Reading 5

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Cash Flow Analysis of Synthetic ABS/RMBS Transactions

ABS / EMEA

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INTRODUCTION

Synthetic structures[1], which were first widely employed in Collateralised Debt Obligation (CDO) transactions, are now often being used to transfer the risk of more granular portfolios of loans and leases. As a flexible tool to transfer the credit risk of a portfolio of assets, synthetic transactions have become increasingly frequent in the asset-backed securities (ABS) sector. SME[2] transactions in particular are predominantly (with the exception of Spain) using such technology. The lower cost and legal and operational complexity of synthetic transactions are partly responsible for their increasing popularity with originators.

The risk analysis of synthetic transactions does not differ substantially from the analysis of cash transactions, indeed the aim is usually to replicate the exposure of such cash deals. However, there are certain key characteristics of a synthetic structure that need to be reflected in the rating analysis. Most notably, synthetic excess spread mechanisms could have a significant impact on the level of credit enhancement of junior notes, while credit event definitions and quality of performance information could significantly affect the ratings of the whole capital structure (see the Appendix for an example of rating impact). Synthetic excess spread also makes these transactions similar to cash structures.

One of the major advantages of synthetic transactions compared with a cash transaction is the possibility of removing certain legal and operational risks from the transaction's credit risk profile. These risks, such as commingling, clawback, set-off, etc often affect cash transactions in many jurisdictions but could be reduced or even removed using synthetic structures. At the same time funded synthetic structures could expose noteholders to counterparty risk, which need to be properly mitigated.

This report highlights the characteristics of synthetic transactions and how Moody's incorporates them in its rating analysis.

This report does not constitute a change in methodology, as the concepts described here have been applied in the past to most transactions. However please note that Moody's has aligned in the modelling of synthetic transactions the average life calculation as well as the loss timing to that of cash transactions[3].

[1] i.e. credit risk transfer achieved with the use of Credit Default Swaps
[2] Securitisations of loans to Small and Medium Enterprises
[3] See "Quantitative Rating methodology" box on p. 5 . This is expected to have no rating impact on existing deals.

TYPICAL STRUCTURE OF A FUNDED SYNTHETIC TRANSACTION

In synthetic transactions, credit risk transfer is typically achieved via credit default swaps or guarantees: the originator enters into a credit default swap or guarantee with the special purpose vehicle (SPV) where the SPV sells credit protection[4] on a reference portfolio of assets to the originator. In these structures, the proceeds from the sale of the Notes are usually invested in cash deposits or highly rated eligible investments (with proper protection[5] against market and liquidity risks) that serve only to compensate the originator from losses in the portfolio. These proceeds cannot therefore be used as a long-term funding[6] source for the originator, which limits the scope of synthetic securitisations.

Synthetic transactions can also have unfunded structures (i.e. Notes are not issued, and the protection buyer takes credit risk on the protection seller (as there is no funding for collateral) but the risk transfer is achieved with tranched Credit Default Swaps also on the liability side) or partially funded structures (i.e. risk transfer is achieved with tranched Credit Default Swaps as well as with some notes issuance on the liability side). Most synthetic transactions are structured to obtain regulatory and/or economic capital relief; this means that they need to comply with Basle II principles and need to be recognised as an effective risk transfer instrument by the relevant banking regulator.

Although it would theoretically be possible to create a synthetic transaction which mirrored the cash flow mechanics of a cash transaction, synthetic transactions often differ in many ways from their cash counterparts.

Table 1:

Comparison of Risks between Synthetic vs. Cash Transactions

	Synthetic	Cash
Credit Events / Default definition	Could be designed ad hoc for a given transaction. Could expose investors to less or more risks than in a cash transaction, depending on how it compares with the originator servicing practice in terms of default	Generally reflects the originator underwriting and servicing practice.
Loss Calculation / Loss definition	Could be designed ad hoc for a given transaction. Could expose investors to less or more risks than in a cash transaction, depending on how it compares with the originator NPL collection practice in terms of length of the observation period, inclusion of foreclosure costs, inclusion of accrued interest, level of subjectivity.	Generally reflects the originator NPL collection practice and include all costs associated with foreclosure and interest accrual.
Originator default	Generally not exposed to this risk. In cases where the originator is also the Credit Default Swap counterparty its default is a termination event under the CDS, so no additional payment is charged to the SPV. Certain structures in some jurisdiction may not include this risk mitigant.	It could affect the transaction in several ways: - servicing disruption - commingling - set-off - deterioration in asset performance Some of this risk may be mitigated by various provisions, such as liquidity lines, reserves, guarantees, back-up servicer, etc.
Note collateral	It could affect transactions for various reasons: - exposure towards credit risk of the collateral - exposure towards interest rate risk of the collateral - exposure towards market risk of the collateral - exposure towards the counterparty risk of the collateral deposit institution (or of the cash deposit bank) However in most synthetic transaction all these risks are mitigated with rating triggers, investment guidelines and/or with repurchase agreements	Not applicable

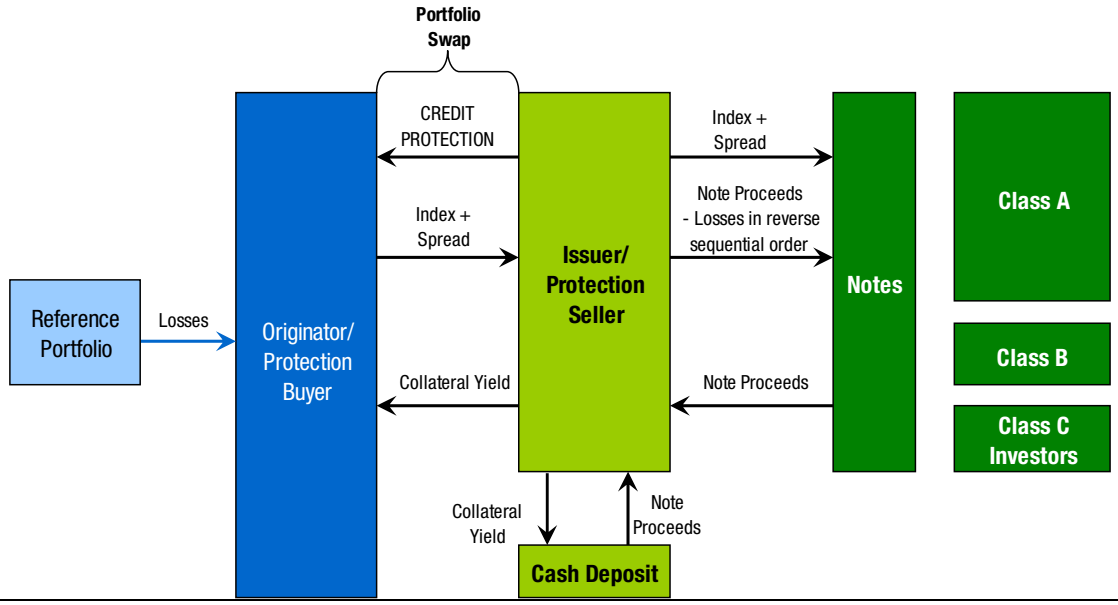
[4] It means that a counterparty guarantee itself against credit risk on a portfolio of assets, i.e. it will pay an ongoing premium and upon the occurrence of certain contingencies, generally losses on the reference portfolio, it will receive a payment from the SPV a payment for an amount equal to the loss experienced according to the loss definition.

[5] Such as a repurchase agreement with a highly rated counterparty, including a fixed price of par and rating triggers to replace the counterparty in case of downgrade at the cost of the counterparty.

[6] Here it is intended that cash is not available as a long term funding source as the SPV could need to make protection payment or amortise notes at any time, however in scenarios where losses are very low and reference portfolio amortisation is very long, cash will remain at the disposal of the account bank for a long time.

The chart below depicts one possible funded structure where the protection buyer pays Index + Spread and receives the collateral yield. There are also structures where the Collateral yield remains with the SPV and SPV receives a spread from the swap counterparty.

Chart 1:
Structure Chart



PORTFOLIO RISK ANALYSIS – CHARACTERISTICS OF SYNTHETIC TRANSACTIONS

Moody's analyses the reference portfolio on the basis of our methodology for the relevant asset type. When a default distribution is determined, recoveries associated with the defaults are also determined, on the basis of the asset-specific methodology[7]. The final outcome of the analysis is a default and loss distribution which reflects the characteristics of the securitised portfolio.

