

Residential Mortgage
EMEA
Criteria Report

EMEA RMBS Cash Flow Analysis Criteria

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Related Research

- See Appendix 1

This criteria report replaces and supersedes Fitch's criteria report entitled "A Guide to Cash Flow Analysis for RMBS in Europe", dated 20 December 2002.

Contents

Introduction	1
Fitch's Cash Flow Modelling Criteria: Standard Portfolio Assumptions	2
Commingle Risk and Portfolio Variations	17
RMBS Structural Features	18
Standard Scenarios Recap	20
Appendix 1: Related Research	22
Appendix 2 - Rising CPR Assumptions for European RMBS	23
Appendix 3 - Prepayment and Delinquency Assumptions in UK Non- Conforming RMBS	26

Introduction

This report updates Fitch Ratings' approach to analysing "cash" residential mortgage-backed securities (RMBS). Cash RMBS are securitisation notes that rely on the cash flows generated by the underlying mortgage loans to meet the issuer's interest and principal payment obligations under the notes. This report also considers the agency's approach to analysing "synthetic" RMBS transactions, which involve synthetic excess spread (or, more generally, payment obligations that are not exclusively driven by the portfolio losses).

While the "core" Fitch approach has not changed since the publication of the first cash flow analysis criteria in 2002, some structural innovations have been introduced in the EMEA RMBS industry and this report describes in detail their credit impact and the relative criteria developed by Fitch. Below is a summary of the key revisions since the release of "A Guide to Cash Flow Analysis for RMBS in Europe", published 20 December 2002:

- Details on alternative default distributions applied.
- Details on standard provisions for RMBS with revolving periods.
- Details on standard RMBS structural features.

This report focuses primarily on the structural analysis of the rated securities, while the methodological details of the analysis of the underlying portfolio are detailed in the country-specific residential default model reports (available at www.fitchratings.com and listed in Appendix 1 hereto). Readers should note that this report should be read in conjunction with the most recent country-specific criteria, which may contain details on country-specific deviations from the general modelling approach described in this report.

This report should be read in conjunction with the report titled "EMEA Cash RMBS Structural Overview", dated 6 May 2009 and available at www.fitchratings.com, which includes a detailed analysis of the most common structural features of EMEA "cash" RMBS and represents useful background information to support this criteria report.

Role of Cash Flow Analysis in the Cash RMBS Rating Process and Meaning of the Rating

The main purpose of the Fitch cash flow model is to determine, based on the outputs of the country-specific residential default model and the stress scenarios defined in this report, whether the various classes of notes in a transaction receive payments of principal and interest in accordance with the terms of the transaction documentation upon occurrence of certain scenarios. Generally, to determine the rating of a given tranche of notes Fitch analyses a series of stress scenarios to determine whether the payment of interest and principal under such notes is fulfilled in all stress scenarios. However, while the cash flow model output is an important consideration in determining the final rating, ratings are ultimately assigned by a Fitch credit committee, which also considers other quantitative and qualitative factors.

Building Blocks of RMBS Cash Flow Analysis

The variable that most affects the cash flow analysis is the expected performance of the underlying mortgage collateral, mainly in terms of defaults and loss severity

(or loss given default) - aspects that are discussed in detail in the country-specific default model papers (see *Appendix 1* hereto).

The effects of a potential disruption to the portfolio performance on the noteholders can be mitigated by including some form of credit enhancement (CE) to the notes, ie, by providing the notes with “extra-protection”, either in the form of external or internal support. Fitch notes that in EMEA cash RMBS transactions rated by the agency CE may consist of a combination of some or all of the following: excess spread (ExS), subordination amongst different classes of notes, over-collateralisation of assets over liabilities, cash reserves (or reserve funds) and, in some instances, support provided by third parties (such as, eg, the hedge counterparty).

One of the primary purposes of the cash flow analysis is to determine the amount of credit support that is provided by ExS, which is also driven by prepayments and defaults as well as the effectiveness of the structure to utilise ExS to mitigate any underperformance of the portfolio.

Another purpose of the cash flow analysis is to test whether the “liquid” forms of CE (eg, the ExS and cash reserve) are sufficient to compensate for temporary liquidity shortfalls caused, for example, by delinquent mortgages or adverse interest rate movements. Additional liquidity support may be necessary in certain scenarios in order to ensure that the issuer is able to meet its interest payment obligations under the notes. This can take the form of external third-party liquidity facilities or internal liquidity by way of “borrowing principal funds” to pay interest.

The agency models the cash flowing from the mortgage portfolio and its reallocation within the structure to pay interest and principal under the notes in accordance with the specific priority of payments (or “waterfall”) set out in the terms and conditions of the notes. The agency has developed a proprietary cash flow model that can incorporate all of the structures presented so far on the EMEA RMBS market and whose general characteristics are described in the report titled “*EMEA Cash RMBS Structural Overview*”, dated 6 May 2009 and available at www.fitchratings.com.

Fitch’s Cash Flow Modelling Criteria: Standard Portfolio Assumptions

Fitch employs a proprietary cash flow model to simulate the cash flows from the portfolio and from the other parties involved in the transaction (eg, the swap counterparty) and their reallocation in accordance with the specific transaction waterfall. The following section provides an overview of Fitch’s standard assumptions regarding the individual risk factors affecting the cash flows generated by the portfolio and the costs related to the servicing of the portfolio and the issuer.

As a general principle, if the transaction includes structural features that make one or more of the stress assumptions described below beneficial to the notes, Fitch may consider alternative stress scenarios (see, for example, the section titled *Interest Rate Scenarios for Transactions Including Interest Rate Caps*) or scenarios where the stress does not apply (see, for example, the section titled *Swaps Covering the Cost of Carry of Delinquencies*). Transaction-specific deviations from the set-up described in the following three sections will be disclosed in presales and new issue reports.

Portfolio Principal Amortisation Profile

To model the principal pay-down of a portfolio Fitch uses a proprietary model that calculates the amortisation of the loans according to their terms, based on the loan-by-loan information the agency is provided with. The expected principal amortisation is calculated for each loan assuming zero prepayments and no defaults or delinquency: in Fitch’s model, prepayments, delinquencies and defaults are “overlaid” on the scheduled principal pay-down of the portfolio.

In case of revolving transactions (see, for example, the section titled *Revolving Periods*), Fitch takes into account the impact that this feature might have on the portfolio principal amortisation profile.

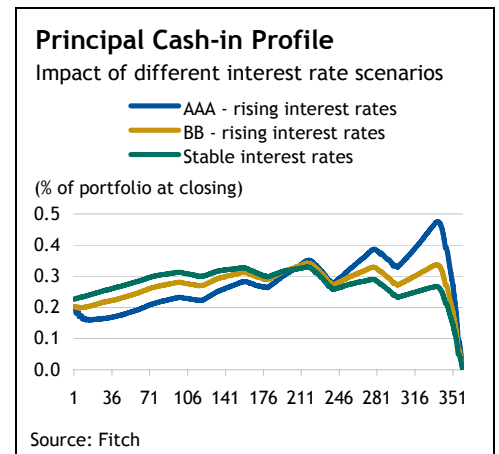
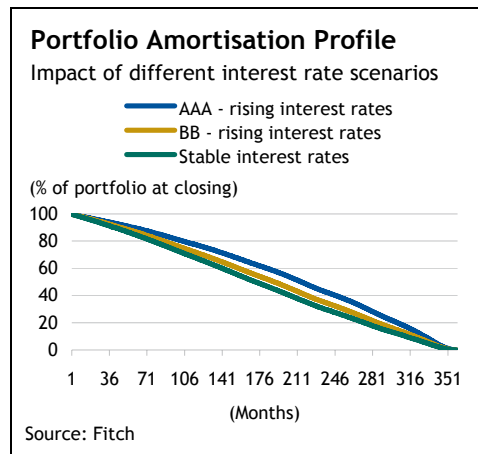
Common principal amortisation types for EMEA RMBS transactions include:

- **Constant Principal:** a constant amount of principal is repaid in each instalment. In practice, the loan amount is divided by the number of instalments in order to determine the principal payment due on each loan payment date;
- **Actuarial Amortisation (Constant Instalment):** the principal due on each instalment is calculated according to a formula that ensures that the instalment paid by the borrower (comprising a principal and an interest component) is constant over time. For floating rate loans (where the instalment amount cannot be fixed, unless interest rates are stable throughout the life of the loan), the schedule of the principal payments can be either set at the loan inception and based on the interest rate levels as of the loan's granting or, reset at each loan payment date and based on the then current interest rate levels. In the second case, the loan's principal amortisation speed will depend on the interest rate trend; it will decrease in a rising interest rate environment and increase in a falling interest rate environment;
- **Floating Maturity Loans:** these are floating rate loans whose instalments (comprising an interest and a principal component) are calculated according to the actuarial amortisation formula described above, but which are capped at a certain amount. Any "extra payment" due to interest rate increases will add one or more instalments to the loan and thereby increase its maturity, while decreases in interest rates will shorten the loan's maturity. Most of these loans envisage upwards adjustments of the instalment cap if interest rates increase above certain thresholds;
- **Increasing Instalment Amortisation:** consists of an alteration of the actuarial amortisation formula which has the effect of producing increasing instalments (assuming stable interest rates). From a principal perspective, increasing instalment loans amortise more slowly than loans with actuarial amortisation;
- **Loans with Flexible Maturities:** under certain conditions (eg, no past arrears on the loan) the borrower has the option of changing the maturity of the loan;
- **Interest Only or Bullet Amortisation:** the full amount of the loan is repaid at maturity and during the life of the loan the borrower will pay only interest;
- **Micro-Bullets Amortisation:** the borrower has the option to choose when to repay the loan's principal according to a certain flexible schedule (eg, 5% of the principal must be repaid every two years, with no specification of the payment dates).

