

Criteria | Structured Finance | RMBS:

Methodology And Assumptions For Analyzing The Cash Flow And Payment Structures Of Australian And New Zealand RMBS

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Methodology And Assumptions For Analyzing The Cash Flow And Payment Structures Of Australian And New Zealand RMBS

(Editor's Note: This criteria article originally was published on June 2, 2010. We're republishing this article following our periodic review completed on June 8, 2011.)

1. Standard & Poor's Ratings Services is publishing its current approach to analyzing the cash flow of Australian and New Zealand residential-mortgage backed securities (RMBS), including prime, nonconforming, and subprime RMBS. The criteria may be revised over time, on a general or case-specific basis, as new risks, structural features, or collateral types evolve.

SCOPE OF THE CRITERIA

2. This article addresses the "payment structure and cash flow mechanics" principle discussed in "Principles-Based Rating Methodology for Global Structured Finance Securities", published to RatingsDirect on May 29, 2007, and Standard & Poor's Web site at www.standardandpoors.com.

SUMMARY OF CRITERIA

3. Standard & Poor's cash flow analysis involves an assessment of whether the payment obligations on rated securities can be supported by the cash flow from the securitized assets under various stress scenarios. In addition, we stress test the cash flow to analyze whether the ratings on the securities are within our ratings stability tolerance (refer to "Standard & Poor's To Explicitly Recognize Credit Stability As An Important Rating Factor", published to RatingsDirect on Oct. 15, 2008.) This article explains our analytical approach and various stress assumptions applied to asset cash flows and the liability structures, as well as the treatment of third-party support facilities (refer to Appendix for some principles related to cash flow analysis).
4. Table 1 shows a standard set of stress scenarios we may apply, including four interest rate paths ("Up", "Down", "up and Down" and "Down and Up") and a combination of prepayment curves("High", "Low" and "Constant") and default curves("Base-case", "Front-end" and "Back-end"). We apply more specific stresses for securities structures that have unique features, payment mechanisms, or are supported by complex cash flow dynamics from the underlying asset portfolios. We also apply zero default and delinquency as one of the scenarios of standard analysis.

Table 1

Standard Cash Flow Stress Scenarios		
Interest rate stress – Up		
base-case default curve/high prepayment	base-case default curve/low prepayment	base-case default curve/constant prepayment
front-end default curve/high prepayment	front-end default curve/low prepayment	front-end default curve/constant prepayment
back-end default curve/high prepayment	back-end default curve/low prepayment	back-end default curve/constant prepayment

Table 1

Standard Cash Flow Stress Scenarios (cont.)		
Interest rate stress – Down		
base-case default curve/high prepayment	base-case default curve/low prepayment	base-case default curve/constant prepayment
front-end default curve/high prepayment	front-end default curve/low prepayment	front-end default curve/constant prepayment
back-end default curve/high prepayment	back-end default curve/low prepayment	back-end default curve/constant prepayment
Interest rate stress – Up and Down		
base-case default curve/high prepayment	base-case default curve/low prepayment	base-case default curve/constant prepayment
front-end default curve/high prepayment	front-end default curve/low prepayment	front-end default curve/constant prepayment
back-end default curve/high prepayment	back-end default curve/low prepayment	back-end default curve/constant prepayment
Interest rate stress – Down and Up		
base-case default curve/high prepayment	base-case default curve/low prepayment	base-case default curve/constant prepayment
front-end default curve/high prepayment	front-end default curve/low prepayment	front-end default curve/constant prepayment
back-end default curve/high prepayment	back-end default curve/low prepayment	back-end default curve/constant prepayment

EFFECTIVE DATE AND TRANSITION

- The criteria are effective immediately for Australian and New Zealand RMBS, including prime, nonconforming, and subprime RMBS.

