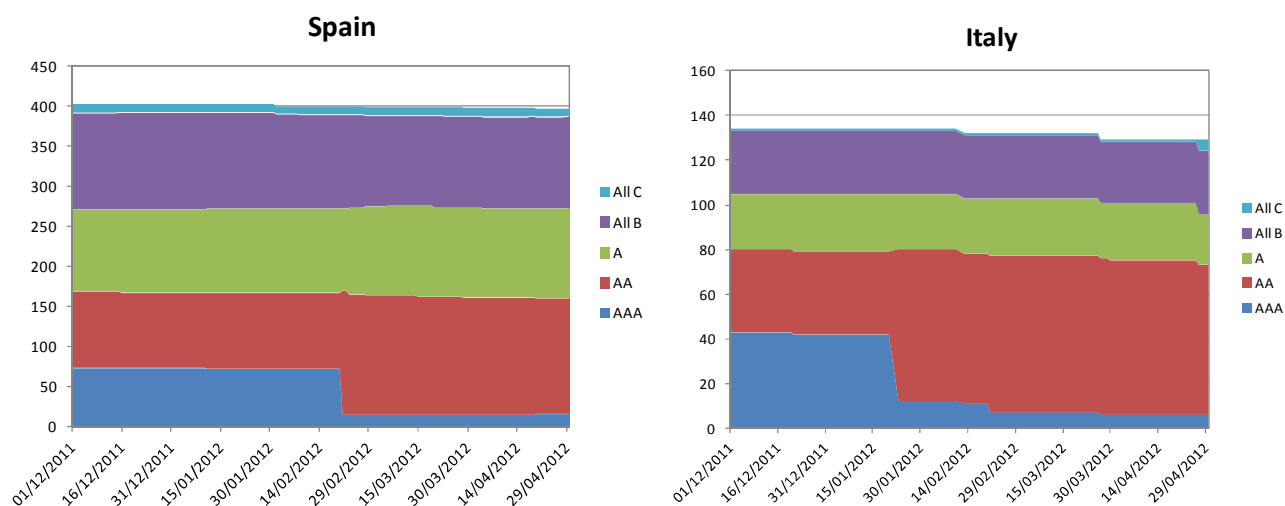
Figure 3: Selected European Sovereign Composite Ratings



Source: Bloomberg, BNP Paribas.

Figure 4 shows the distributions by ratings over time of RMBS for two European periphery countries, Spain and Italy, affected by sovereign ratings ceilings. As may be observed, the number of AAA-rated issues jumps down brusquely when the sovereign rating is downgraded.

Figure 4: RMBS Ratings Distributions for Spain and Italy



Source: Reuters and Risk Control Limited.

Monitoring practices by the ratings agencies

The practices adopted by the ratings agencies in monitoring ratings have also been the source of major issues for bank originators and investors in securitisations particularly since the crisis. The ratings agencies do not habitually review ratings in a timely and systematic manner as, for example, a bank would normally do in its own internal ratings.

To illustrate, some senior US Prime RMBS remained AAA until 2009 and then were downgraded to CCC overnight.²³ The frequency of securitisation ratings review is unclear and some ratings do not seem to be updated or confirmed for years. When a rating does not change, it is unclear whether this is because the rating agency has reviewed it and concluded the rating should be maintained at its current grade or if the agency has simply not reviewed it. Basing the evaluation of credit quality and hence capital on weak processes like these is difficult for highly regulated entities like banks.

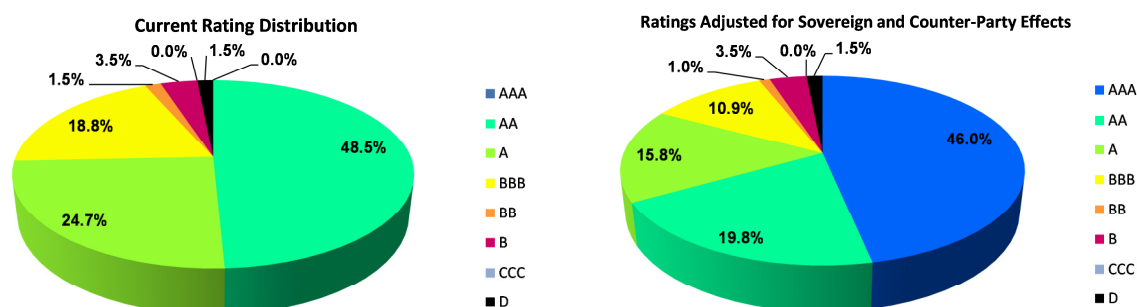
It may be argued that enhanced supervisory oversight of the ratings agencies by regulators has improved the quality of surveillance by ratings agencies. But most market participants would still regard the transparency and regularity of securitisation surveillance by ratings agencies as less than perfectly reliable.