Some originators give their borrowers the option to switch from one amortisation type to another or, more commonly, combine the repayment features described above (eg, a loan that is half constant instalment and half bullet).

Considering the increasing complexity of the amortisation of loans in certain jurisdictions, Fitch takes particular care to understand the amortisation mechanics of the products included in the portfolio. In particular, the agency expects originators to be able to provide models showing the non-standard amortisation options they offer to their borrowers.

As discussed above, interest rate scenarios can have an important role in determining the principal amortisation profile of the portfolio, and this aspect is taken into consideration in Fitch's models. The following two charts show the aggregate principal amortisation profile and the issuer's principal receipts for a floating rate portfolio where all the loans amortise according to the actuarial formula, with principal reset upon interest rate change.



The first chart shows the effect of ‘AAA’ and ‘BB’ increasing interest scenarios on principal amortisation, illustrating the reverse correlation between interest rate trends and principal repayment speed; the second chart shows the impact on the principal funds available to the issuer and the consequent implications for its liquidity position.

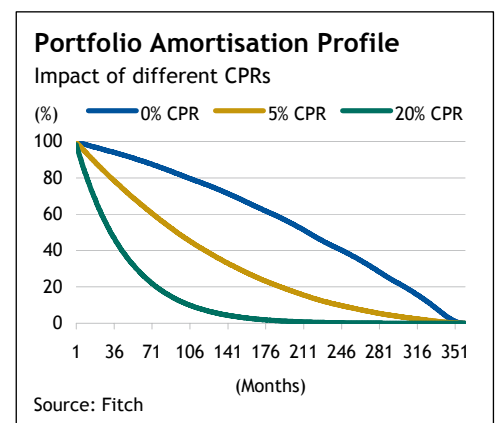
The line showing the portfolio amortisation in a stable interest rate environment allows one to appreciate how the principal amortisation of the portfolio changes if the floating loans amortise according to the actuarial amortisation, with no principal re-set (the principal schedule is defined at loan inception and based on the then current interest rate level, ie, assuming a stable interest rate environment).

As stated above, Fitch’s model overlay prepayments, delinquencies and defaults on the portfolio’s scheduled principal amortisation. It is worth noting that in those scenarios where prepayments, defaults and delinquencies are high, the portfolio amortisation will be driven more by these events than by the product amortisation features designed by the originator.

Prepayment Rates

For the purposes of RMBS cash flow modelling, Fitch makes jurisdiction-specific assumptions on prepayment rates, ie, voluntary early principal redemptions excluding scheduled principal and unpaid principal due to arrears or defaults (a different definition is used for UK Non-Conforming transactions, as specified in *Appendix 3* hereto). Fitch’s prepayment rate assumptions are expressed as a percentage of the current total portfolio principal outstanding (gross of the scheduled principal payments). These assumptions consist of constant annualised rates and therefore are usually referred to as “constant prepayment rates” (CPRs).

The prepayment rate is a key variable in determining the lifetime volume (in cash terms) and periodic percentage of ExS generated by the structure: the faster the amortisation of the portfolio, the lower the lifetime volume of ExS available for noteholders. In addition, if the loans paying the highest coupons are the first to prepay, high prepayments would also lower the portfolio weighted average spread (WAS) (unless guaranteed by a total return swap,



which in turn however creates counterparty dependency; see section titled *Swap Modelling* - and therefore the ExS level (see the section titled *WAS Compression Assumptions* for details on Fitch's assumptions in this respect).

The chart on this page shows the effect of different CPR assumptions on the 'AAA' rising interest amortisation profile of the portfolio analysed in the two charts under the section titled *Portfolio Principal Amortisation Profile*.

As discussed in the previous paragraph, it is evident how in high prepayment environments the CPR assumption becomes the main driver of the portfolio principal amortisation profile. For example (see the diagram titled *Portfolio Amortisation Profile*), with a prepayment rate of 20% per annum, almost 80% of the portfolio would repay within six years after closing, when only 13% would have repaid according to the schedules defined by the loan agreements (0% CPR). The weighted average life of the pool, around 10.5 years in a 0% CPR environment, becomes 7.5 years with 5% CPR and 3.75 with 20% CPR.

Prepayment Assumptions - High Prepayments

The level of prepayments experienced in Europe varies significantly across countries, and depends on a series of variables analysed in detail in the report "*Diversity in Union - Prepayment Drivers in European RMBS - update*", dated 11 October 2007 and available at www.fitchresearch.com. That report also summarises the empirical evidence available from the securitised RMBS portfolios monitored by Fitch within European jurisdictions.

Based on the empirical prepayment rate evidence in each jurisdiction, Fitch has determined the rating-specific rising prepayment stresses detailed in *Appendix 2* hereto and in the country-specific RMBS criteria papers (see *Appendix 1* hereto). In most jurisdictions, the applied prepayment stress increases for more severe rating scenarios.

Except for UK non-conforming transactions (see *Appendix 3* hereto), Fitch models a "ramp-up" period of two to five years for unseasoned transactions, as empirical evidence shows that the propensity to prepay is low in the years immediately after origination - owing in part to incentive rates or prepayment penalties.

The prepayment rate is applied to the performing balance (ie, exclusive of defaulted and delinquent loans) before any scheduled principal payment; therefore, the total amount of the prepaid portfolio in Fitch modelling scenarios declines as the rate of defaults and delinquencies rises.

The rising prepayment stress assumptions may be adjusted on a case-by-case basis should an individual lender's prepayment experience differ significantly from the one analysed by Fitch in the relevant jurisdiction. Deviations are also possible where the transaction documentation includes specific loan repurchase provisions (eg, repurchase of loans if the lender wants to re-negotiate the terms of the agreement with the borrower, further advances, etc.) or where the specific products offered by a lender have a higher prepayment propensity. In all cases, adjustments will be disclosed in presales and new issue reports.

Testing Low Prepayment Environments

Although generally high prepayment scenarios are more stressful for the notes (owing to the reduced volume of ExS), there may be circumstances under which low prepayment rates could pose an additional risk factor. This is the case, for example, for the "bullet" notes (which are redeemed in full at maturity and normally have much shorter terms than those of the underlying portfolio) since it is necessary to accumulate sufficient cash in time to meet the repayment of such bullet notes.

Similarly, low prepayment scenarios might be more stressful if the structure includes ExS trapping mechanisms to accelerate the notes paydown that are linked to the portfolio CPR, or if the most senior notes are pass-through but have a shorter

legal maturity than the other notes (ie, the structure relies on the expectation that the principal portfolio paydown - before the most senior notes' legal maturity - will be enough to repay them).

For these reasons, Fitch will run low prepayment scenarios, to be defined based on Fitch's expectation of future CPR trends as well as the historical CPR levels for the securitised product types in the relevant jurisdiction and the level of the CPR-related triggers in the structure, if any.

Weighted Average Spread (WAS) of the Portfolio

Fitch's cash flow model can analyse the trend of the portfolio WAS over the notes' index in the absence of hedges and under different interest rate scenarios. In particular:

- the floating-rate portion of the portfolio is modelled by bucketing the loans' margin over the index of the notes into eight buckets (ie, eight groups of loans with similar margins);
- for those loans where a basis risk or a reset risk is present, the margin over the index of the notes includes Fitch's assessment of these risks (see the section titled *Analysis of Transactions Where the Interest Rate Risk is not Hedged*);
- the model can take into account the fact that the floating loans' margin can change over time, due to the terms of the loan agreement or to the expected increase/decrease of the basis or reset risk;
- the fixed-rate portion of the portfolio is modelled by bucketing the loans' coupons into eight buckets (ie, eight groups of loans with similar coupons);
- the model can take into account the presence of loans that start fixed and then compulsorily switch to floating or vice versa (referred to in the market as "mixed loans") or loans where the borrower has one or more options to switch from fixed to floating or vice versa (referred to as "modular loans");
- for modular loans, considering the monotone shape of Fitch's standard interest rate scenarios (see "*Interest Rate Assumptions*"), the agency assumes that borrowers will choose a fixed rate in a rising interest rate scenario, choose a floating rate in a decreasing interest rate environment and remain with their current interest rate option in a stable interest rate environment.