METHODOLOGY

- We expect the asset cash flows to be able to withstand stresses commensurate with the ratings assigned to a security, and still meet payment obligations in a timely manner.
- Asset cash flows are typically generated from a combination of securitized assets, eligible investments, and any support facilities.
- Payment obligations may include the coupon and principal payments to the rated securities, as well as any fees and expenses of the ongoing management of the securitized assets, transaction operations. In addition, payment obligations may include other expenses that, if not met, may lead to an issuer insolvency or default on the rated securities. We expect all rated securities to receive timely payment of coupon on their invested amount outstanding and ultimate repayment of the principal under the relevant rating stress scenarios, even when coupon payments are documented to be made on the stated (or written down) amount outstanding after charge-offs.
- A cash flow analysis combines our qualitative and quantitative assessments of the amount and timing of asset cash flows available, as well as factors that may affect the cash flows. We apply a range of stress scenarios to ascertain the amount of cash flow that may be available to meet all required payment obligations in a timely manner. More specifically, the cash flow analysis assesses the robustness of structural mechanisms, the level of credit enhancements to absorb losses, the level of collections after stresses to cover expenses and coupon payments, and the amount of liquidity to meet timely payment under the relevant rating scenarios. Where an issuer has an option to redeem notes before the legal maturity date (a clean-up call option), we assume the option will not be exercised, and analyze the tail-end risk when the transaction approaches its legal maturity.
- We use Standard & Poor's chosen cash flow models to quantify the potential implications of various stress scenarios

on cash flows. Different models may be used, depending on the purpose of analysis. Cash flow modeling and simulations should reflect the nature of the assets and terms of securities, including the payment waterfall. Factors that may affect the cash flows and may change over time include:

- Defaults and delinquencies;
 - Prepayments;
 - Interest rates;
 - Asset portfolio yield;
 - Asset mix;
 - Loan features that allow redraws, further advances, and loan variations; and
 - Fees and expenses.
11. Where cash flow models are provided by the issuer or the arranger, we may compare the model outputs with our cash flow model under a common set of stress assumptions. We will update our model if the differences arise from interpretation of the intended structure; otherwise, the output of our model will be used.

CASH FLOW ANALYSIS

12. We classify residential mortgage loans underlying Australian and New Zealand RMBS into a number of representative groups based on similar characteristics, performance and cash flow behavior, and where they represent a sizable portion of cash flows. The groupings may differ for different loan pools to capture portfolio nuances.
13. We apply various stress assumptions to different representative groups. These stress assumptions are derived from an analysis of a combination of macroeconomic data (e.g. interest rate movements) industry data (e.g. default timing), issuer data (e.g. prepayment rates), and documented values and estimated values using Standard & Poor's ratings methodology (e.g. portfolio default frequency and loss severity). In assessing default frequencies and loss severities under various stress scenarios for a pool related to a particular issuer, it is possible that more severe assumptions based on industry observations will be applied if an issuer has a short operating history and information is limited.
14. Some common representative loan groups include loans with:
- Interest-only periods and bullet maturities;
 - Full principal amortization;
 - Variable interest rates;
 - Fixed interest rates;
 - Significant interest rate differentials;
 - Different seasoning;
 - Significantly different maturity profiles;
 - Different documentation types; and
 - Varying credit profiles.
15. In addition, we apply stresses to the following factors, which typically affect cash flow availability and stability:
- The proportion of defaulted loans in the portfolio (or default frequency, as estimated using Standard & Poor's

analytical approach; see "Australia and New Zealand RMBS: Analyzing Credit Quality", published to RatingsDirect on Feb. 21, 2007), the timing of default, and the recovery timing after default;

- Portfolio repayment and prepayment rates;
- Changes in net portfolio yield over time; and
- Movements in interest rates over time.

Default And Recovery Timing Assumptions

16. Data provided by lenders' mortgage insurance (LMI) providers in Australia since 1965 shows that, while the timing of default for loans originated in different vintages can vary with the timing of economic cycles, a majority of the defaults tend to occur within the first five years. Table 2 shows our base-case, front-end, and back-end assumptions for default timing, otherwise known as default curves for standard Australian and New Zealand prime RMBS. An earlier default timing applies to subprime RMBS to reflect our observation that portfolios with a weaker borrower profile tend to see defaults earlier. If issuer-specific observations suggest that the default timing can be materially different from the base case, we may make adjustments to all curves to reflect that. The front-end and back-end default curves for subprime RMBS are derived from the prime RMBS curves, with adjustments reflecting observations specific to the subprime sector, issuer, and portfolio composition, which tend to vary greatly from prime RMBS. The cumulative default rates we use are estimated by applying our credit analysis criteria, and the default rate is applied to the original balance of the asset pool. However, we will also assess the robustness of cash flows after applying a zero default and delinquency assumption.