Lack of transparency with the use of external ratings

The fact that ratings (and hence capital) changes occur both because of alterations in credit quality and other issues such as sovereign ceilings and methodology changes serves to reduce transparency. Apart from US RMBS, most securitisations downgrades in recent years have occurred for reasons other than collateral performance, such as counterparty criteria, methodology changes, and sovereign linkage. When ratings criteria become so variable that they predominate in the reasons for ratings actions, the very meaning of a rating - i.e. the risk it purports to signify - becomes unclear.

²³ Here are two specific examples: CWL 2006-10 3AV4 was still rated by S&P AAA on 28/5/09 and rated CCC the next morning. RALI 2006-QO2 A3 was still rated by Moody's Aa2 on 19/1/09 and rated Ca the next day.

Figure 5: Q3 2013 Italian RMBS Ratings



Source: Standard & Poor's, BNP Paribas.

Figure 5 compares Italian RMBS ratings on a given date with ratings adjusted to remove the effects of sovereign ratings and counterparty criteria. The pie chart on the left shows the distribution of tranche ratings in September 2013 (those ratings would be the ones to use for the purpose of capital calculation under an external ratings based approach). The pie chart on the right shows the distribution of ratings for the same tranches based on collateral quality alone. These ratings are calculated by S&P by removing the effect of counterparty criteria and the effect of Italy's sovereign rating. In essence, those ratings are 'closer' to the spirit of a capital assessment under a Basel formula using attachment and detachment points (sensitive to collateral performance and without either counterparty criteria or sovereign rating effects).

Inconsistencies between regulator and ratings agencies risk rankings

The relative risk measure from ratings agencies is sometimes not compatible with the risk measure of policy makers and regulators. For example, a portfolio of SME exposures has a risk weight of 75% compared to 100% for a portfolio of BBB/BB large corporate exposures. In theory, if external ratings and regulatory risk measures were compatible, a securitised portfolio of SME should thus require less capital than a securitised portfolio of BBB/BB large corporate exposures. If this is not so, as in the case of SME, then there is a clear anti-SME bias in the risk assessment done by ratings agencies.

In Standard & Poor's (2013b), the SME CLO "criteria uses the concept of an archetypical European SME pool for which [S&P] have assigned an average credit quality assessment of 'b+' as the starting point for obligor default analysis when assigning 'AAA' ratings. The archetypical pool represents [S&P] view of the average characteristics typically featured by SME portfolios securitised in Europe." In fact, actual default data on SME pools in Europe does not support this arbitrary assumption of B+ since defaults rate tend to be much lower than implied by a B+ rating. Moreover this overall B+ assumption does not reflect the reality of historical defaults even during the crisis. Interestingly, B+, which is more appropriate for highly leveraged corporate loans, has a risk weight of 150%, twice the level that is required for SME, at a 75% risk weight.

With a B+ assumption by S&P, the tranching of a 75% risk-weighted SME pools will be much more capital intensive than the tranching of a 100% risk-weighted BBB/BB corporate portfolio. There is an inversion in the measure of risk.

As long as the hierarchy applied in Europe places external ratings approaches above a regulatory formula that uses the appropriate regulatory inputs determined by regulators, ratings agencies' views will always have primacy over the view of regulators, and this will annihilate policy makers' efforts to restart lending to SME via securitisation.

An important current emphasis in European financial policy is restoring lending to SMEs. To quote the Governor of the Bank of England: "You will hear more about supply-side initiatives, aimed for example at rebuilding securitisation and supporting SME lending, in coming months." (Mark Carney,

Oct 2013). Similarly, as the ECB Executive Board member Yves Mersch put it: “*I see strengthening capital markets through securitisation as an important complement to bank lending. It bridges the financing needs of SMEs with the funds of non-bank investors.*” (Yves Mersch, Nov 2013).

