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Housing Loans[1]

1. Risk of Housing loan and Credit Enhancement

Credit enhancement for residential mortgage backed securities (RMBS) can be broken down into four tranches: The first tranche in response to bad-loan risk; tranche in response to interest-rate risk; tranche in response to commingling risk; and the final tranche in response to setoff risk. The rating of RMBS is a process of calculating a required level of credit enhancement for RMBS in response to these various risks.

Credit enhancement is embedded in the RMBS scheme either in the form of collateral in excess of claims or in the form of cash reserves (Figure 1). Some RMBS schemes deem the tranche of credit enhancement and the tranche of liquidity enhancement as seller's beneficiary rights.

Figure 1:Example of correspondence relationship between underlying assets and RMBS

(Underlying Assets)	(RMBS)	
Housing loan claims	Preferred beneficiary rights/ Senior corporate bonds (Rating: AAA)	Sales to investors
Housing loan claims / Cash reserves	Subordinated beneficiary rights/ Subordinated corporate bonds (Response to bad-loan risk) (Response to interest-rate risk) (Response to commingling risk) (Response to setoff risk) (Response to liquidity risk)	Tranche of credit enhancement Tranche of Liquidity enhancement

(1) Bad-loan risk

Credit enhancement in response to the bad loss risk is in preparation for losses arising from loan defaults by debtors and their bankruptcy. The credit enhancement (in response to the bad-loan risk) is calculated by an analysis of the trend of bad loans and in consideration of the delinquency percentage and prepayment percentage before maturity based on historical data of the housing loan pool. The following is cited as the feature of housing loan claims: With residential houses offered as collateral, debtors have a strong will to repay their housing loans and they place a high priority on repayments of

[1] Rating investment purpose condominium loans follows basically the same methodology presented herein.

their housing loans, so housing loans are the claims whose bad-loan percentage is relatively low in comparison with shopping credits and cashing advances.

Since the bad-loan percentage is apt to heavily hinge on debt to (yearly) income ratio (DTI), loan to value ratio (LTV), business categories of debtors, passed years of claims, and other attributions of the housing loan pool, individual attributions should be analyzed in details. DTI is the ratio of the amount of annual repayment by a housing loan debtor to its annual income. The higher the DTI ratio, the heavier is the burden of monthly repayments on the debtor. Generally speaking, it becomes difficult for the debtor to cope with decreases in its income, increases in its expenses, and other changes. Consequently, the bad-loan percentage and the delinquent-loan percentage tend to become higher. The LTV (loan to value ratio) is the ratio of the amount of a housing loan claim to the price of collateral real estate. Generally speaking, a housing loan shows in many cases the higher the LTV, the less amount of money to spare the debtor has on hand. As a result, the bad-loan percentage and the delinquent-loan percentage tend to become higher. Even when the full repayment of a housing loan becomes difficult in the future, the lower the initial LTV the higher is the possibility that the market price of the collateral property may exceed the outstanding balance of the housing loan claim. In many cases, a housing loan with a low LTV stops short of becoming a bad loan or a delinquent loan by loan refinancing or by the sale of the collateral property at the discretion of the debtor.

Since housing loans are long-term claims, it is necessary to analyze their trend according to their elapsed years. The base parameter is calculated in consideration of the average value, standard deviation, and trend of individual parameters. Chronological development of occurrences of losses in parent claims (loss curve) and chronological development of repayments before maturity are estimated using static data, etc.

The table below shows standard stress multiplying factors of RMBS. In the case where only a short time has elapsed since the drawdown of a housing loan, the loan repayment percentage before maturity is estimated to be low.

Stress Multiplying Factors

	Bad loan/Delinquent loan	Bad loan/Delinquent loan	Repayment before maturity
	First five years	After the first five years	Entire period
AAA	3.5	3.5	0.5
A	2.5	2.5	0.5
BBB	2.0	1.5	0.75

※ In securitizing investment purpose condominium loans, stress multiplying factors greater than standard ones are adopted in some cases because debtors' willingness to repay their loans is considered not as strong as in the case of residential housing loans.

Actually applicable stress multiplying factors are determined by individual RMBS projects in consideration of the following factors.