WAS Compression Assumptions

Fitch assumes that the loans paying the highest coupons are the first to default or to prepay. In particular, Fitch's models allocate all of the defaults and a certain percentage of the prepayments to the highest coupon bucket of the portfolio; in the absence of any evidence to the contrary, the percentage assumed for prepayments is 80% (ie, 80% of prepayments are attributed to the highest-margin bucket). As the assumed prepayment rate is higher for higher rating scenarios (see the section titled *Prepayment Assumptions*), the extent of WAS compression is also higher for higher ratings.

The magnitude of WAS compression will not only depend on the level of prepayments and defaults but also on the dispersion of loan margins in the portfolio. A relatively homogenous pool will likely experience less margin compression than a portfolio with a wide range of margins.

The WAS compression will reduce the ExS "percentage size", unless otherwise guaranteed by a total return swap (for more detail see the sections titled *Swaps as Additional Source of Credit Enhancement* and *Excess Spread* in the report titled "*EMEA Cash RMBS Structural Overview*", dated 6 May 2009 and available at www.fitchratings.com).

The table below gives an example of the approach.

WAS Compression Assumptions: Example

Total portfolio	Total portfolio composition at closing							
	Bucket 1		Bucket 2		Bucket 3		Bucket 4	
	Size	Margin (%)	Size	Margin (%)	Size	Margin (%)	Size	Margin (%)
100	25	1.2	40	1.0	15	0.8	20	0.6

Portfolio WAS at closing = $(25 * 1.2\% + 40 * 1.0\% + 15 * 0.8\% + 20 * 0.6\%) / 100 = 0.94\%$

Month 1: Defaults and 80% of prepayments amounting to 30
25 allocated to bucket 1
5 allocated to bucket 2

Total portfolio	Total portfolio composition after month 1							
	Bucket 1		Bucket 2		Bucket 3		Bucket 4	
	Size	Margin (%)	Size	Margin (%)	Size	Margin (%)	Size	Margin (%)
100 - 30 = 70	0	1.2	35	1.0	15	0.8	20	0.6

Portfolio WAS after month 1 = $(0 * 1.2\% + 35 * 1.0\% + 15 * 0.8\% + 20 * 0.6\%) / 70 = 0.84\%$

Source: Fitch

Swap Modelling

The impact of the swaps protecting the transaction against interest rate risk or providing CE (see the sections titled *Swaps: Interest Rate and Currency Risk* and *Swaps as Additional Source of Credit Enhancement* in the report titled “*EMEA Cash RMBS Structural Overview*”, dated 6 May 2009 and available at www.fitchratings.com) will be factored into the cash flow modelling.

In extreme cases, the interest rate, prepayment and margin compression risks can be fully transferred to a swap counterparty and thereby isolate the transaction from such risks. However, as a result the transaction will have an increased counterparty dependency that will be taken into account in the rating analysis, potentially resulting in a credit-link to the counterparty rating. Please note that Fitch is in the process of updating its counterparty criteria. For more information please see “*Exposure Draft: Counterparty Risk in Structured Finance Transactions*”, published on 30 March 2009 or the subsequent update of the counterparty criteria, available at www.fitchratings.com.

Fitch’s models can reproduce all types of hedging agreements employed so far in EMEA RMBS transactions.

Default and Recovery Rates

Fitch determines portfolio default and recovery rates using a loan-by-loan default model customised for each country, the details of which are discussed in the country-specific criteria papers listed in *Appendix 1* hereto.

The default models generate rating-specific default and recovery rates for each mortgage loan in the portfolio. The individual rates are then aggregated to yield a weighted average foreclosure frequency (WAFF) and a weighted average recovery rate (WARR) for the portfolio. These results are used in Fitch’s cash flow analysis to simulate the default and recovery behaviour of the pool, according to certain default distribution and recovery timing scenarios (see the sections titled *Default Distribution* and *Recovery Time*).

In general, Fitch’s jurisdiction-specific default models calculate the single-loan recovery rate as the minimum of:

- the current principal balance of the loan, plus the potential recovery of “accrued interest” (eg, penalty interest); and

- the distressed foreclosure proceeds (essentially the value of the secured property assuming a recession of the real estate market) less prior charge amounts and foreclosure expenses;

divided by the principal balance of the loan at the date of the securitisation (see the country-specific criteria papers for more details).

Deleveraging Effect

In those transactions where further advances by the issuer are not possible - or where further advances by the originator rank junior to the claims of the issuer vis-à-vis the borrowers - Fitch recognises that, as the borrowers repay their loans' principal, the recovery rate will progressively increase as a result of the "deleveraging" of the loans. This happens for example in those instances where the loan-to-value (LTV) of the loans decrease over time (and cannot increase as consequence of further pari-passu draws) and/or that the borrower cannot free-up the property proportionally to the loan paydown.

Fitch's models take this deleveraging effect into account, but cap the increase of the recovery rates applied over time by the Fitch cash flow model to the minimum of: a) the historical recovery rates achieved by the originator and its peers on similar assets; and b) Fitch's maximum recovery expectations in stressed environments, considering the characteristics of the assets and of the jurisdiction (but in any case, never above the loan's outstanding principal at default plus penalty interest, if any).

Other Sources of Recovery and Mortgage Insurance

Other sources of recoveries may be taken into account in the single-loan recovery rate formula described above; when the timing of these receipts is different from those of the recoveries, they are modelled as a separate source of recovery in Fitch's cash flow model. Examples of such sources of recoveries are payments made by mortgage insurers or payments made under the Nationale Hypotheek Garantie (NHG) in the Netherlands. For further details on the NHG see "*Criteria for NHG Guarantee Mortgage Loans in Dutch RMBS*", dated 8 June 2006 and available at www.fitchratings.com. Please note that Fitch is reviewing the criteria for the NHG as per the publication titled "*Fitch Reviewing NHG Criteria for Dutch RMBS*" dated 01 December 2008 and available at www.fitchratings.com.

Depending on the jurisdiction, additional sources of recovery such as attachment of the borrower's salary might also be taken into account, as long as the issuer has full and unencumbered access to them (see the country-specific criteria papers listed in *Appendix 1* for more details).

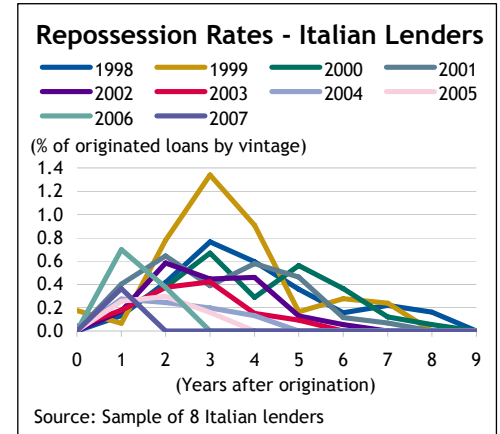
Fitch criteria on mortgage insurance are summarised in the report "*European Criteria for Mortgage Insurance in RMBS Transactions*", dated 4 July 2007, available at www.fitchratings.com.

Default Distribution

Historical observations show that for a given static pool of loans, defaults evolve according to typical patterns. In most cases, defaults are characterised by an initial ramp-up period of several years, in which the defaulted amounts gradually increase before reaching their peak and then tailing off towards the end of the loans' scheduled maturity.

The available data show that the rate of repossession rises during the first three to four years after origination, peaking in years' four to five. The chart in this page shows for example the timing and magnitude of repossessions for static portfolios of Italian prime mortgages, based on the historical data provided by a sample of ten mortgage lenders.

The typical default timing curve results from the fact that after origination it takes some time for the personal circumstances of the borrower to deteriorate to the degree that he or she is no longer able to service the loan and for the foreclosure process to proceed. Once the critical phase of a borrower's vulnerability to economic events has passed, borrower defaults become increasingly dominated by specific personal events such as illness and divorce. Accordingly, defaults rates tend to slowly tail off for a given vintage.



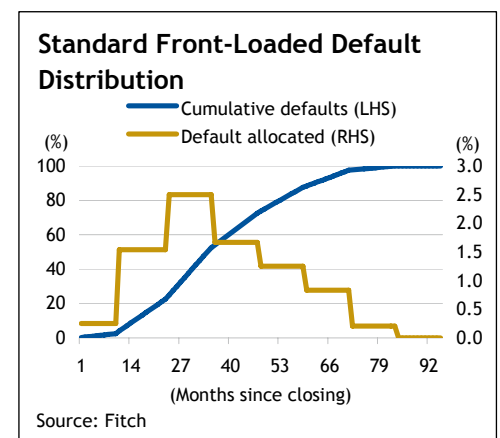
Regarding loss-severity, the lower the LTV, the higher the recovery rate should the borrower indeed default (see also the section titled *Deleveraging Effect*). Therefore, in a non-declining house price environment, defaults are generally more stressful during the early years after the closing of a transaction.

Note, however, that the pattern of defaults depends on a number of factors. In particular, the speed of defaults is subject to economic factors such as the rate of interest and unemployment.

Front-Loaded Distribution

Most transaction structures are more vulnerable to front-loaded default assumptions due to the impact of front-loaded defaults on ExS. The earlier the defaults occur and the higher the rate of prepayment, the lower the volume ExS received from the portfolio over the life of the transaction. In addition, as highlighted above the actual default experiences follow a rather front-loaded pattern as well. Therefore, Fitch derived a front-loaded stress using actual default distribution experience, with defaults starting soon after closing of the transaction.