Inconsistencies between regulator and ratings agencies views on asset classes described above are particularly significant to the extent that ratings agency views conflict with important policy objectives.

3. A Formula-based Alternative for Calculating Securitisation Capital

So far, we have criticised agency ratings, focussing on the excessive volatility that has resulted since the crisis from methodology changes and sovereign ceilings and counterparty risk triggers. An obvious question is what alternative exists that could serve as a basis for risk analysis, capital calculations and other regulatory purposes? In this section, we build on BCBS (2012) and Duponcheele et al (2013a) to propose a simple, formula-based risk measure that can be calculated from publicly available information by investor, originator, or other, similar banks.

Before describing this alternative approach, it is advisable to consider: what are the properties that a risk measure employed in such a context should possess. In our view, the following key considerations are relevant:

1. The risk measure employed should primarily reflect the credit risk of the pool asset class;
2. The measure should react to sudden deterioration in the underlying portfolio performance;
3. The measure should not generate sudden and arbitrary changes in capital requirements.

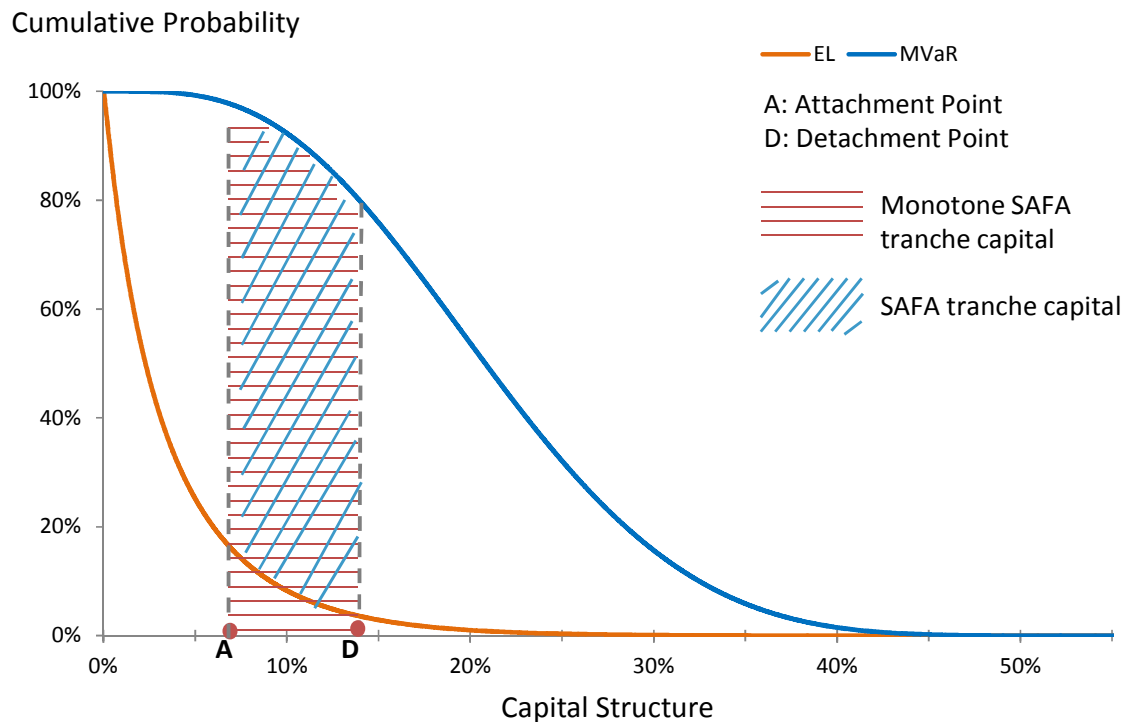
Returning to our proposal, we suggest as a candidate substitute for external ratings a simplified version of the Arbitrage Free Approach (AFA) developed in Duponcheele et al (2013a). To give some key background facts, the AFA model is a simple analytical formula for capital based on a two factor extension of the Single Asymptotic Risk Factor model employed in the Basel II whole loan capital charges. As such, it is (i) entirely consistent with the Basel II assumptions and (ii) builds in an absence of capital arbitrage in that, before over-rides and conservative premiums, the total capital a bank must hold against a pool of loans equals by construction the total capital it would have to hold if it owned all the tranches of the securitisation.