Credit Protection Payment

A notable feature of synthetic transactions is the varying definitions for default or loss that trigger the credit protection payment (i.e. the payment made by the Issuer/Seller to the Originator/Buyer). These definitions are critical to how default and recoveries are determined.

Some of the features of credit protection payment to consider are:

– Credit Event Definition. Typical credit events include some or all of the following:

  i) failure to pay after 90 days,

  ii) restructuring,

  iii) bankruptcy.

  Depending on what is considered as a credit event, the likelihood of Credit Protection Payments may change. A broad or "loose" definition means there is a higher probability of triggering defaults and subsequent losses for Noteholders, a narrow or "tight" definition makes it less likely a loss is suffered. Consequently Moody's adjusts its default/loss assumptions to reflect the definition of a credit event in the transaction documentation, applying a stress to the default rate assumed on the portfolio of assets as necessary[8].

[7] For a general example of methodology please refer to the Special Report "The Lognormal Method applied to ABS Analysis", please note that more detailed methodologies should be applied based on the specific asset type of the reference portfolio.

[8] A definition may be considered tighter or looser depending on the number and type of contingencies which will trigger a protection payment and by the level of subjectivity in their quantification. For reference please also see the Rating Methodology "Moody's Approach to Rating Granular SME Transactions in Europe, Middle East and Africa" for SME transactions and "Moody's Methodology for rating RMBS in Europe, Middle East and Africa (EMEA)" for RMBS transactions.

Moody's also requests information on the asset type (historical performance data, transition matrixes, internal rating masterscale) (reflecting the above definition), to be able to estimate the future credit protection payments (*see Sensitivity 3 in Appendix for an example of the potential rating impact*).

– Credit Protection Payment Timing: An Issuer/Seller payment could take place either:
  i) immediately after a credit event, for the full amount of the defaulted asset;
  ii) immediately after a credit event, for the full amount of the defaulted asset **minus** an estimate of future expected recoveries;
  iii) after a pre-defined, finite period ("valuation period") intended for collection activities equal to an amount equivalent to the actual loss over that period (i.e. no benefit for late recoveries);
  iv) after a pre-defined finite period intended for collection activities equal to an amount equivalent to the actual loss minus future expected recoveries (subject to third party verification); or
  v) when the final loss has been determined, for an amount equal to this loss (i.e. a full workout has occurred and cash holders of the defaulted loan have been paid).

  Depending on which of these is defined as Credit Protection Payment, Moody's may model a recovery lag, affecting only the timing of the credit protection payment. For ii), iv) and v), no recovery lag is needed as all recoveries (assuming the estimate is accurate) are already considered in the first credit protection payment (*see Sensitivity 4 in Appendix for an example of the potential rating impact*).

  For the others a recovery lag may be considered, depending on the asset type and jurisdiction. It should also be noted that adjusted recoveries (i.e. updated recovery amount following the end of the foreclosure procedure) increases the counterparty risk towards the protection buyer.

– Credit Protection Payment Ancillary Amounts: The issuer payment often includes ancillary amounts, such as missed interest, interest penalty and foreclosure costs. These are sometime defined as components of the realised loss. Depending upon the asset, the collection expenses may be significant and subject to considerable forecasting. Moody's consider these amounts in its analysis, adding them to the defaults occurring in the portfolio or increasing the severity of losses. The level of stress applied largely depends on the variability of these ancillary amounts, the presence of caps and their inclusion in the historical performance data (*see Sensitivity 3 in Appendix for an example of the potential rating impact*).

In most synthetic transactions, the structure allows for Adjustment Payments (also known as late recoveries), i.e. for additional payments to be made by either party when the final loss amount for a defaulted asset is determined and differs from what was estimated in the corresponding credit protection payment, or to correct a mistake[9] regarding credit events and credit protection payment. It is important that the structure allows sufficient time after the expected maturity of the credit default swap for these Adjustment Payments to occur. Adjustment Payments increase the counterparty risk towards the CDS counterparty.