- DTI
- LTV
- Bank’s Screening and Collection Systems
  - Particularly, the quality of underlying claims, so to speak, the probability of bad loans and delinquent loans increases and decreases depending upon the screening standard.
  - A due diligence meeting pays attention to the screening standard at the time of drawdown of a relevant loan and changes in the screening standard thereafter (when the loan balance has sharply increased at one time because of a business strategic campaign conducted by the bank, the screening standard itself may possibly have been relaxed.)
  - For example, even in the case of the same DTI, the screening standard on business conditions of a place of employment may possibly have been eased. Even in the case of the same LTV, the evaluation method of collateral properties may possibly have been eased.
- Regional economic trend (unemployment rate, land-price trend, etc.)
- Debtor’s employment conditions (salaried worker or self-employed worker)
- Age (age distribution at the time of full repayment)
- Use of funds (residential housing loans or investment purpose condominium loans)
- Regional concentration to an extremely high degree (risk of earthquake)

(2) Interest rate risk

Credit enhancement in response to interest rate risk is the subordination in preparation for a negative interest-rate spread that emerges when the interest rate of a housing loan differs from that of RMBS. The amount of credit enhancement is determined by the corresponding degree of the risk of a negative interest-rate spread. When the base (interest) rate of RMBS is equal to that of the underlying (backing) claims or when the interest-rate risk of RMBS is hedged by swaps or any other means, this credit enhancement is unnecessary.

(a) Negative spread risk involved in an interest-rate type mismatch between a housing loan and RMBS

If there is any interest-rate mismatch between a housing loan and RMBS, the mismatch poses a risk of a negative interest-rate spread. A fixed-interest-rate selective housing loan makes it possible to fix the interest rate for a certain period. At the time of expiration of the period for the fixed interest rate, the debtor can select either a fixed interest rate or a variable interest rate. It is also possible to change from a variable interest rate to a fixed interest rate. The debtor has the freedom to choose a fixed interest rate or a variable interest rate. In this context, the following cases pose the risk of a negative interest-rate spread: In a downward trend of interest rates, the debtor selects a variable interest rate, while RMBS applies a fixed interest rate; and in an upward trend of interest rates, the debtor selects a fixed interest rate, while RMBS applies a variable interest rate.

(b) Basis risk

When the base (interest) rate of a housing loan is different from that of RMBS, the risk that the latter may become higher than the former is referred to as “basis risk”.

The interest rate of a housing loan is often linked with the long-term prime rate or the short-term prime rate, while that of RMBS is often linked with “Libor” rate. In this context, when the difference between Libor rate and the prime rate is little or when the Libor rate becomes higher than the prime rate, a negative interest-rate spread emerges. The interest rate of a housing loan is usually reviewed twice a year. The path-through-type RMBS interest rate is usually reviewed on a monthly basis. Particularly in an upward trend of interest rates, the RMBS interest rate increases a head of the housing loan interest rate and becomes higher than the latter, which may possibly give rise to a negative interest-rate spread.

When a fixed interest rate is applied to the full amount of RMBS, the potential of further decreases in interest rates of underlying (backing) claims is extremely limited in the current conditions of lower interest rates. The subordination in response to a negative interest-rate spread normally remains at a low level. In recent years, however, competition in providing housing loans has been intensified with a preferential interest rate applied to them in many cases. In the case where there is a negative interest-rate spread between the RMBS fixed rate and the housing loan interest (with the former being higher than the latter) as described immediately above, there is a possibility that the credit enhancement in response to the interest rate risk may stay at a higher level.

(3) Commingling risk

The funds collected from the underlying debtors are pooled in the originator’s financial institution and after a lapse of a certain period the collected funds will be remitted to the trust bank and the SPC (hereinafter called “SPV”). If the originator becomes bankrupt during the time before the remittance of the collected funds, there is a risk that the collected funds may be commingled with the originator’s other assets.

In a RMBS project which reserves receiving from the debtors their consent to the transfer of claims and notifying them of the transfer of claims and does not make it apparent that the collected funds are covered by the deposit insurance, it is generally required to set aside an estimated equivalent amount of collectible funds for one collection period as the credit enhancement in response to the commingling risk, except in the case where the commingling risk is deemed to be small or low because the collected funds stay only one day at the originator’s financial institution and due to other reasons.

When the rating of the servicer bank falls below “BBB Flat/Negative Direction”, however, it is possible to set aside the initial reserve for the credit enhancement in response to the commingling risk by (a) additional cash in trust with the equivalent amount of the credit enhancement in response to the commingling risk within 30 days; or by (b) advance payment of an estimated amount of collectible funds.

(4) Setoff risk

When any underlying debtor has a deposit at the originator, the underlying depositor can set off the deposit due from the originator against the housing loan at the time of the originator's bankruptcy. The deposit insurance covers a deposit to the extent of the deposit amount up to ¥10,000,000. When any debtor has a deposit of no more than ¥10,000,000, there is no possibility that the debtor may take any setoff risk. In case that any debtor's deposit exceeds the benchmark of ¥10,000,000, there is a possibility that the part of the deposit in excess of ¥10,000,000 may be set off against the housing loan (the part of the deposit beyond ¥10,000,000 is hereinafter called the "amount of money exposed to the setoff risk").