Fitch back-tested this default timing vector against available information in various developed countries (eg, the UK, Italy, Portugal). The data constitute long-term vintage-based default rates provided by major prime lenders in the respective countries or compilations from government institutions. Fitch's front-loaded distribution invariably allocates defaults significantly more to the earlier stages of a transaction than any of the historically observed vintages.



The following table and chart illustrate Fitch's front-loaded default curve, assumed for all rating levels and expressed as a percentage of the relevant WAFF.

Front-Loaded Default Curve

	Months after closing							Total
	1-10	11-23	24-35	36-47	48-59	60-71	72-84	
WAFF (%)	2.5	20	30	20	15	10	2.5	100

The defaults for each period are spread evenly on a monthly basis
Source: Fitch

The agency models 87.5% of defaults occurring in the first five years after closing of the transaction.

The amount of defaults is calculated in reference to the closing, rather than the current, portfolio principal balance. For instance, if the default model calculates a 20% WAFF to be applied to a portfolio of EUR1,000 Fitch's cash-flow model will assume defaults for EUR200. To illustrate the methodology consider the following example:

Example: Front-Loaded Default Distribution

Quarter	Allocated WAFF (A) ^a (%)	New defaults (AxB) (%)	New defaults in EUR (AxBxC)
1	0.75	0.15	1.50
2	0.75	0.15	1.50
3	0.75	0.15	1.50
4	3.33	0.67	6.65
5	4.62	0.92	9.23
6	4.62	0.92	9.23
7	4.62	0.92	9.23
8	5.58	1.12	11.15
9	7.50	1.50	15.00
10	7.50	1.50	15.00
11	7.50	1.50	15.00
12	6.67	1.33	13.33
13	5.00	1.00	10.00
14	5.00	1.00	10.00
15	5.00	1.00	10.00
16	4.58	0.92	9.17
17	3.75	0.75	7.50
18	3.75	0.75	7.50
19	3.75	0.75	7.50
20	3.33	0.67	6.67
21	2.50	0.50	5.00
22	2.50	0.50	5.00
23	2.50	0.50	5.00
24	1.88	0.38	3.75
25	0.63	0.13	1.25
26	0.63	0.13	1.25
27	0.63	0.13	1.25
Total	100	20	200

B = WAFF resulting from the default model: 20%

C = Portfolio balance: EUR1,000

^a % of total WAFF allocated to each quarter, according to the table "Front-Loaded Distribution"

Source: Fitch

Back-Loaded Default Distribution

The timing of when defaults occur during the life of a transaction can heavily influence the ability for a structure to withstand these stressful periods. Therefore, Fitch models alternative default timing scenarios to assess the ability of the structure to withstand various clusters of defaults. For example, a "back-loaded" default distribution may be more stressful for transactions where the most senior notes are protected by very tight performance triggers linked to defaults. In such a case, modelling back-loaded defaults will create an additional stress, as the structure will start to protect the senior notes later in the life of the deal, when a portion of the available ExS has already been paid out of the structure (based on the assumption that the ExS is available on a use-or-lose basis, as per standard market practice). This would be exacerbated if there was a "step-up" interest on the notes' margin.

Back-Loaded Default Curve

	Months after closing							Total
	1-10	11-23	24-35	36-47	48-59	60-71	72-111	
WAFF (%)	2.5	10	12.5	45	20	5	5	100

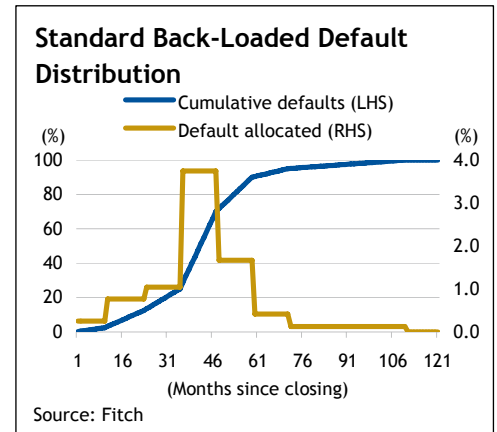
The defaults for each period are spread evenly on a monthly basis

Source: Fitch

Therefore, Fitch will also test the default distribution described below, in addition to the front-loaded distribution.

Portfolio-Specific Distributions

It is worth stressing that Fitch will apply portfolio-specific default distributions if there is evidence that, for a certain type of asset, originator or jurisdiction defaults are distributed differently from the standard curves presented in this report. For example, if a high share of the portfolio consists of interest-only loans, Fitch expects the default distribution to be influenced by the maturity date distribution of the loans and therefore will test a portfolio-specific default distribution.



Portfolio-specific distributions may also be tested if the transaction includes structural features that transform the standard default distributions described above into a beneficial environment for the notes (eg, ExS trapping subject to performance triggers that mirror the default distribution assumptions).

For portfolios where the above-described default patterns are not applicable (eg, because a portfolio has a very steep amortisation profile) Fitch will adjust the applied default patterns to account for the specifics of the analysed portfolio. Similarly, when testing high-prepayment scenarios, Fitch may fine-tune its CPR assumptions and/or re-shape the default distributions described above to avoid situations where the transaction has prepaid the entire capital balance of assets before the assumed WAFF has been applied in its entirety.

Default Definition

The vast majority of EMEA RMBS defines defaulted loans based on the number of unpaid instalments for the purpose of PDL debits or performance triggers calculation.

Under its stress scenarios, Fitch assumes that immediately after closing borrowers start to default, ie, that a portion of the borrowers will stop paying their instalments. However, the default definition in the transaction determines the time in which these non-performing borrowers are recognised as defaulted; this will influence the timeliness with which the structure implements any consequences of poor performance, for example default provisioning or changes in the waterfall when defaults (as defined by the transaction's documentation) exceed a certain threshold.

Recovery Time

The assumed length of the foreclosure time is based on the empirical evidence available in each jurisdiction, and depends in good part on the regulatory framework governing the foreclosure process. The following table lists the foreclosure times assumed in the European countries where Fitch has rated RMBS transactions at the time of publication of this report (for details and updates see the most recent version of the country-specific criteria listed in *Appendix 1* hereto).

Foreclosure Time Assumptions in Europe^a

Country	Assumption
UK (buy-to-let)	12
UK (other)	18
Spain	36
The Netherlands	12
Italy	Depends on the geographic distribution of the portfolio
Germany	24 to 30
France	30
Portugal	36
Greece	36 to 48
Ireland	36
Belgium	30

^a For modelling purposes, foreclosure time is measured from the first missed instalment and considering the “reaction-time” to arrears/default specified in the portfolio’s servicing procedures; see the country-specific criteria pieces for more details on the foreclosure processes in each jurisdiction
Source: Fitch

Maturity of the Rated Notes

Fitch expects that the legal maturity of the notes should fall after the longest maturity of the loans included in the portfolio, plus the maximum recovery time assumed by Fitch in relation to the specific portfolio.

Delinquency

Fitch assumes stressed levels of delinquencies to test the structure’s ability to withstand potential liquidity shortfalls.

Fitch models both defaulting and delinquent borrowers as those who stop payment to the issuer from a certain point in time onwards. For delinquent borrowers, this will be limited to a certain period of time, at the end of which the delinquent borrowers will begin paying their loans again. Indeed, loans in arrears are usually restructured, allowing the borrower to repay the amount in arrears in addition to ongoing scheduled mortgage payments over a limited period of time. The length of such arrangements depends on the individual lender’s collection and servicing guidelines and on the financial means of the borrower.

The approach outlined in the following paragraphs applies to portfolios where delinquencies represent a negligible portion of the pool at closing. Should it not be the case, Fitch would rate the transaction assuming deal-specific default distribution and delinquency modelling, such assumption would be disclosed in the transaction’s new issue report.

Delinquency Assumptions

The agency assumes that a multiple of the monthly defaulting loan balance falls delinquent for a certain period. Thereafter, the delinquent balance becomes fully performing again and the accrued arrears interest is assumed to be fully repaid after 10 months.

This approach may be adjusted if different empirical data becomes available (see for example the approach applicable to UK non-conforming transactions described in *Appendix 3* hereto).

As the assumed level of delinquencies is based on the WAFF - which is always higher in more severe recession scenarios - arrears are more widespread under more stressful rating conditions. To temper this, and to support the assertion that in economic recessions a greater proportion of financially distressed borrowers will ultimately default, the multiple applied to the WAFF is reduced in more severe rating scenarios. The multiples are scaled such that the amount falling into arrears rises towards the more severe rating scenarios. The following table shows the multiples applied.

Delinquency Multiple

	AAA	AA	A	BBB	BB
Multiple of monthly defaults	1.5	2	2.5	2.75	3

Source: Fitch

The assumed duration of delinquency depends on the payment frequency of the mortgages. For example, the period of delinquency is expected to be longer for mortgage loans that pay quarterly and semi-annually compared to those which pay monthly, as detailed in the following table.