Table 2

Base-Case Default Timing Assumptions For Australian And New Zealand Prime And Subprime RMBS				
Default curve	Prime base case	Prime front-end	Prime back-end	Subprime base case
Month				
4				5%
7	10%	10%		10%
12	15%	25%	5%	15%
18			15%	25%
24	25%	30%	25%	25%
36	25%	20%	25%	15%
48	15%	10%	15%	5%
60	10%	5%	10%	
72			5%	

17. In addition to the standard stress scenarios, we may shift the default timing forward or backward or alter the pattern to test the sensitivity of cash flows and any implications for rating stability. For example, loan pools that are seasoned could experience defaults faster than those less-seasoned portfolios. On the other hand, required payments on securities that are subject to pro-rata pay mechanisms can be more exposed when defaults occur later in the life of a rated security.
18. We apply a 12-month lag for recovery after borrower default for properties in metropolitan and inner-city locations, and 18 months in nonmetropolitan locations (see "Australia and New Zealand RMBS: Analyzing Credit Quality", published to RatingsDirect on Feb. 21, 2007). For cash flow modeling purposes, we take a weighted average of the

number of months to foreclosure across the whole pool. The foreclosure period assumption can be altered if the actual recovery timing observed relating to a particular originator or servicer significantly differs from industry ranges and our base assumptions.

19. Some loans can become delinquent and cure subsequently. Although these loans don't reduce the ultimate cash flow, they affect the timeliness of cash flow. When assessing liquidity adequacy, we assume loans in an amount equal to one-half of the default frequency would become delinquent over a six-month period, and then would take 12 months to cure. Where payment holidays (i.e. a loan is not considered in arrears until the scheduled balance is greater than the current balance) are a prevalent loan feature in portfolios, the stressed delinquency is assumed to be two-thirds of the default frequency rather than one-half, due to the additional stress on timing of cash flow from the payment holidays.

Prepayment Rate Assumptions

20. Standard & Poor's base-case constant prepayment rate (CPR) assumptions for Australian and New Zealand RMBS are derived from our analysis of industry data (see table 3). Bespoke curves are generated from these base-case curves for most issuers. Further consideration would be given to collateral differences and any documented further-advance limits or repurchase rights that may affect the expected prepayment rates.

Table 3

Standard & Poor's Base-Case Constant Prepayment Rate (CPR) Assumptions For Australian And New Zealand RMBS						
Mortgage Seasoning	Prime RMBS			Subprime RMBS		
	High CPR (%)	Low CPR (%)	Constant CPR (%)	High CPR (%)	Low CPR (%)	Constant CPR (%)
1-12 months	20	5	20	30	10	30
12-18 months	25	5	20	40	10	30
18-36 months	35	5	20	50	10	30
36+ months	40	5	20	60	10	30

21. Apart from the base-case prepayment rate assumptions, we apply a range of stressed prepayment rates to cash flows. Assumed high, low, and constant prepayment stresses will represent a stress from the actual high and low prepayment trends experienced by loans from the related originator. The timing and magnitude of prepayments affect the timing of investor principal repayment as well as the amount of excess yield that is available to cover credit losses and transaction expenses.
22. Our assumed prepayment rates are inclusive of voluntary and involuntary prepayments (prepayments caused by defaults). In most circumstances, there is a trade-off between voluntary and involuntary prepayments embedded in the total prepayment rate. For example, if the default frequency (or involuntary prepayment) is higher, then the voluntary prepayment is lowered, as the total prepayment rate is held the same. However, portfolios that possess characteristics where the transaction can simultaneously experience fast voluntary and involuntary prepayment rates will have higher total prepayment assumptions, to account for the high levels of both voluntary and involuntary prepayment rates.
23. Australian RMBS have historically exhibited faster prepayment speeds in a stronger economic environment. The observed changes in prepayment speeds as economic conditions change have been more significant for subprime and nonconforming RMBS than prime RMBS (see Standard & Poor's quarterly publication of "Australian RMBS

Performance Watch" for aggregated Australian RMBS prepayment rates, published to Standard & Poor's Web site at www.standardandpoors.com). Overall, the average annualized prepayment rate have been 20% or higher.