Moral Hazard

Most of the calculations in a synthetic transaction, including the determination of issuer payments, are performed by the protection buyer in its capacity as calculation agent. Thus there is an obvious conflict of interest that needs to be addressed. The risk is that the calculation agent may inflate the amount of losses or more conservatively estimate the amount of recoveries in an effort to increase the amount it receives in its capacity as protection buyer. Again, the importance of the credit definition is noted, a more objective definition will reduce, but not remove, this risk. Moody's expects some of the following structural features to be in place to mitigate this risk:

– Verification of each credit event by an independent third party.
– Verification of each credit event by an independent third party when certain triggers are hit (for example when losses exceed a pre-defined amount).

[9] For example when discovered in the loss verification process

- Verification of each credit event by an independent third party at the request of a trustee
- Verification of each credit event with a loss higher than a defined amount.
- Regular verification of a sample of credit events by an independent third party.
- Originator/Buyer retains an interest in each loan.
- Workout team has Chinese walls so they are unaware of loans in pool vs still on Balance Sheet

The preferred method, or combination thereof, will depend in part on the credit rating and the experience of the calculation agent.

The verification agent will verify, inter alia:

- That a credit event notice has been given and that the relevant credit event in respect of a reference obligation has occurred and the amount of outstanding indebtedness.
- The realised loss of a liquidated reference obligation at the end of the work-out period as calculated by the calculation agent, taking into account the recovery received (or defined) and the appropriate amount of expenses.
- The accuracy of the determination of estimated losses/recoveries).
- The correct determination of the work-out period for any liquidated reference obligation for which a realised loss has been notified.
- The contents of each portfolio report and investor report.
- That all eligibility[10] and replenishment criteria were met for each reference obligation on the date on which the reference obligation was included in the reference portfolio and/or on the date when the default occurred.
- Occurrence and accuracy of Adjustment Payments, when needed.
- Servicing and work-out procedures in line with defined servicing standard.

CASH FLOW FEATURES OF SYNTHETIC TRANSACTIONS

Interest payments: In synthetic transactions, the note interest payments are guaranteed by the protection buyer. Specific provisioning is often included to reduce the credit linkage with the CDS counterparty (see section below). However, **in most synthetic transactions, the Terms and Conditions of the Notes envision interest payments only on non-written off Notes** (i.e. the interest promise explicitly refers to interest on non-written off tranches only). Therefore, non-payment of interest on the portion of a note which has been written off is not considered an interest default for that note. **This may be significantly different to a cash transaction** and is considered in the cash flow analysis. To clarify, in cash deals the interest is usually payable on the full balance of the note regardless of defaults, principal losses that occur at redemption/legal final. In synthetic deals the notes are written down ongoing as defaults/losses occur. As a result the coupon as the payment calculation is based on performing balance[11] only.

Loss allocation: Losses are typically allocated to the structure in reverse sequential order, starting from the most junior Notes. The loss amount is generally defined as the Credit Protection Payment (see above). Notes to which losses are allocated are partially written down in the amount of the Credit Protection Payment. A Note Reinstatement may occur if there are further recoveries and/or adjustment payments after the allocation of Credit Protection Payment Note write-downs. As a consequence of a Note reinstatement the amount of missed interest for that amount may be repaid by the CDS counterparty when the reinstatement occurs. Certain structures where an excess spread ledger is incorporated will be able to absorb losses. (See below for further details of how this feature works).

[10] This is a strength compared with cash transactions where criteria are often not represented by eligibility but some of them are only covered by representation and warranties.

[11] It could be an amount higher than the performing balance when excess spread is used to cover losses and Notes are not immediately amortised.

Quantitative Rating methodology

In computing the quantitative ratings on the notes, Moody's will override the promise set forth in the legal documentation and will assume that the interest due on the notes in each period is the rate of interest of the note computed on a note notional which is not diminished by the losses on the portfolio. At the same time, the principal due on the note will be equal to the initial principal outstanding of the note.

The assumptions above entail that, all other conditions being equal, Moody's rating on a transaction will be identical whether the transaction is cash or synthetic.

Note Amortisation: In synthetic transactions, non-written down Notes may amortise in different ways:

- As bullet at the CDS expected maturity date,
- According to a scheduled amortisation plan,
- As pass-through, on the basis of the portfolio amortisation.