Delinquency Period

Payment frequency	Assumed number of missed payments	Assumed number of delinquency months
Monthly	7	7
Quarterly	3	9
Semi-annually	2	12
Annually	1	12
Other		Case-by-case

Source: Fitch

For the purpose of cash flow modelling, Fitch determines a weighted average (WA) delinquency period of the portfolio based on the WA loans' payment frequency, using the loans' outstanding as weights.

To illustrate Fitch's approach consider the following example: assuming a 'BBB' scenario (multiple of 2.75) and a WAFF of 20%, which for illustrative purposes is evenly spread over a period of 12 quarters, the following table shows the amount assumed to become delinquent each month:

Example: Application of Delinquency Stress

Quarter (%)	Initial balance (%)		
	New defaults	New arrears	Total arrears
1	1.70	5.00	5.00
2	1.70	5.00	10.00
3	1.70	5.00	10.00
4	1.70	5.00	10.00
5	1.70	5.00	10.00
6	1.70	5.00	10.00
7	1.70	5.00	10.00
8	1.70	5.00	10.00
9	1.70	5.00	10.00
10	1.70	5.00	10.00
11	1.70	5.00	10.00
12	1.70	5.00	10.00
13	0.00	0.00	5.00
14	0.00	0.00	0.00

Source: Fitch

For the purpose of this example, the duration of non-payment is assumed to be two quarters, after which the loan becomes performing again. Hence in aggregate, after the initial two quarters, the outstanding balance of loans in arrears remains the same, as newly-delinquent loans are offset by those that become performing again.

It is important to stress that the delinquency assumptions are assumed in addition to the default ones, ie, the arrears balance shown in the example above does not include the balance of defaulted loans.

Swaps Covering the Cost of Carry of Delinquencies

Some EMEA RMBS transactions benefit from swaps where the swap provider's notional includes performing and delinquent (but not defaulted) loans, whereas the issuer's notional consists of performing loans only.

With such a swap, the available cash flows to the issuer could be positively correlated with the portfolio delinquency levels and therefore transform the delinquencies stress, described above, into a favourable environment for the issuer.

For these reasons, Fitch also tests these transactions under alternative low or no delinquency environments and considers whether the note's reliance on the swap flows justify a direct dependency of their rating on the rating of the swap provider.

Interest Rates

Interest rate risk may leave the issuer exposed to adverse movements in the notes' index. As discussed, interest rate risk is generally hedged in respect of performing mortgage loans through the use of swaps, while non-performing positions (defaulted and delinquent loans) are usually un-hedged in EMEA RMBS transactions. Therefore, a rise in interest rates would increase the differential between the issuers' income (ie, interest from the performing portfolio) and expenses (ie, interest on the notes plus senior costs) which will have to service the notes inclusive of the proportion corresponding to such non-performing positions.

Delinquent loans that subsequently return to performing (and pay off all accumulated arrears interest) will cause a liquidity stress only, which will last until full recovery of the delinquent amounts. The magnitude of this stress depends on the length of time a loan is delinquent and on the change in interest rates during that period of time.

This cost of carry is significantly larger for defaulted positions, for which the time to recovery can last several years in certain jurisdictions. If subsequent recoveries are insufficient to cover both principal and interest up to the amount the issuer paid under the notes during the time needed to complete the foreclosure, such cost of carry will cause or compound principal deficiencies.

To mitigate cost of carry, certain transactions include provisioning mechanisms designed to capture available interest cash flows (including ExS) and use them to amortise the notes in advance of any recovery being made on defaulted loans or loans in severe arrears (see the section titled *Provisioning* in the report titled *“EMEA Cash RMBS Structural Overview”*, dated 6 May 2009 and available at www.fitchratings.com). As mentioned above, other transactions limit the cost of carry through a swap.

Interest Rate Assumptions

In order to stress the cost of carry of non-performing loans, Fitch tests the structure in a rising interest rate environment. The agency also tests stable and decreasing interest rate scenarios, with the purpose of addressing any possible hedging mismatches.

The stresses applied by Fitch are downloadable at www.fitchratings.com (*“Fitch Euribor Stresses”* and *“Fitch GBP Libor Stresses”*) and are updated monthly. The standard interest rate stress vectors applied by Fitch consist of monotone curves and are based on a model that utilises Euribor/GBP Libor swap prices as inputs to determine the term structure of interest rates. Rate volatility is based on swaption pricing, the characteristics of which are detailed in the reports *“Interest Rate Risk In Structured Finance Transactions - Euribor”* and *“Interest Rate Risk In Structured Finance Transactions - British Pound Sterling Libor”*, dated 1 November 2006 and available at www.fitchratings.com.

The stresses consist of vectors of monthly increases/decreases to be applied to the spot Euribor/GBP Libor at closing, with the same frequency as the notes' interest payment frequency, as detailed in the example below.

Example: Application of AAA Interest Rate Rising Stresses

Month	AAA rising interest rate stress vector ^a (%)	Notes payment date ^b	Interest rate vector applied in AAA rising interest scenario ^c (%)
1	+ 0.71	N	5.00
2	+ 1.36	N	5.00
3	+ 1.93	Y	5.00
4	+ 2.46	N	7.46
5	+ 2.93	N	7.46
6	+ 3.35	Y	7.46
7	+ 3.73	N	8.73
8	+ 4.07	N	8.73
9	+ 4.36	Y	8.73
10	+ 4.61	N	9.61
11	+ 4.83	N	9.61
12	+ 5.01	Y	9.61

^a As of November 2007. Updates are downloadable from www.fitchratings.com

^b Notes' payment frequency: quarterly

^c Notes' index spot level at closing: 5%

Source: Fitch

The impact of the transaction's hedging will be assessed using the above-described methodology and the hedging will be modelled as per the terms of the documentation regulating it. Should the transaction structure appear particularly vulnerable to small changes in the interest rate path, Fitch will perform additional sensitivity tests, changing the "shape" or the timing of the stress.

Interest Rate Scenarios for Transactions Including Interest Rate Caps

A significant number of EMEA RMBS transactions include one or more interest rate caps (see *Interest Rate Caps* in the report titled "*EMEA Cash RMBS Structural Overview*", dated 6 May 2009 and available at www.fitchratings.com). In a rising interest rate scenario, especially for higher rating levels, the index rate assumed by Fitch can be higher than the cap strike rate. Under such a scenario, the interest rate cap will therefore generate positive cash flows for the transaction.

To ensure that the notes would still be able to pay the interest and principal according to their terms - without the benefit of cash flows from interest rate caps, which depend on the assumed interest rate scenario - Fitch will also test alternative interest rate patterns.

Analysis of Transactions Where the Interest Rate Risk is not Hedged

In some EMEA RMBS transactions the interest rate risk is not covered or only partially covered. The presence of fixed-rate loans, not hedged by a fixed-floating swap, has a significantly negative impact on noteholders in a rising interest rate scenario, where the structure will suffer from a natural "cost of carry" of fixed rate loans. Similarly, transaction with floating rate mortgages and fixed rate notes would be negatively impacted in decreasing interest rate scenarios.

Unhedged Basis or Currency Risk

There are also EMEA RMBS transactions where the basis and/or reset risk on floating rate loans (ie, floating rate mortgages with an index different from that of the notes and/or with an index reset date different from that of the notes) are not covered by a basis swap. In these instances, Fitch estimates the basis and reset risk taking into account expected future market trends, as well as by comparing the historical data available on the index of the notes and the index of the loans.

Should the transaction be exposed to unhedged or partially hedged currency risk, Fitch would test the transaction assuming transaction and currency-specific stresses and disclose such stresses in the transaction's new issue report.

In light of recent market volatility Fitch is reviewing the criteria applied for both unhedged basis risk and unhedged currency risk. Market participants should always refer to Fitch's website at www.fitchratings.com for the most up to date criteria.

Servicing Costs

Fitch stresses the servicing cost of the portfolio and of the issuer to the higher of the actual deal's expenses and the agency's expected cost of servicing in a high default and delinquency environment, such as those tested in the rating analysis.

Fitch's assumptions take into account extraordinary costs such as, but not limited to, those related to the invocation of back-up or stand-by servicing arrangements or the engagement of a replacement servicer following a servicer event of default. For example, in cases where a back-up servicing agreement is not in place for a specific transaction servicing cost assumptions may be increased, particularly at the higher rating categories, to account for the increased expenses associated with locating and engaging a replacement servicer. These assumptions may vary by jurisdiction driven in part by the country's third party servicing environment and/or the sophistication of the national mortgage market.

Countries with well-established third party servicers provide a pool from which a replacement servicer can be more easily identified. Furthermore, such servicers typically have experience in processing loan transfers from other lenders or servicer potentially mitigating some of the operational concerns as well as reducing the time and costs associated with such transfer events.

The details of this assumption are available in each country-specific criteria (see *Appendix 1* hereto).

Swaps Covering Servicing Costs

Swaps can protect the transaction's ExS by including the servicing costs among the amounts to be paid by the swap counterparty. In these instances, Fitch will model the contractual commitments of the swap counterparty, therefore giving full credit to the CE provided by the swap. Nevertheless, depending on the provisions of the swap agreement and the jurisdiction's specificities, the agency could make the conservative assumption that the issuer will still have to cover some extra senior expenses in a stressed environment. Fitch will also consider whether the note's reliance on the swap flows justify a direct dependency of their rating on the rating of the swap provider.