For this risk, of the amount of each debtor's deposit, the amount of money in excess of the deposit insurance cap (¥10,000,000) in terms of customer protection is deemed to be the amount of money exposed to the setoff risk. For each debtor that has a deposit in excess of the deposit insurance cap, the total amount obtained by subtracting ¥10,000,000 from the result of deducting the debtor's outstanding deposit from the outstanding claim is the credit enhancement in response to the set off risk).

(5) Liquidity risk

If the originator becomes bankrupt and the delivery to the trustee of collected funds from the debtors falls into arrears, there is a possibility that payments of various charges and dividends on preferred beneficiary rights may run short of resources. In response to this risk, the following measures are taken: In the case where a fixed interest rate is applied to the relevant RMBS with a financial institution as the servicer, an amount of money equivalent to one month's dividends on preferred beneficiary rights, trust fees and other various fees are set aside as cash reserves; and in the case where a variable interest rate is applied to the relevant RMBS with a financial institution as the servicer, an amount of money equivalent to three months' dividends on preferred beneficiary rights, trust fees and other various fees are set aside as cash reserves.

2. Transfer of a Housing loan Claim, Right to Ask a Guarantor to Make Good on the Guarantee, and Mortgage

A housing loan from a bank, etc. is often accompanied by a guarantee of the guarantee company belonging to the bank to ensure that the bank secures complete performance of the housing loan due from the debtor. In this case, a mortgage is placed on the real estate owned by the debtor with the guarantee company as the mortgagee and with the prior reimbursement claim as the secured claim. After having made good on the guarantee to the bank, the guarantee company can collect the housing loan claim by foreclosing the mortgage in the form of the reimbursement claim against the debtor.

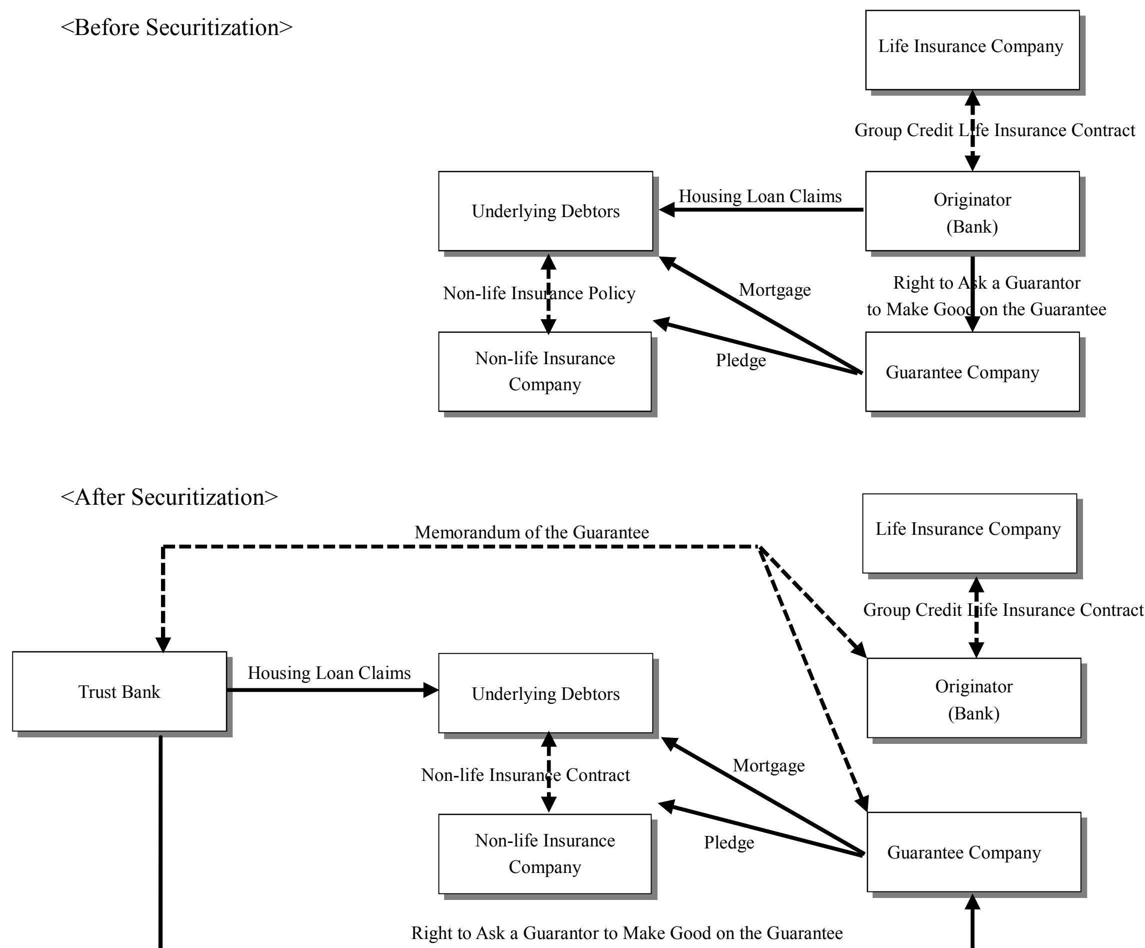
When the bank transfers the housing loan to the SPV, the right retained by the bank to ask the guarantee company to make good on the guarantee will be transferred to the SPV due to the concomitant effect of the guarantee as a matter of course. Meanwhile, the mortgage will not be transferred to the SVP