With pass-through amortisation, the amount of Notes amortised is generally equal to scheduled and unscheduled principal payments on the portfolio (with the exception of revolving transaction where for the replenishment period portfolio amortisation is used to include new assets in the reference portfolio). For transactions with available synthetic excess spread, the Notes are further redeemed on an ongoing basis or at maturity by an amount equal to the synthetic excess spread used to cover losses. Recoveries on loans affected by a Credit Event are generally also considered as principal amounts available for the amortisation of the Notes.

Notes affected by losses are written down when the loss occurs, therefore they will not amortise further (except when there is a Note Reinstatement).

Synthetic Excess Spread: A growing number of synthetic transactions include excess spread ledgers. The synthetic excess spread ledger works as a first loss piece to absorb losses up to a certain amount.

The structures we have analysed so far have presented **various types of excess spread ledger mechanisms that provide various levels of protection to investors** depending on how they are implemented.

The most common Synthetic Excess Spread mechanisms seen are:

- Use-it or Lose-it: Excess spread is available, at a fixed amount (generally a percentage of the non-written off Note balance or of the performing portfolio), for a given period (generally one quarter or one year). If losses over that period are lower than the synthetic excess spread ledger, it absorbs all of them, which means that Notes do not suffer any loss. Surplus synthetic excess spread leaks out, i.e. is virtually[12] returned to the protection buyer (also usually the originator/servicer). If losses over the period are higher than the excess spread ledger, it will only cover a cumulative balance equal to the maximum ledger. The remainder will start depleting the performing Note balance (and not be recovered by future excess spread). The main weakness of this mechanism is its sensitivity to default timing over certain periods, and also obligor concentrations which may arise as a consequence of temporary economic stresses or payment concentration (for example if the portfolio includes a lot of bullet loans which are all maturing in the same period). *See Sensitivity 1 in Appendix for an example of the potential rating impact.* One possible variation is synthetic excess spread which is available only to cover losses resulting from credit events of a given period.

[12] Please note that excess spread is a pure accounting element, there is no real cash component.

– Trapped: Synthetic excess spread is available at a fixed amount (generally a percentage of the non-written off Notes or of the performing portfolio). In each period, to the extent not used before, it accumulates in a specific ledger. Various options are used to either virtually trap all, or a certain portion the available synthetic excess spread. Where partially trapped it is usually in accordance to certain rules (for example the target amount of the ledger could change over time). In certain instances the ledger is available from closing and is refilled by excess spread if needed. The main strengths of this mechanism are that it protects the structure from default spikes and creates additional credit enhancement which increases the protection to the Notes over time. *See Sensitivity 2 in Appendix for an example of the potential rating impact.*

Replenishment: A significant number of synthetic transactions have a replenishment period, during which new exposures can be added to the reference portfolio. The selection of the new assets should satisfy various 'eligibility' criteria (see the box below and the Special Reports "Moody's Approach to Rating Granular SME Transactions in Europe, Middle East and Africa" and "Moody's Methodology for rating RMBS in Europe, Middle East and Africa (EMEA)" for more details). From a cash flow perspective replenishment could be allowed in different ways:

– Using all the "risk-free" protection amounts[13] resulting from the amortisation of the portfolio (scheduled and unscheduled payments)
– Using only a portion of the "risk-free" protection amounts, e.g. resulting from unscheduled payments or determined according to a pre-defined portfolio exposure vector

Amounts resulting from losses covered by excess spread and/or from recoveries are also sometimes used to increase the allowed replenishment amount.

The different replenishment mechanisms have an impact on both the amount of risk that Noteholders are exposed to, and the determination of the Notes' average life.

[13] i.e. amounts resulting from a positive difference between notes and portfolio when assets amortise or prepay.

Assessing the Risk of Replenishable Transactions

Many EMEA synthetic transactions include a replenishment period. When assessing this feature, it is crucial to evaluate the replenishment criteria as over time the pool characteristics can change significantly from the initial pool. This is particularly important in both SME and RMBS transactions where the risk of adverse selection for SMEs and mortgage loans is typically higher than for e.g. consumer transactions. This is mainly due to the larger amount of information on single debtors available to the bank which is possibly not fully captured by transaction portfolio criteria.