The version of the AFA that we propose is the Conservative Monotone Simplified Arbitrage-Free Approach or CMA). This may be explained concisely by referring to Figure 6. Within the model, one may derive various key quantities as analytical solutions. In particular, one may consider the expected loss and the capital based on a Marginal Value at Risk approach for notional very thin tranches. These quantities plotted against the level of par values of more junior tranches are shown in Figure 6. As one moves to the right of the figure, one sees on the vertical axis the level of expected loss and capital (all measured as a fraction to total deal par) for successively more senior (thin) tranches.

Since expected losses and Marginal VaR-based capital are additive for any two exposures, the expected loss and capital for a discretely thick tranche may be read off in Figure 6 by considering the area under the two curves between any pair of attachment and detachment points on the horizontal axis.

Compared to the AFA, the CMA simplifies (as suggested by Duponcheele et al (2013b) by requiring a reduced and less demanding set number of inputs. In particular, what is required are: the attachment point (A) to cater for the credit enhancement, the detachment point (D) to cater for the thickness of the tranche, the Risk Weight of the pool (RW_{Pool}), the Loss Given Default of the Pool (LGD_{Pool}), the Capital Surcharge Scaling Factor ($CSSF_M$) for the asset category and the Stressed Correlation (ρ^*_M). Again, compared to the capital formula proposed in Duponcheele et al (2013a), the CMA is conservative in that it includes capital to cover Expected Losses as well as Unexpected Losses.

Figure 6: Expected and Unexpected Losses for the Simplified Arbitrage-Free Approach (SAFA) and the Conservative Monotone SAFA (CMA)



To return to the desirable features of a risk measure as listed above, the CMA possesses all three properties in that:

- The CMA takes as one of its primary inputs the risk weight of the securitisation pool, RW_{Pool} . By employing this as an input, the approach ensures that the risk hierarchy among assets classes identified by regulators is respected both before and after securitisation. For example, SME and large corporate BBB-rated loans have risk weights of 75% and 100% respectively which in turn implies that capital calculated for a securitisation tranche with an SME loan pool will be lower than a similar tranche with a BBB-rated large corporate pool;
- The CMA includes sensitivity to sudden deterioration in the pool by lowering the tranche attachment and detachment points, A and D , when collateral has defaulted;
- The CMA avoids agency ratings sensitivity to changes in ratings methodology, restoring predictability in future capital requirements.

In summary, compared to the use of agency ratings for calculating capital, the CMA would have the following benefits in Europe:

1. The CMA would limit the impact of sovereign contagion on capital requirements and other aspects of financial regulations due to automatic, en-masse downgrades in tranche ratings and ratings caps. Such downgrades have hampered bank funding and recovery in some countries. It would limit the future damage to the financing of economy of countries whose rating is no longer AAA.
2. The CMA would reduce the negative effect created by the unpredictability in ratings agencies methodologies and associated rating volatility on capital requirements. The need to re-rate to obtain regulatory ‘dispensation’ solely because of criteria changes is eliminated.

3. The CMA would improve transparency by providing market participants with a simple, transparent and interpretable measure of unexpected loss risk for securitisation tranches, as a marginal contribution to the Value-at-Risk.
4. The CMA would reduce the incidence of forced sales in crisis periods not driven by changes in collateral quality, but driven by sudden changes in capital requirements.

For assessing risk and capital, the CMA could be combined with a designation of ‘high quality plain vanilla’ ABS based on qualitative, non-rating dependent analysis such as that provided by Prime Collateralised Securities (PCS). This would allow ‘high quality plain vanilla’ ABS to avoid conservative overlays which become necessary if one has to cater for the more highly structured and opaque parts of the market. Introducing such a qualitatively based distinction would reinforce investment in ABS in the eyes of investors and lower the funding costs to the real economy.²⁴

Finally, the CMA approach has the advantage of being rigorously model based. It provides regulators with the flexibility to adapt the regulatory parameters for a given asset class whose risk is deemed in need of recalibration²⁵. The scope to take such a targeted approach for a specific asset class would allow regulators to respond to a particular situation without changing the risk calibration for asset classes that are not deemed to pose a systemic risk.