Moreover, Fitch will pay special attention to the rating downgrade language incorporated in the transaction documents and whether the formula to calculate the mark-to-market of the swap takes these fees into account (for more details see the report titled "*Counterparty Risk in Structured Finance Transactions: Hedge Criteria*", dated 1 August 2007 and available at www.fitchratings.com). Please note that Fitch is in the process of updating its counterparty criteria. For more information please see "*Exposure Draft: Counterparty Risk in Structured Finance Transactions*", published 30 March 2009 or the subsequent update of the counterparty criteria available at www.fitchratings.com.

Available Cash Investments

In order to limit the impact of negative carry the EMEA RMBS issuers usually negotiate a certain yield on the their accounts (where portfolio principal and interest collections as well as the amounts standing to the credit of the RF, if any, are deposited). For more details on negative carry see the section titled *Negative Carry* in the report titled "*EMEA Cash RMBS Structural Overview*", dated 6 May 2009 and available at www.fitchratings.com)

In some instances, the negotiation of such yield is formalised in a guaranteed investment contract, where the account provider agrees to pay a guaranteed rate of interest on the issuer's accounts. The agreed rate of interest is usually the reference rate of the notes minus a margin.

Alternatively, the issuer may invest the funds deposited on its accounts in certain types of investments (normally securities and repos). However, such investments would introduce counterparty risk and credit and market risk in the transaction, as well as liquidity risk. Fitch's criteria in respect of these "investment-related" risks are described in the report titled "*Counterparty Risk in Structured Finance: Qualified Investment Criteria*", dated 27 September 2007 and available at www.fitchratings.com. Please note that Fitch is in the process of updating its counterparty criteria. For more information please see "*Exposure Draft: Counterparty Risk in Structured Finance Transactions*", published on 30 March 2009 or the subsequent update of the counterparty criteria available at www.fitchratings.com.

In the absence of any contrary evidence, Fitch assumes that interest earned on the on the funds available to the EMEA RMBS issuer are at the relevant reference rate of the notes less 50bps.

Commingling Risk and Portfolio Variations

This section summarises Fitch's approach to quantitatively assessing those risks that do not stem from the portfolio's performance but from other transactional features.

Commingling Risk

In several RMBS transactions, commingling risk is addressed by including additional sources of "external" CE in the structure, such as third-party guarantees or dedicated cash reserves. For more details on commingling risk see the report titled "*Commingling Risk in Structured Finance Transactions: Servicer and Account Bank Criteria*", dated 9 June 2004 and available at www.fitchratings.com. Also see the sections titled *Negative Carry* and *Commingling Risk* in the report "*EMEA Cash RMBS Structural Overview*", dated 6 May 2009 and available at www.fitchratings.com.

Fitch tests the adequacy of these forms of support by comparing the protection they offer with the cash flows exposed to commingling risk in Fitch's stress scenarios, with a particular focus on low default/high prepayment/rising interest environments.

In the absence of structural mitigants to commingling risk, Fitch simulates one commingling loss occurring in each of the tested scenarios (see the section titled *Standard Scenarios Recap*). The size of the loss is scenario-dependent and is influenced, among other things, by the default level and distribution, the amortisation profile of the portfolio, the prepayment rate, the interest rate trend, and the cash management features of the transaction.

Revolving Periods

In those transactions which envisage a revolving period, the principal collections from the portfolio are not used to repay the notes' principal but rather to purchase new mortgage loans from the originator, subject to certain conditions.

Indeed, these transactions always include triggers which stop the revolving period when the quality of the portfolio deteriorates beyond a certain level. These triggers are often combined with mechanisms that prevent further purchases of loans if the post-purchase portfolio composition differs too much from the aggregate characteristics of the pool at closing.

The report titled "*EMEA Cash RMBS Structural Overview*", dated 6 May 2009 and available at www.fitchratings.com includes a summary of the standard provisions included in EMEA RMBS transactions (see the section titled *Revolving Periods*). When those provisions are present recession scenarios as tested by Fitch in its rating analysis can start only at the end of the revolving period. For this reason, Fitch's cash flow modelling focuses on the life of the transaction after the revolving period.

Portfolio Deterioration

Fitch also analyses the mechanisms which prevent further purchases if the post-purchase portfolio composition differs too much from that of the pool at closing; this is to assess whether they might cause a weakening to the portfolio's credit quality. These mechanisms should ideally be benchmarked against the risk-features identified in the country-specific default model criteria, such as the ones described in the report titled "*EMEA Cash RMBS Structural Overview*", dated 6 May 2009 and available at www.fitchratings.com (see the section titled *Portfolio Deterioration*)

Should the limits included in the transaction in Fitch's view fail to prevent a deterioration of the portfolio, Fitch will assume that by the end of the revolving period the notes would be backed by the worst possible portfolio allowed by the criteria set out in the transaction documentation.

All else being equal, a revolving transaction usually has a higher risk characteristic than a static transaction due to the possibility of credit quality erosion of the assets through replenishment. This is usually addressed through the replenishment conditions mentioned in the report titled "*EMEA Cash RMBS Structural Overview*" and often also higher available CE.

Loan Renegotiation and Asset Substitution

In certain instances the originator retains the right to re-negotiate or substitute the loans transferred to the issuer, even if they are not in severe arrears or defaulted.

In this case, Fitch's analysis is similar to that described in the paragraph above titled *Portfolio Deterioration*, and focuses on the renegotiation/substitution criteria and on the worst possible portfolio allowed by them. The analysis also considers whether any of the portfolio deterioration risks, which stem from the renegotiation/substitution, are transferred to third parties. For example, if the structure is protected by a margin-guaranteed swap, any renegotiation of the loan's margin - or substitution of high margin loans with loans paying lower margins - will impact the swap counterparty only.

RMBS Structural Features

This section summarises Fitch's rating criteria with respect to those structural RMBS features that can have an impact on ratings. As noted, please refer to the report "*EMEA Cash RMBS Structural Overview*", dated 6 May 2009 and available at www.fitchratings.com for further detail.

Reserve Fund

Reserve Fund Build-Up Triggers

Some structures provide that the reserve fund (RF) can "build-up" subject to triggers which ensure that the build-up starts only when the portfolio performance (eg, delinquencies, defaults, losses, etc.) deteriorates. In such instances, Fitch will consider, in its analysis, the stress scenarios where the RF build-up triggers have not been breached.

Reserve Fund Amortisation

Most EMEA RMBS transactions allow the RF to amortise in line with the principal amortisation of the notes (typically, the RF required amount is expressed as a percentage of the outstanding notes) provided that certain conditions related to the structure and portfolio performance are met.

Fitch views transactions that do not include the standard provisions - described in the section titled *Reserve Fund Amortisation* in the report "*EMEA Cash RMBS Structural Overview*", dated 6 May 2009 and available at www.fitchratings.com - as weaker transactions. Specifically, transaction structures that feature reserve fund amortisation and have no performance tests in place may be subject to downward ratings migration in the event that the pool is experiencing higher than expected delinquencies or defaults.

In these instances, Fitch will run multiple stress test scenarios in its cash flow model, in addition to the standard scenarios (detailed in the section titled *Standard Scenarios Recap*) to evaluate all the sensitivities of the structures and capture all the possible scenarios that drive the model.

Liquidity Facility

Credit Enhancement From the Liquidity Facility

In some instances, the combination of the waterfall and the liquidity facility (LF) agreement provisions result in the LF providing CE to the rated notes. In practice, in case of poor performance of the structure and/or the portfolio, the structure lets the issuer repay the noteholders in priority to the LF provider, which will therefore absorb part of the losses.

In these cases Fitch carefully reviews the scenarios where the LF provides the structure with CE in order to assess how the repayment of the rated notes relies on the amounts made available under the LF and therefore, if the rating to be assigned to the notes is in any way linked to the credit standing of the LF provider.

Similarly, some transactions may rely on LFs to cover short term liquidity constraints particularly present in high rating scenarios. In such instances Fitch's analytical approach will focus on the contractual availability of the LF as well as its size. In absence of a sufficiently sized LF high ratings may be difficult to achieve if no other mechanisms, such as use of principal to pay interest on senior notes, are available to remedy liquidity shortfalls.

Liquidity Facility Amortisation

Some EMEA RMBS transactions benefit from a LF which can amortise in line with the principal amortisation of the notes (for example, the LF size is expressed as a percentage of the outstanding notes) provided that certain conditions related to the structure and portfolio performance are met.

Fitch views transactions that do not include the standard provisions for LF amortisation - described in the section titled *Liquidity Facility Amortisation* in the report titled "*EMEA Cash RMBS Structural Overview*", dated 6 May 2009 and available at www.fitchratings.com - as weaker transactions.

In these instances, Fitch will run multiple stress test scenarios in its cash flow model in the absence of standard conditions, in addition to the standard scenarios (detailed in the section titled *Standard Scenarios Recap*), to evaluate all the sensitivities of the structures and capture all the possible scenarios that drive the model.