Replenishment conditions are usually designed to maintain the quality and characteristics of the initial reference portfolio. This is typically obtained through concentration limits[14] (e.g. for SMEs: top 1, top 10, average size, single industry, single region, proportion of secured loans, etc.; and for RMBS: property type, current LTV, loan purpose, occupancy type, regional and borrower concentration, etc), seasoning and amortisation profile criteria and with average rating replenishment criteria. As a result, the default distribution of the replenished portfolios should be similar to that of the initial portfolio.

A close analysis of the average rating replenishment criteria is fundamental to understanding if a transaction could suffer adverse selection or migration during the replenishment period. One problem with weighted average criteria is the prospect of "barbelling", whereby a portion of the portfolio may be of very good credit quality whilst the remaining portion may be quite poor. Therefore, Moody's likes to see both weighted average portfolio criteria as well as criteria which govern a single's obligor's characteristics with respect to e.g. total exposure size, internal rating scores, or property and employment type. Typical average rating replenishment criteria are shown below.

Moody's makes adjustments on the default rate for replenished portfolios depending on the wording of the average rating replenishment criteria. Some of the most common criteria in SME transactions are:

- The weighted-average rating of the **portfolio after replenishment** must be equal to or better than the weighted-average rating of the portfolio **at closing**.
- The weighted-average rating of the **replenished portfolio** must be equal to or better than the weighted-average rating of the portfolio at closing.
- The weighted-average rating of the **portfolio after replenishment** must be equal to or better than the weighted-average rating of the portfolio **before replenishment**.
- The Moody's Metric[15] test is passed. (for CDOROM based).

The most common weighted average criteria specific for RMBS transactions are:

- The weighted-average current Loan-to-Value (LTV) of the **portfolio after replenishment** must be equal to or better than the weighted-average LTV of the portfolio **at closing**.
- The weighted-average seasoning of the **portfolio after replenishment** must be equal to or better than the weighted-average seasoning of the portfolio **at closing**.
- The concentration of top 20 borrowers in the **portfolio after replenishment** may not exceed a certain level.

Moody's carefully evaluates these replenishment criteria and adjusts the default assumption for the newly added loans, depending on the strength of the trigger.

[14] For reference please also see the Rating Methodologies "Moody's Approach to Rating Granular SME Transactions in Europe, Middle East and Africa" for ABS SME transactions and "Moody's Methodology for rating RMBS in Europe, Middle East and Africa (EMEA)" for RMBS transactions.

[15] "Managed Synthetic CDOs: Moody's CDOROM™ Guidelines".

Advance Payments

In synthetic transactions, investors are generally not exposed to the insolvency risk of the credit protection buyer. To achieve this various structural features are envisaged, among which is prefunding of premium payment. Synthetic transactions are usually structured so that a failure to pay under the credit default swap by the credit protection buyer or the bankruptcy of the credit protection buyer is defined as a credit default swap termination event with no Mark-to-Market due to either party under the swap[16].

After the termination of the credit default swap, no additional credit events can occur. However, the outstanding defaulted reference obligations, for which a credit event notice was delivered before the termination of the swap, still need to be worked out and the realised loss of these outstanding defaulted reference obligations needs to be determined. Therefore, following the swap termination, the SPV retains collateral in an amount equivalent to the defaulted balance only for the time needed to determine the realised losses. Where the early termination of the credit default swap is due to the insolvency of the credit protection buyer, the losses on these outstanding defaulted reference obligations should be appraised by an independent party.

To guarantee that the SPV is able to make senior payments and interest payments on the Notes, the credit protection buyer is typically obliged to pay the credit default swap premium for two payment dates in advance upon loss of a **P-1** or **A2** rating[17].

Collateral and Counterparty Risk in Funded Synthetic Transactions

For funded synthetic transactions, the proceeds from the issuance of the Notes are used to purchase eligible collateral which will be available to make floating payments under the credit default swap between the SPV and the credit protection buyer or to pay principal on the Notes. This removes the buyer's credit exposure to the seller.