Portfolio Yield And Margin Compression

24. Portfolio yield/income refers to interest collections on securitized loans and other returns from the loan portfolio or eligible investments.
25. Typically, in Australian and New Zealand RMBS, the transaction manager or servicer undertakes to set interest rates on loans at levels where the portfolio yield can, at a minimum, meet required payments (referred to as the threshold rate mechanism). This may be achievable where securitized assets consist of predominantly discretionary variable rate loans, and where the lender has the ability to adjust the interest rate at any time and theoretically by any magnitude. In practice, most lenders adjust the interest rate on the loans when the central bank changes the overnight cash rate to keep margins constant. Any adjustments above or below cash rate changes tend to be driven by competitive pressures or changes to a lender's own funding conditions.
26. Significant and rapid interest rate increases on the housing loans could cause payment "shock" to borrowers. In our cash flow analysis, unless documented otherwise, we assume a servicer's ability to increase the portfolio margin to meet obligations on the liabilities is limited to a maximum of 0.5% without altering prepayment and default rates. We could adjust the prepayment and default rates where the portfolio yield increases beyond 0.5%. This is based on our opinion of the point at which the increase in borrower interest rates could give rise to concerns under consumer protection acts and the effect such margin increases would have on the probability of default for the loans.
27. Apart from lenders consciously reducing margins on loans when faced with intensive industry competition, the overall portfolio yield could naturally decrease through the life of the rated securities if loans with higher interest either prepay or default. This could occur when the remaining portfolio comprise fixed rate loans with lower interest rates. Consequently, we may assume the portfolio yield will compress toward the lower of the observed portfolio yield or the minimum documented yield over time. We do this to assess the impact of yield compression on available cash flows on a month-to-month basis; in particular, we assess structural mechanisms established to cover yield deficiencies or capture excess spread.
28. Deferred establishment fees, penalty interest or fees for delinquent or defaulted loans, and returns from cash or other eligible investments may be sources of other income that contribute to the overall portfolio yield. We rely on a demonstrated history of cash flow certainty and stability from other sources of income to determine how much credit to give to these other income items.
29. We assume that the cash held for the benefit of the special purpose entity (SPE) in collections or reserve accounts would return the lower of the actual rate and bank bill rate (BBSW in Australian or BKBM in New Zealand) minus 0.5%, unless there is an eligible guaranteed investment contract (GIC) in place.

Interest Rate Stresses

30. Our interest rate simulation model is based on the Cox-Ingersoll-Ross model (CIR model) for determining interest rate assumptions appropriate at different ratings levels (refer to "Criteria for U.S. RMBS Interest Rate Vectors Revised", published to RatingsDirect on Oct. 29, 2004). This model derives four curves for each rating level - "up",

"down", "up then down" and "down then up". Inputs to the model come from the historical data for the index being considered (for Australia and New Zealand, the BKBM and BBSW). The interest rate stress assumptions are applied to both asset and liability cash flows.