and the guarantee company will continue to hold the mortgage. It is the point of contention in the rating of a RMBS project how much the RMBS project can expect to collect the housing loan claim by asking the guarantee company to make good on the guarantee and by foreclosing the mortgage.

(1) Right to ask a guarantor to make good on the guarantee

In the case where each housing loan is accompanied by a guarantee company's guarantee, no loan losses will emerge in the housing loan pool as has been transferred to the SPV provided that the guarantee company makes good on the guarantee. A guarantee contract concluded between a bank and a guarantee company includes the (exceptional) clause that exempts the guarantor from making good on the guarantee. With the exempt events limited to the bank's violation of the guarantee contract as well as the bank's intention and gross negligence, however, if either of the exempt events applies to the bank, the bank is obliged to repurchase the relevant claim (housing loan pool) due to the bank's violation of the representations and warrantees and the consigner's violation of the commitments in the trust contract, etc. If any bad loan emerges, the bank may sometimes select the choice to hold discussions with the relevant debtor and ease the loan conditions (interest reduction and exemption, extension of the term, etc.) instead of applying the acceleration clause (event of default by the debtor) and asking the guarantor to make good on the guarantee, taking into consideration the possibility to collect the claim and other factors. In the latter case, the bank is also obliged to repurchase the claim in question due to the bank's violation of the representations and warranties and the consignor's violation of the commitments in the trust contract, etc.

Figure 2: Right to Ask a Guarantor to Make Good on the Guarantee, Mortgage, and Group Credit Life Insurance



In this context, with the following as the requirements, JCR considers it possible to give a rating to the tranche of credit enhancement in response to the bad-loan risk in such a manner that the rating reflects the ability of a guarantee company to make good on the guarantee.

- All housing loans from a bank are accompanied by a joint and several guarantee of the guarantee company affiliated with the bank.
- As a general rule, the bank has been receiving from JCR a rating at a certain level or even higher as required.
- The business unity of the bank and the guarantee company affiliated with the bank is strong (otherwise, measures are provided under the contract).
- With the guarantee contract limiting the exempt events (to the bank's violation of the guarantee contract as well as the bank's intention and gross negligence, as an example), if either of the exempt events applies to the bank, the guarantee contract obliges the bank to repurchase the

relevant claim (pool of the housing loans) due to the bank's violation of the representations and warrantees and the consigner's violation of the commitments.

In the case where the exempt event is not limited (for example, buildings are damaged by an earthquake), the RMBS scheme ensures that responses will be taken to the emergence of the exempt event.

■ If the bank eases the loan conditions (interest reduction and exemption, extension of the term, etc.), the guarantee contract obliges the bank to repurchase the claim in question due to the bank's violation of the representations and warranties and the consignor's violation of the commitments.

■ A legal opinion to the effect that the transfer of the claim is a true purchase and sale is to be submitted.

■ Credit enhancement measures in response to various risks including interest rate risk, setoff risk, etc. that cannot be covered by the guarantee contract are separately taken in the form of subordinated beneficiary rights and cash reserves.

* When the guarantee company is a subsidiary of the originator, the originator's bank takes the credit enhancement measures for a RMBS project on behalf of the group. Even in this case, the following items explain the reasons that the true purchase and sale is not impaired.

(a) The parent company's equity share of its subsidiary is a problem having a different nature from that of a transaction between the parent company and its subsidiary.