There are two main ways of investing the proceeds from the issuance of the Notes in eligible collateral:

(i) crediting the cash to a bank deposit account; or

(ii) investing the proceeds in eligible fixed-income securities (and entering into a repurchase agreement). In both cases the cash or securities account will be in the name of the SPV.

If (i), Moody's considers the rating of the institution to which the cash will be credited and evaluates the mitigants in place if the credit quality of that institution deteriorates. To be able to achieve the highest rating (**Aaa**) on the Notes the deposit bank needs to have a Moody's Long-Term Deposit rating of **A2** and a short term rating of **P-1** or just a Long Term Deposit rating of **A1**[18] and a replacement trigger: if the deposit bank loses the required rating, the collateral will be withdrawn from that bank and deposited with a bank with the required rating within 30 days after the downgrade (and subject to similar rating triggers) at expense of deposit bank. If no rating trigger is in place, the maximum achievable rating of the Notes will not be higher than that of the deposit bank.

If (ii), Moody's expects the issuance proceeds to be invested in securities of appropriate credit quality that are not exposed to market risk (in case the collateral needs to be liquidated to enable the SPV to make payments under the credit default swap or the Notes). If this is not the case then the maximum achievable rating of the Notes will be determined taking into consideration the rating of the collateral.

[16] In certain transactions (generally CDO transactions) termination payments are due and rank junior to the waterfall if in favour of the protection buyer.

[17] In transactions with exposure to market-value risk upon liquidation of collateral tighter triggers may be necessary to achieve **Aaa** rating.

[18] Different trigger levels could be used when the cash held in the account is a small portion of the Notes outstanding and is held for a limited period. Please refer to the Rating Methodology "The Temporary Use of Cash In Structured Transactions: Eligible Investment Guidelines" for further details.

Table 2:

Maximum Maturity of Eligible Investments Minimum Long- and Short-Term Ratings for Eligible Investments

	Aaa-Rated Securities	Aa2-Rated Securities
One Month	**A1** or **A2**/**Prime-1***	**A3** or **Prime-1**
Three Months	**A1** and **Prime-1**	**A2** or **Prime-1**
Six Months	**Aa3** and **Prime-1**	**A1** and **Prime-1**
Over Six Months	**Aaa** and **Prime-1**	**Aa2** and **Prime-1**

** Please note that this table is different from the one published in the Rating Methodology paper "The Temporary Use of Cash In Structured Transactions: Eligible Investment Guidelines" as that referenced Rating Methodology applies to transactions where only a fraction of issuance is invested (e.g. reserve fund or monthly collections).*

A reduction of the exposure of collateral to market risk could be achieved, for example, by limiting the maturity of the securities (generally within a payment period, see example in the table above[19]) or by using securities with a longer maturity but an appropriate repurchase agreement with suitably rated counterparties.

In instances where note proceeds are invested in long-term securities Moody's will carefully review the terms of the repo or put agreement. To be able to rate notes up to the highest possible rating (**Aaa**), we would expect to see counterparty replacement within 30 days at loss of **A2**/**P-1** (or **A1** if the counterparty does not have a short term rating).

Alternatively, proceeds could be invested in Money Market funds with the appropriate credit and market risk (**Aaa**/**MR1+**). The rating of the depositary bank will also be expected to be **P-1** with a 30 day replacement trigger if the depositary is downgraded below this level.

In instances where the coupon on the Notes is not guaranteed by the protection buyer but is directly linked to the yield of the cash or securities investment, it would be expected that the relevant documentation ensures that the yield on the assets should be equal to the base rate on the Notes (this assumes that the margin/spread is paid by protection buyer) and that any interest rate, base rate or currency mismatch is excluded or covered by an highly rated counterparty which would be subject to Moody's swap criteria.

[19] Cfr. For more details see the Special Report "The Temporary Use of Cash In Structured Transactions: Eligible Investment Guidelines".

Case Study: The Rating Impact of Structural Features in Synthetic Transactions

This section provides an example of the sensitivity of ratings and tranching to structural features of synthetic transactions.

The characteristics of the assets analysed and the structure are shown in Table 3 below. Table 4 below show the impact of various structural features to the amount of subordination needed below a **Ba2** tranche in the two scenarios A and B.