Expenses And Extraordinary Costs

31. Our global criteria "Indemnification of Expenses and Liabilities by SPE Issuers", published to RatingsDirect on Feb. 6, 2001, provides that fees and expenses in a transaction are either measurable or subordinated, and transaction parties are obligated to perform their functions in exchange for these fees and expenses. We need to form the view that the cash flow or available reserves can cover such fees and expenses under relevant rating stresses.
32. While fees and expenses are typically stipulated in transaction documents, we assume that some unexpected costs and expenses may arise during the transaction's life, and that some transaction parties' fees may increase, especially when a replacement party is required. The free cash flow available or cash reserve from securitized assets need to be sufficient to cover necessary costs and expenses, and enable transaction parties to perform their duties in managing the transaction and servicing the loan portfolio.
33. In an Australian or New Zealand RMBS, the most significant fee is typically the servicer fee. We assume a servicer fee of 0.35% on the mortgage pool balance for prime RMBS, unless the actual servicer fee is higher. The higher assumed servicing fee accounts for the possibility that the servicing fee may increase, as a more intensive servicing effort is required for a deteriorating portfolio in adverse conditions, and to provide a fee that is more attractive to a replacement servicer if needed.
34. We may assume a fee higher than 0.35% if we view the likelihood of servicer replaceability as limited, especially where the loan products or borrower types in the loan portfolio are unique and require specialized servicing. For example, in subprime RMBS we assume a servicer fee of the higher of actual or 0.50%, subject to a dollar floor per year up to A\$500,000, which reflects the observed market conditions and other structural supports. The floor accounts for the scenario where a replacement servicer could request a dollar floor to the servicer fee to cover costs as the portfolio size has reduced, rather than relying on a fixed percentage fee; this applies where specialized servicing is required and the replacement options are limited.
35. Fees for other supporting parties, such as the trust manager, trustee, security trustee, and liquidity facility provider, are generally taken as actual costs, unless the rates are below-market rate, in which case estimated market rates are modeled in our cash flow analysis. Given that portfolio servicing and transaction management are critical functions, these fees will be treated as senior expenses, irrespective of where they are classified in the payment waterfall.
36. Other than transaction party fees, other unexpected expenses may arise during the life of a rated security, such as when amending transaction documents, costs associated with perfection of title, and any other unexpected costs required for the orderly maintenance of the assets. In the absence of any structural mechanism—such as a replenishable cash reserve, with a minimum of A\$150,000 for domestic issues and A\$250,000 for offshore issues—to provide for extraordinary expenses, we assume extraordinary expenses of up to 0.25% per year in our cash flow analysis. The maximum 0.25% will apply to a portfolio size of A\$500 million or below.

Minimum Liquidity Requirement

37. Typically, income collections from a mortgage portfolio underlying RMBS are used to meet payment obligations before principal draws, and liquidity supports are used to cover payment shortfall that may arise from timing mismatches. Liquidity support may be in the form of cash reserves or a third-party liquidity facility provided by an appropriately rated counterparty or timely payment cover (TPC) provided by lenders' mortgage insurers to cover the payment shortfalls. We need to form the view that the liquidity support can cover any payment shortfall under relevant rating stresses throughout the life of the rated security subject to a liquidity support floor of 0.25% of the original issuance balance (in addition to timely payment cover (TPC) provided by lenders' mortgage insurance).
38. Where an originator or servicer has an established process and history for claiming under TPC, we give partial credit to TPC depending on the LMI provider's rating, as per our RMBS rating methodology (refer to "Lenders Mortgage Insurance: A Form of Credit Enhancement to Australian RMBS" published to RatingsDirect on Feb. 1, 2002). We also factor in a two-month time lag between the claim being made and the payout received under the TPC, unless in practice it actually takes longer.
39. Where principal collections can be temporarily used to cover interest and expenses payment shortfalls, we expect principal amounts used to be reinstated with future income collections. Any conditions associated with the used of principal collections for this purpose will be captured in the cash flow modeling.

STRUCTURAL ANALYSIS

Pro-Rata Pay Mechanism

40. Australian and New Zealand RMBS typically have a sequential-pay structure for payment of principal (paying off highest ranking notes first). Some allow for pro-rata payment if the performance is within documented target levels for arrears, net losses and prepayment speeds, as well as if the credit enhancement available as a percentage of outstanding balance significantly exceeds the initial percentage.
41. We assess pro-rata triggers and payment mechanisms to form a view of whether credit enhancements available are maintained at levels that can withstand expected losses under the relevant rating stresses. Given pro-rata payment mechanisms can reduce the credit enhancement available for rated notes, we may stress test the cash flow with back-ended default curves (see table 1). We compare the documented triggers with respect to arrears, and net losses with historical experience of loans originated by the relevant originator through a benign economic environment, as well as against industry benchmarks. Structures with performance-based triggers that easily allow pro-rata payment are more likely to fail under our back-end default scenarios and thus would warrant higher initial credit enhancements for rated securities. We also look for triggers such as:
 - No carry-over charge-offs to any securities (rated or unrated) over the preceding 12 months;
 - The total outstanding collateral balance is at least 10% of the total original collateral balance, as a mitigating factor to adverse selection risk at the tail-end of the transaction.
42. Many transactions are structured to pay pro-rata from early on in their lives. If pro-rata payment is proposed to occur earlier than five years from closing, and the above performance tests are all met, we apply a higher credit

enhancement level for the rated securities, unless the hard credit enhancement available in the structure aligns with the following benchmarks:

- 3 times (x) its credit enhancement percentage at closing, no lockout period;
 - 2.5x its credit enhancement percentage at closing, one-year lockout;
 - 2.0x its credit enhancement percentage at closing, two-year lockout;
 - 1.5x its credit enhancement percentage at closing, three-year lockout; and
 - 1.25x its credit enhancement percentage at closing, four-year lockout.
43. Under these benchmarks, if, for example, a transaction was structured to allow pro-rata payment from the second anniversary of the closing date of the transaction (being a two-year 'lockout period'), the transaction would need to meet all of the performance tests, as well as having an available credit enhancement level (expressed as a percentage of outstanding balance) equal to or greater than two times the credit enhancement level at closing (expressed as a percentage of outstanding balance at closing). If a transaction is five years' seasoned, there would be no test concerning credit enhancement; only the performance tests and additional triggers listed above would apply.

Modeling Short-Term Rated Securities

44. Some Australian RMBS structures incorporate a short-term tranche with a legal maturity of 12 months. These securities are typically assigned a short-term rating from Standard & Poor's (usually 'A-1+'). In general, we form a view whether the scheduled principal due to be received from the underlying assets, after rating stresses are applied, can repay the short-term securities on or before their legal maturities. Rating stresses will include the impact of delinquencies, defaults, and the ability to apply principal collections for other purposes, on ultimate principal collections available to repay the short-term securities within 12 months. In a standard RMBS, we find cash flow strain to the short-term notes is most severe when there is 0% prepayment combined with high early defaults that take more than 12 months to recover.
45. In some limited instances where more than five years of comprehensive historical voluntary prepayment data are available by product type, we may consider giving limited credit to voluntary prepayments. The historical prepayment rates will be assessed in the context of industry trends as well as the portfolio characteristics that determine payment behavior.

Substitution Period

46. Many Australian and New Zealand RMBS incorporate a substitution period, where new loans can be added using principal collections. During this period, the issuer can reinvest principal collections received in additional eligible mortgage loans. Substitutions increase the number of loans that circulates through the transaction, and can change the credit profile of a given portfolio.
47. Substitutions are typically governed by portfolio parameters and eligibility criteria, including underwriting standards, to ensure the credit profile of the portfolio remains relatively consistent.
48. Where issuers do not provide us with the loan pool details before adding new loans in, we will make worst-case assumptions concerning substitutions, based on the governing documented portfolio parameters and eligibility criteria, to arrive at the credit enhancement and liquidity support levels consistent with the ratings assigned to the

securities.

Redraws And Further Advances

49. Some loans have redraw features that allow borrowers to re-borrow amounts previously prepaid under their loans up to the scheduled amortization balance of the loan. In addition, some borrowers may be granted further advances under the same loan.
50. We focus our analysis on the ability of the trust to fund the redraws and further advances, and how the incremental credit risk associated with redraws and further advances is provided for. Treatment of the additional credit risk is described in "Australia and New Zealand RMBS: Analyzing Credit Quality" (published to RatingsDirect on Feb. 21, 2007).
51. Redraws and further-advances may be funded using principal collections received in that period, note issuance proceeds held in liquid authorized investments, further note issuance, or a facility from a suitably rated financial institution. Where an external facility or further note issuance is possible, cash flow modeling should reflect their payment terms and priority in the payment waterfall.

Set-Off Risk

52. A right of set-off may exist where the seller of securitized asset to the special-purpose entity is a deposit-taking institution, and borrowers maintain deposit accounts that are "connected" in some way to the loan. Where set-off is possible, we expect to see suitable mitigating factors. Standard & Poor's incorporates this risk in our cash flow analysis.
53. In most cases, the loan documentation contain a waiver of set-off and the issuer's lawyers are able to provide an opinion confirming that any deposit balances in these accounts will not be available to set off against the loan balances (irrespective of whether the loan agreement contains a waiver of set-off rights).

Appendix

Some Principles Of Cash Flow Analysis

The credit analysis is a static analysis. It has no time component, but refers to ultimate losses we expect for a given pool of assets under various rating stresses. However, rated securities exist through time and usually receive coupon payments periodically until their full redemption. Furthermore, a securitization structure may have multiple classes of bonds with different coupon rates and different final maturities.