Note that the Simplified Supervisory Formula Approach (SSFA), relabelled in the latest Basel consultative paper (BCBS (2013)) the IRBA²⁶ approach because it uses IRB pool inputs, might be seen as a substitute for the CMA in the role described above. To be clear, the SSFA-IRBA is just an ad hoc capital formula²⁷ with no direct justification in risk modelling. It contains parameters that have been calibrated against a risk model²⁸, some assumptions of which are almost identical to those of the AFA/CMA (see BCBS (2013)). To this extent, this offers a rough approximation of the results one would obtain using the more rigorous CMA directly. Since the CMA offers closed form and simple capital calculations, there is no advantage in using a SSFA-IRBA-style approximation.

4. Conclusion

In this paper, we have highlighted practical issues associated with the use of agency ratings in securitisation capital calculations and other regulatory applications. In particular, these issues have, in recent years, created major problems for European banks. Negative shocks to bank capital, particularly in periods of crisis, generate forced asset sales and a credit crunch affecting new lending. Unnecessary volatility in regulatory capital requirements is, therefore, costly and tends to undermine financial stability.

Much of the recent criticism of ratings agencies has concentrated on their performance in the run up to the crisis, a period in which, according to many commentators, they were lax in evaluating the credit

²⁴ It would also be consistent with reported remarks made by Mario Draghi at Davos (Financial Times, 28 January 2014) in which he encouraged regulators to distinguish more between high quality plain vanilla ABS and less transparent parts of the market with a view to encouraging the reawakening of the ABS market.

²⁵ Such targeted review of the risk weights was done by Basel for Re-securitisation products and by the US for the subprime activity.

²⁶ To avoid confusion with the label “IRBA” used for the pool of assets prior to securitisation under the IRB Approach, we will call the proposed approach “SSFA-IRBA”. The IRBA is a risk model, the SSFA-IRBA is not.

²⁷ Its core is the SSFA with a simple smoothing function of allocation: the exponential function.

²⁸ The MSFA is itself a risk model, and was modified to incorporate concepts of the AFA, and used to calibrate the simple smoothing function of the SSFA, giving rise to the SSFA-IRBA.

quality of US mortgage related securitisations. But the policies they have followed since the crisis have also been unhelpful. Brusque and in some cases swiftly reversed changes in methodology have generated unnecessary fluctuations in structured ratings. Together with hard-wired triggers and country ceilings that have produced widespread downgrades affecting wide swathes of the structured product market, these policies have made an external ratings based approach to regulatory capital highly problematic.

Unfortunately, the hierarchy of approaches proposed in BCBS (2013) places the External Ratings Based Approach (ERBA), which relies exclusively on external ratings, above the Standardised Approach (SA)²⁹ (which does not require external ratings). As a result, European institutions will be in a state of continued dependency³⁰ on external ratings for the large majority of their securitisation holdings.³¹

For these reasons, we advocate removing ratings agencies from the hierarchy of approaches used for calculating regulatory capital and replacing it with an alternative, or at least reducing the level of an external ratings based approach within that hierarchy so that agency ratings become a ‘last resort’ instead of ‘first resort’. Within Europe, this would encourage investment in high quality ABS and enhance securitisations as an important source of funding for the real economy.

We describe, in this paper, an alternative to agency ratings, the CMA, that could both serve as a basis for calculating capital and potentially serve other regulatory purposes. This alternative is a recently developed analytical capital formula that builds on the models presented in BCBS (2012) and Duponcheele et al (2013a) and (2013b). The last of these proposes a tractable and transparent capital formulae based on information, publically available to both investors and originating institutions.

²⁹ To avoid confusion with the label “SA” used for the Standardised Approach for the pool of assets prior to securitisation, we will call the proposed approach “SSFA-SA”.

³⁰ They may suffer unnecessary large swings in regulatory capital requirements as a result.

³¹ Note that our comments on the location of a ratings based approach in the hierarchy of approaches for calculating securitisation capital do not apply to the use of the Internal Assessment Approach used by banks for some conduit and liquidity facilities exposures. Many of the practical issues we identify as problems with agency ratings are mitigated or eliminated in IAA implementations. For example, IAA ratings through the crisis did not suffer from the problems of intermittent and unsystematic surveillance evident in agency ratings.

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