(b) Each housing loan is not accompanied by the subsidiary company's guarantee on the occasion of its securitization. Instead, the guarantee has been provided at the time of drawdown of the housing loan regardless of the securitization. Any parties involved in the securitization are aware that the relevant claim is accompanied by a guarantee of the assignor's subsidiary and conduct buying and selling transactions of the relevant claim with the pricing based on that premise.

(2) Judgment of to what extent the claim can be collected by foreclosing the mortgage

Even if the guarantee company becomes bankrupt, its mortgage will not necessarily be transferred to the SPV as a matter of course. As the guaranteed debts are cut in the process of the insolvency proceedings, the reimbursement claim acquired by the guarantor as the result of making good on the guarantee also decreases in the amount and the collection of the claim by foreclosing the mortgage is deemed to be limited to the extent of the residual claim. An RMBS scheme under which the guarantee company transfers the mortgage to the SPV or creates mortgage-on-mortgage for the SPV at the time of the closing in case it goes bankrupt is likely to increase the possibility to collect the claim by foreclosing the mortgage to a certain extent. However, under this scheme, as creation of mortgage-on-mortgage will not be perfected against debtors until the trigger events such as insolvency of the guarantee company occur, the possibility remains that the receiver/administrator may disapprove the perfection at the time of insolvency of the guarantee company when the guarantee company goes bankrupt. If the guarantee

company becomes subject to the corporate rehabilitation proceedings, the mortgage or the mortgage-on-mortgage will become the rehabilitation security rights. Accordingly, no voluntary repayments can be received beyond the scope of the rehabilitation proceedings. For the rating on the tranches higher than that of the guarantee company, recovery rate by foreclosing the mortgage is to be prudently estimated after the possibility of avoiding these legal restrictions is fully examined. When considering the recovery from collateral property, JCR sets an expected recovery rate, taking into account such factors as the price and location of such property, priority of mortgages and cost of selling the property and assumes certain time is required for foreclosure.

(3) Group credit life insurance

Each housing loan is often covered by a group credit life insurance. However, any change of the beneficiary of insurance money requires the debtor’s consent. Since the originator receives the insurance money, it is impossible to expect the positive effect of the coverage by a group credit life insurance after the originator’s insolvency. For this reason, JCR takes no effect of a group credit life insurance into consideration when assigning a rating to any RMBS project.

3. Points of Contentions in the Case of Housing loans from a Regional Financial Institution

(1) Regional concentration

For housing loans from a regional financial institution, it is impossible to avoid the fact that regional concentration of debtors becomes relatively high. The points of contention in the regional concentration of debtors are the reflection of the regional economic impacts including economic growth rates, income levels, etc. as well as earthquake risks. For earthquake risks, in the case of an extreme regional concentration of debtors, for example, when debtors are extremely concentrated on a region where earthquakes take place frequently and on the same apartment block, it is necessary to make stress adjustments and to take credit enhancement measures. JCR considers it possible to take sufficient responses to a regional concentration by implementing measures to disperse debtors, for example, by means of preventing the debtors from their concentration in the same community, etc.

Concerning regional economic impacts, it is necessary to conduct a survey of unemployment rates and other economic indices, research of the land price trends, and so on and to take into consideration their impact on the extracted housing loan pool.

For a RMBS scheme that avoids the risk of regional concentration of debtors, the following securitization efforts should be seriously taken into consideration: For example, housing loans from multiple regional institutions that are regionally dispersed are collectively securitized.

(2) Subordination in response to setoff risk (setoff subordination)

A regional financial institution having a few or little competitors is often deemed to function as the main bank where consumers in the region maintain their payroll accounts. Besides, in comparison to

urban areas, debtors of housing loans are often expected to hold their savings accounts there. Concerning a RMBS project with a regional financial institution as the originator, JCR believes that it is a problem to be carefully investigated how much the RMBS Project should take credit enhancement measures for the setoff subordination.

4. Monitoring

In principle, JCR monitors the performance of underlying assets and reviews the rating as long as a rated debt is outstanding. JCR conducts monitoring on a constant basis to check the performance of underlying assets, including the monthly default rate; changes in the subordination ratio; and capabilities of parties to the structure to carry out their duties. When conducting the review of credit ratings, JCR reexamines, as necessary, the base rate and other rating assumptions in light of the performance of underlying assets and economic conditions and analyses cash flows based on these assumptions with due consideration given to the remaining term of securitization products. Rating review is held on a regular basis, as well as on an ad hoc basis as necessary in case of a sudden change or event.

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