54. A cash flow analysis may be used to incorporate a time element in the rating analysis. This analysis models inflows or cash to the SPE, primarily from the assets, and outflows of cash in accordance with the waterfall.
55. In general, cash flow analysis tests the following questions:
 - Are the cash flow mechanics of the structure designed to result in full payment to investors in each rated class under the stress scenarios for the rating level? (Establishing the stress scenarios generally involves forming a view

on such factors as delinquencies, defaults, recovery periods and values, interest rate risks, prepayment risks, yield deterioration, negative carry or reinvestment risks, maturity or refinancing risks, and different combinations of these factors).

- Does the payment waterfall allow for any cash flow "leakages"? Examples include withholding tax or other taxes, step-up interest costs, commingling risks (the risk that the SPE's cash, such as monthly collections, is temporarily mixed with the cash of a third party, such as the originator) and replacement servicer fees.
- Are the mechanics for drawing on credit enhancements and liquidity enhancements designed to assure timely payment of interest and principal to rated bond holders?
- What is the potential impact of events of default and other "trigger events" on the availability of asset cash flows for payment to the bond holders?

56. The assumptions applied in the cash flow analysis, like the credit analysis, are stressed for different rating levels. Like the credit stresses, these assumptions are usually increasingly severe as they relate to higher rating categories. The following questions—although not an exhaustive list—are typically addressed in determining the appropriate assumptions for a cash flow analysis:

- How can the asset portfolio yield change over time? Are interest rates on the loans in the pool the same, or are different borrowers charged different rates? Are borrowers entitled to a discount for being able to meet their payments on a timely basis? Can defaults or prepayments lead to changes in the weighted average portfolio yield?
- How can the coupon rate on the liabilities change over time? (The weighted average coupon rate on the liabilities at the start of a pass-through payment structure is usually significantly lower than later in the life of the rated bonds, as the more senior bonds pay down.) Are there any step-up margins?
- Are there any key service providers to the SPE, notably the servicer, where it may be appropriate to assume a higher replacement provider fee in the event that the primary provider resigns or is removed during the life of the transaction?
- What is the timing of any expected recoveries – related to when the assets default and relative to the term of the securitization bonds?
- To what extent could prepayments or refinancings affect the overall credit profile of the pool and leave a higher proportion of less-creditworthy borrowers in the pool?
- How are the transaction fees calculated? For instance, are they a basis fee equivalent of the SPE's outstanding asset or liability balance, or are they an absolute fixed amount? Fixed amount fees may appear insignificant at the start of the transaction, but can become a more significant yield drain as the bonds pay down.
- If the fees are variable, what are they based on? For instance, in a residential housing loan pool, is the servicing fee based on the outstanding balance of housing loans, the total liability balance, or a facility limit rather than its drawn amount? If the servicing fee is based on the bond balance and there are points in time that the SPE is holding significant amounts of (typically low-yielding) cash, there may be increased stress on yield sufficiency.
- What are the rights of the subordinated bond holder and equity holders? If the asset performance starts to deteriorate, do these investors continue to receive interest on the face value of their investment, or on some written down value?
- If the rated bonds are subject to a pro-rata structure, and excess spread is paid out of the structure to the extent it is not needed in that payment period, or if credit and liquidity enhancements are allowed to amortize, is there sufficient credit and liquidity support if, for instance, asset-defaults are concentrated toward the back-end of the rated bonds' lives?

Related Criteria And Research

- Principles-Based Rating Methodology For Global Structured Finance Securities, published May 29, 2007
- Australian and New Zealand RMBS: Analyzing Credit Quality, published Feb. 21, 2007
- Lenders Mortgage Insurance: A Form of Credit Enhancement to Australian RMBS, published Feb. 1, 2005
- Guide To Legal Issues In Rating Australian Securitization, published March 1, 2005
- Standard & Poor's To Explicitly Recognize Credit Stability As An Important Rating Factor, published Oct. 15, 2008
- Methodology: Credit Stability Criteria, published May 3, 2010
- Criteria for U.S. RMBS Interest Rate Vector Revised, published Oct. 29, 2004
- Australian RMBS Performance Watch, see most recent quarter
- Indemnification of Expenses and Liabilities by SPE Issuers, published Feb. 6, 2001

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