Pro-Rata Amortisation

To mitigate adverse selection and concentration risks, pro-rata amortisation in EMEA RMBS transaction can typically start only if sufficient credit enhancement for the most senior class has built up and/or certain conditions on the portfolio and structural performance are met.

Fitch views transactions that do not include the standard provisions for pro rata amortisation - described in the section titled *Pro-Rata Conditions* of the report "*EMEA Cash RMBS Structural Overview*", dated 6 May 2009 and available at www.fitchratings.com - as weaker structures.

In these instances, Fitch will run multiple stress test scenarios in its cash flow model in the absence of standard conditions, in addition to the standard scenarios (detailed in the section titled *Standard Scenarios Recap*), to evaluate all the sensitivities of the structures and capture all the possible scenarios that drive the model.

Notes Backed by Excess Spread

In some cases Fitch is able to assign a rating to the ExS extractions and/or to the investments made by the equity investors. The repayment of these obligations is reliant on the level and timing of ExS, which in turn relies on the portfolio performance and structural features. Among the structural features, the presence of margin step-ups and the potentially associated call or put options play an important role, especially regarding the analysis of the holdings of the “equity investors”. Indeed, the presence of a step-up feature can significantly affect the levels of ExS that the structure generates over time, reducing the amount of funds available to the equity investors. In addition, if the associated call or put option does not require the issuer to repay the equity notes, its exercise will be detrimental to them. This is due not only in the potential principal losses in case of call option exercise, but also to the fact that the availability of ExS to repay the equity notes after the call date will be subject to the call option not being exercised. For this reason, when analysing the equity notes, Fitch carefully considers the impact of the call option and takes its exercise into account if it can negatively affect the equity notes.

Since the level and timing of the ExS is highly sensitive to small variations of the stress scenarios tested by Fitch, the rating analysis of these obligations will involve the analysis of a series of scenarios where the interactions between variables discussed in the paragraph *Standard Scenarios Recap* are tested.

As this type of obligation is far from standard in EMEA RMBS transactions and its financial solidity depends on its interaction with the rest of the structure (eg, call or put options, presence of performance triggers tightening the ExS trapping in favour of the noteholders, etc) the scenarios tested by the agency are tailored to the characteristics of the obligations analysed.

Standard Scenarios Recap

Each note is analysed in its specific rating scenario, testing all combinations of interest rate trends, prepayment rates and default distributions described in the following table:

Summary of Standard Scenarios

Default distribution	Interest rate trend	Prepayment rates
Front	Rising	High
		Low
	Stable	High
		Low
	Decreasing	High
		Low
Back-loaded	Rising	High
		Low
	Stable	High
		Low
	Decreasing	High
		Low

Source: Fitch

As high rating scenarios are more stressful for the structure than low rating scenarios, Fitch tests that the issuer’s obligations under the notes are satisfied both in its specific rating scenarios and in the rating scenarios below it (eg, a ‘AA-’ rated note is tested in all scenarios from ‘AA’ to ‘B’).

As discussed, extra scenarios may be tested in the presence of certain features of the structure (eg, interest rate caps, reserve build-up triggers, rating equity investor’s investment).

While the cash flow model output is an important consideration in determining the final rating, ratings are ultimately assigned by a Fitch credit committee, which also considers other qualitative factors and features that cannot be modelled such as risks of the structure, the assets, and the transaction's legal framework.

Appendix 1: Related Research

Related Research^a

Publication	Date
General rating and structured finance criteria	
Inside the ratings: What credit ratings mean	August 2007
Special-purpose vehicles in structured finance transactions	13 June 2006
Counterparty risk criteria	
Exposure draft: Counterparty risk in structured finance transactions	30 March 2009
Counterparty risk in structured finance transactions: Hedge criteria	1 August 2007
Commingling risk in structured finance transactions: Servicer and account bank criteria	9 June 2004
Liquidity support in structured finance transactions: Liquidity provider rating criteria	13 July 2004
Counterparty risk in structured finance: Qualified investment criteria	27 September 2007
Issuer's currency swap obligations rating criteria	
Criteria for rating currency swap obligations of an SPV in structured finance transactions	10 January 2008
Interest rate criteria	
Interest rate risk in structured finance transactions - Euribor	1 November 2006
Interest rate risk in structured Finance transactions - British pound sterling Libor	1 November 2006
Fitch Euribor stresses	Monthly updated
Fitch GBP Libor stresses	Monthly updated
Mortgage insurance criteria	
European criteria for mortgage insurance in RMBS transactions	4 July 2007
Country-specific criteria	
UK residential mortgage default model criteria	8 February 2008
Spanish residential mortgage default model criteria	21 December 2007
Dutch residential mortgage default model criteria	2 February 2009
Criteria for NHG guarantee mortgage loans in Dutch RMBS	8 June 2006
Italian residential mortgage default model II - Amended	2 November 2005
Revised MVD assumptions for Italian RMBS (Italy RMBS)	20 April 07
German residential mortgage default model 2004	1 December 2004
French RMBS default model 2004	3 May 2004
Revised MVD assumptions for French RMBS transactions (France RMBS)	28 March 2007
Irish residential default model	7 March 2006
Portuguese residential mortgage default model	16 December 2005
Greek RMBS rating criteria (Greece RMBS)	13 December 2006
Belgian residential mortgage default model 2005 (Belgium RMBS)	10 May 2005
Revised MVD assumptions for Belgian RMBS transactions (Belgian RMBS)	8 January 2007
Country-specific market studies	
UK RMBS - Regional repossession study for England and Wales	8 January 2007
Diversity in union - Prepayment drivers in European RMBS - Update (Europe RMBS)	11 October 2007
Origination and servicing standards in Italy	4 April 2005
Underwriting practices and criteria in the Dutch mortgage market	19 October 2007
Ratings stress test: Impact of a housing market downturn on Dutch RMBS	2 February 2009
Legal issues in Dutch RMBS	13 June 2002
Italian RMBS market overview - Trends and impact on rating analysis	29 May 2008
Surveillance	
European RMBS surveillance: Post issuance reporting standards	19 November 2004
Around the houses - Quarterly European RMBS performance update	Quarterly publication
Origination & servicing	
European residential mortgage originator review criteria	5 February 2007
Global structured finance originator evaluations	3 December 2008
Rating criteria for European residential and commercial mortgage loan servicers	20 August 2007
Rating criteria for European mortgage loan servicers - Spanish market addendum	25 September 2007
Rating criteria for European mortgage loan servicers - UK market addendum	28 January 2008
Rating criteria for European mortgage loan servicers - The Netherlands market addendum	14 February 2008
Rating criteria for European mortgage loan servicers - German market addendum	14 December 2007
Rating criteria for European mortgage loan servicers - Italian market addendum	1 November 2007
Rating criteria for European mortgage loan servicers - Russian market addendum	7 September 2007

All the above research is available at www.fitchratings.com

^a Criteria can be updated or amended: readers should always make reference to the last criteria available at www.fitchratings.com

Source: Fitch

Appendix 2: Rising CPR Assumptions for European RMBS¹

UK Prime^a

Scenario (%)	Year			
	1	2	3	4 and thereafter
AAA	10-20	21-35	30-50	30-50
AA	10-20	21-35	30-50	30-50
A	10-20	21-35	30-50	30-50
BBB	10-20	21-35	30-50	30-50
BB and below	10-20	21-35	30-50	30-50

^a The prepayment scenario run would depend on whether a transaction was essentially revolving in nature (as it potentially can be with a master trust transaction and also on historical observed prepayments for an individual lender
Source: Fitch

UK Non-Prime^a

Scenario (%)	Year			
	1	2	3	4 and thereafter
AAA	17.0	27.0	37.0	45.0
AA	17.0	27.0	37.0	45.0
A	17.0	27.0	37.0	45.0
BBB	17.0	27.0	37.0	45.0
BB and below	17.0	27.0	37.0	45.0

^a The vector is inclusive of both prepayments and defaults (ie, voluntary and “involuntary” prepayments): see Appendix 3 for details
Source: Fitch

Spain

Scenario (%)	Year			
	1	2	3	4 and thereafter
AAA	15.0	19.0	22.0	25.0
AA	14.0	17.0	20.0	23.0
A	13.0	15.0	18.0	20.0
BBB	12.0	14.0	16.0	18.0
BB and below	12.0	12.0	14.0	15.0

Source: Fitch

The Netherlands

Scenario (%)	Year			
	1	2	3	4 and thereafter
AAA	15.0	20.0	25.0	30.0
AA	14.0	19.0	24.0	28.0
A	13.0	17.0	21.0	25.0
BBB	12.0	16.0	20.0	23.0
BB and below	10.0	13.0	16.0	20.0

Source: Fitch

¹ This appendix summarises the rising CPR assumptions published in the country-specific criteria listed in *Appendix 1*. Criteria can be updated or amended: readers should always make reference to the last criteria available at www.fitchratings.com.