Table 3:

	Scenario A	**Scenario B**
Mean Default	2% (equivalent to a Baa3/Ba1 rating);	5% (equivalent to a Ba2/Ba3 rating)
MILAN Aaa CE equivalent	4.25%	23.45%
-Coefficient of Variation (stdev/mean)	40%	60%
-Recovery Rate	40% with lag of 1.5 years	40% with lag of 1.5 years
Yearly prepayment rate	10%	10%
Timing of Default	As in chart 2	As in chart 2
Asset amortisation	Linear over 5 years	Linear over 5 years
Liability amortisation	Sequential	Sequential
Class A rated **Aaa, with size of**	95%	75%
Class B rated **Ba2**	variable amount and, if necessary, an equity tranche	variable amount and, if necessary, an equity tranche
Yearly excess spread	0.80%	0.80%

Chart 2:
Default Timing

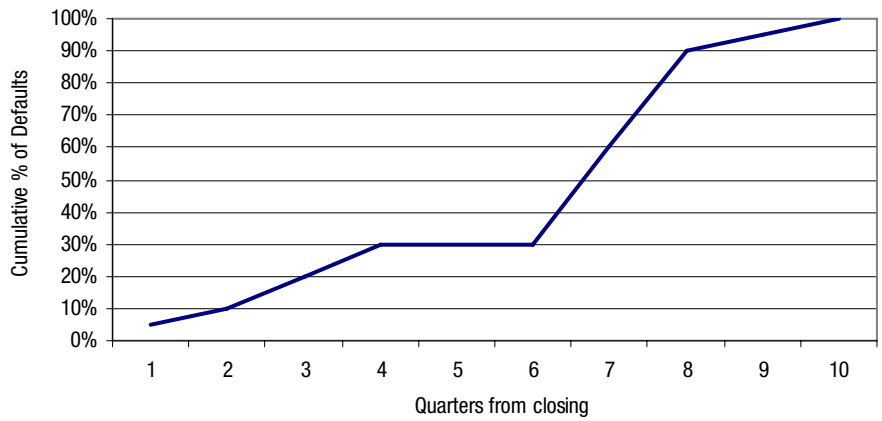


Table 4:

Subordination of a class B tranche rated Ba2 under various possible structures

	Scenario A	Scenario B
Sensitivity 0 – Cash Transaction with Dutch* Swap	0.6%	1.5%
Sensitivity 1 – Synthetic Transaction with "Use-it-or-lose-it" excess spread	0.6%	1.7%
Sensitivity 2 – Synthetic Transaction with fully trapped excess spread	0.0%	1.3%
Sensitivity 3 – Synthetic Transaction with "Use-it-or-lose-it" excess spread and stress on mean default of 20% to account for credit events not reflected by the performance information provided (or for ancillary amounts included in the credit event definition)	0.9%	2.5% (please note that in this scenario class A becomes **Aa1**)
Sensitivity 4 – Synthetic Transaction with "Use-it-or-lose-it" excess spread and credit protection taking place only at end of recovery period (recovery lag removed)	0.3%	1.5%

** Interest rate swap common in the Dutch market, and sometime also in other EMEA markets, where the payments are equivalent to SPV paying interest received on the assets and receiving from the swap coupon on Notes plus a certain excess spread.*

RELATED RESEARCH

For related research, please refer to the following reports:

Rating Methodology

- Understanding The Risks In Credit Default Swaps, March 2001 (SF10197)
- Cash Flow Analysis in EMEA RMBS: Testing Structural Features with the MARCO Model, January 2006 (SF58290)
- Moody's Approach to Rating Granular SME Transactions in Europe, Middle East and Africa, June 2007 (SF90890)
- The Lognormal Method Applied to ABS Analysis, July 2000 (SF8827)
- Moody's Methodology for Rating RMBS in Europe, Middle East and Africa (EMEA), October 2008 (SF141262)
- The Temporary Use of Cash In Structured Transactions: Eligible Investment Guidelines (The), December 2008 (SF149666)

Special Report

- Understanding Collateral Risks of Funded Synthetics in CDOs, June 2006 (SF76253)
- Credit Considerations of Synthetic Mortgage-Backed Securitisations in Europe, November 2002 (SF16746)
- Triggers in Securitisation, March 2008 (SF8229)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

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