Italy

Scenario (%)	Year			
	1	2	3	4 and thereafter
AAA	10.0	13.0	17.0	20.0
AA	9.0	12.0	15.0	18.0
A	8.0	11.0	13.0	15.0
BBB	7.0	9.0	11.0	12.0
BB and below	5.0	7.0	9.0	10.0

Source: Fitch

Ireland

Scenario (%)	Year			
	1	2	3	4 and thereafter
AAA	15.0	22.0	29.0	35.0
AA	15.0	22.0	29.0	35.0
A	15.0	22.0	29.0	35.0
BBB	15.0	22.0	29.0	35.0
BB and below	15.0	22.0	29.0	35.0

Source: Fitch

Germany

Scenario (%)	Year					
	1	2	3	4	5	6 and thereafter
AAA	5.0	5.0	5.0	5.0	15.0	20.0
AA	5.0	5.0	5.0	5.0	15.0	20.0
A	5.0	5.0	5.0	5.0	15.0	20.0
BBB	5.0	5.0	5.0	5.0	15.0	20.0
BB and below	5.0	5.0	5.0	5.0	15.0	20.0

Source: Fitch

France

Scenario (%)	Year			
	1	2	3	4 and thereafter
AAA	15.0	20.0	25.0	30.0
AA	14.0	19.0	24.0	28.0
A	13.0	17.0	21.0	25.0
BBB	12.0	16.0	20.0	23.0
BB and below	10.0	13.0	16.0	20.0

Source: Fitch

Portugal

Scenario (%)	Year			
	1	2	3	4 and thereafter
AAA	10.0	13.0	17.0	20.0
AA	9.0	12.0	15.0	18.0
A	8.0	11.0	13.0	15.0
BBB	7.0	9.0	11.0	12.0
BB and below	5.0	7.0	9.0	10.0

Source: Fitch

Greece

Scenario (%)	Year			
	1	2	3	4 and thereafter
AAA	10.0	13.0	17.0	20.0
AA	9.0	12.0	15.0	18.0
A	8.0	11.0	13.0	15.0
BBB	7.0	9.0	11.0	12.0
BB and below	5.0	7.0	9.0	10.0

Source: Fitch

Belgium

Scenario (%)	Year			
	1	2	3	4 and thereafter
AAA	15.0	20.0	25.0	30.0
AA	14.0	19.0	24.0	28.0
A	13.0	17.0	21.0	25.0
BBB	12.0	16.0	20.0	23.0
BB and below	10.0	13.0	16.0	20.0

Source: Fitch

Appendix 3: Prepayment and Delinquency Assumptions in UK Non-Conforming RMBS

Prepayment Assumptions

As a result of Fitch's recent experience in rating UK non-conforming transactions the definition of the prepayment rate has been changed. For this sector, the relationship between prepayments and defaults has proved to be more immediate than for conforming loans. In a benign economic environment, remortgage opportunities allow defaults to fall while prepayments increase. Conversely, when the lending sector is in a contraction phase, borrowers at the riskier end of the spectrum may find their products no longer available and so lack refinancing opportunities.

For this reason, a different vector has been introduced for UK non-conforming RMBS transactions. The vector is inclusive of both prepayments and defaults (ie, voluntary and "involuntary" prepayments). Under this approach, defaults in a given year would be linked to prepayments such that, while each would behave inversely to the other across ratings levels, the total of both would equal the prepayment rate for that year. The voluntary prepayment rate, ie, the new prepayment rate less the default rate, is applied as before on the performing balance.

Example of Prepayment Modelling in UK Non-Conforming Portfolios

Month	Mortgage balance amount A	Voluntary + involuntary prepayment		Defaults (involuntary prepayment)		Voluntary prepayment	
		Amount B	(%) C	(%) D	Amount E = A*D	Amount F = B-E	(%) G
1	100,000	1,541	17.0	0.20	200	1,341	15.0
2	98,459	1,517	17.0	0.20	200	1,317	14.9
3	96,942	1,494	17.0	0.20	200	1,294	14.9
4	95,449	1,471	17.0	0.20	200	1,271	14.9
5	93,978	1,448	17.0	0.20	200	1,248	14.8
6	92,530	1,426	17.0	0.20	200	1,226	14.8
7	91,104	1,404	17.0	0.20	200	1,204	14.8
8	89,701	1,382	17.0	0.20	200	1,182	14.7
9	88,319	1,361	17.0	0.20	200	1,161	14.7
10	86,958	1,340	17.0	0.20	200	1,140	14.6
11	85,618	1,319	17.0	0.20	200	1,119	14.6
12	84,299	1,299	17.0	0.20	200	1,099	14.6
13	83,000	2,148	27.0	0.66	660	1,488	19.5
14	80,852	2,093	27.0	0.66	660	1,433	19.3
15	78,759	2,039	27.0	0.66	660	1,379	19.1
16	76,720	1,986	27.0	0.66	660	1,326	18.9
17	74,734	1,934	27.0	0.66	660	1,274	18.6
18	72,800	1,884	27.0	0.66	660	1,224	18.4
19	70,915	1,836	27.0	0.66	660	1,176	18.2
20	69,080	1,788	27.0	0.66	660	1,128	17.9
21	67,291	1,742	27.0	0.66	660	1,082	17.7

Source: Fitch

In the example above, column B is the monthly total prepayment plus default calculated using a monthly apportionment of the vector in column C (as reported in Appendix 2). The default rates in column D are also a monthly apportionment of the default expectation that was derived from the analysis of the underlying mortgage pool that backs the transaction, according to the sector-specific criteria. Column E is the resulting expected defaulted monthly amount calculated by multiplying the pool's initial balance (column A, month 1) by the expected default rate for that month (column D). Column F is the actual expected voluntary prepayment net of defaults and is calculated as column B less column E. Column G is the voluntary prepayment in column F as a percentage of the outstanding portfolio balance in column A.

Delinquency Assumptions

The first non-conforming UK RMBS transactions backed by non-prime mortgages have now matured and the agency found that the behaviour of non-prime delinquent borrowers is significantly different in two primary aspects in comparison with prime delinquent borrowers.

Firstly, the non-prime delinquency rate peaks much earlier than the prime delinquency rate; and secondly, non-conforming transactions with non-prime mortgages have a significantly higher ratio of delinquency rates to default rates. A substantial proportion of non-prime loans stay delinquent but keep making partial payments and do not default.

For non-conforming transactions Fitch therefore uses delinquency vector and delinquency pay rate assumptions to model delinquent loans (see the table *Delinquency Vector* and *Non-Conforming Pay Rate* below). The delinquency rate for the rating scenario will be scaled using the vector multiple listed in the table *Non-Conforming Vector Multiple*. The pay rate assumptions are listed in the table *Non-conforming Pay Rate*, which specifies how much the borrower is expected to pay during the period of delinquency.

Delinquency Vector

Month	1-12	13-24	25-36	37-48	49-60	61-72	73-84	85
Monthly delinquency (%)	2.0	2.10	2.10	2.30	2.30	2.30	2.30	2.30

Source: Fitch

Non-Conforming Vector Multiple

Rating	AAA	AA	A	BBB	BB	B
Vector multiple	2.3	2.2	2.1	1.5	1.2	1

Source: Fitch

Non-Conforming Pay Rate

Rating	AAA	AA	A	BBB	BB	B
Pay rate (%)	10.0	20.0	30.0	40.0	45.0	50.0

Source: Fitch

The delinquency vector for a transaction will depend on the B WAFF for the transaction and will be calculated using the following formula:

Delinquent portion of the pool in month x = (delinquency vector in month x * vector multiple for rating scenario * B WAFF) / 8.925%

Where constant 8.925% is the average B WAFF of the transactions analysed to derive the delinquency vector. The average B WAFF may vary overtime depending on changes in default methodology and changes in average pool characteristics.

For example, for a transaction with B WAFF of 13.00%, the delinquent portion of the pool in month one for the 'BB' scenario would be equal to $(2.0\% * 1.2 * 13\%) / (8.925\%) = 3.50\%$. Fitch assumes that delinquent borrowers will continue to make partial payments on their loans according to the assumptions set in the *Non-Conforming Pay Rate* table, which will be accounted as interest; in the example, the BB pay-rate is 45%: Fitch will assume in its cash-flow model that the delinquent portion of the pool will continue to produce interest flows in an amount equal to 45% of the interest due during the delinquency period.

In the example above the 2.00% in the *delinquency Vector* table represents the amount of loans as a percentage of the pool that are expected by Fitch to be delinquent in that month. The amount of loans assumed to be delinquent increases over time (see the table *Delinquency Vector*); the non-conforming vector multiple (1.2 in the example above) increases the delinquency assumption to a more stressful level depending on the rating scenario, as it is assumed that delinquencies will be higher in a higher ratings scenario. The B WAFF will be specific to the individual transaction.

A delinquency rate of 3.5% in a month implies that 3.5% of the performing balance in the pool goes into delinquency during that month. Once a loan becomes delinquent, Fitch assumes it stays delinquent for 6 months after which the borrower agree an arrangement period with the lender to clear the accumulated interest arrears and that it will take further 12 months before the borrower clears the accumulated arrears.

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