

Moody's Approach to Rating SME CLOs with RiskCalc Japan

AUTHOR:

Yusuke Seki
Vice President – Senior Analyst
(813) 5408-4100

CONTACTS:

Tokyo

Keiko Kurasaki
Senior Vice President
(813) 5408-4100

Naoki Yamauchi
Managing Director
(813) 5408-4100

London

Daniel Curry
Group Managing Director
(44) 20 7772-5491

Paris

Paul Mazataud
Managing Director
(33) 1 5330-1037

New York

Jerry A. Gluck
Team Managing Director
(212) 553-3698

WEBSITE:

www.moody's.com

INTRODUCTION

In 2002, Moody's Investors Service started using RiskCalc™ Japan for private companies¹ in its ratings of CLOs backed by loans to small- and medium-size enterprises (SMEs). As of end-January 2003, Moody's had used this analytical tool to rate 7 CLO deals, including 6 publicly rated transactions² (Table 1).

Since the birth of Japan's structured finance market, we have seen many structured finance securities backed by SME credits, such as ABS with lease receivables. To rate these deals, we apply the so-called ABS approach, in which historical default rates are considered along with well-diversified collateral pools³.

Japanese banks then started in 2002 to securitize loans to SMEs, prompting Moody's to start using RiskCalc Japan in evaluating the default probabilities of obligors in collateral pools, instead of historical default rates.

The number of CLOs rated with RiskCalc Japan is increasing because: [1] RiskCalc Japan can be easily applied to the SME portfolios of Japan's banks, given the availability in the banks' databases of financial data on the borrowers, and [2] in terms of evaluating the quality of collateral pools, this analytical tool – by relying on financial data, rather than historical default rates – seems more reliable (as will be discussed later).

RiskCalc is also used for rating CDOs in other markets, such as the US and Europe. For example, RiskCalc is used to construct so-called mapping tables which identify the relationship between a bank's internal rating scale and Moody's rating scale. However, in Japan, RiskCalc is typically used to evaluate the default probabilities for all the obligors in a pool. This is because the internal rating systems of major Japanese banks were developed or upgraded only several years ago, so do not yet have enough historical data to prove their dependability. Moreover, RiskCalc is thought to make CLO ratings more reliable as it can evaluate all the obligors in the pools. Thus, the direct application of RiskCalc allows us to avoid much of the statistical errors that inevitably accompany any "mapped" relationships.

In this report, we intend to clarify our opinions on the merits and demerits of RiskCalc Japan, and how this tool can be applied to rating CLOs, given the increase in such ratings using RiskCalc Japan. This report only covers RiskCalc Japan and does not cover any other versions. And the report only includes our current opinions. Reflecting other factors, changes may occur going forward.

1 RiskCalc™ Japan for private companies is a product of Moody's KMV. Please see Moody's Special Report "Moody's RiskCalc™ for Private Companies: Japan," December 2001.

2 With transactions other than CLOs, Moody's has so far rated 9 with RiskCalc Japan.

3 Please see Moody's Special Report "Credit Enhancement Analysis in Japanese Auto Loan-Backed Securitization," December 2001, and "Moody's Approach to Japanese Corporate Credit Pools in ABS/CLO Deals," January 2003.



Table 1
CLO Transactions Publicly Rated with RiskCalc Japan by January 2003

Deal Name	Closing	Issue Amount	Originator
Oberek Limited	March 2002	JPY 1 trillion (ceiling)	UFJ Bank
Oberek II Limited	March 2002	JPY 500 billion (ceiling)	UFJ Bank
SMBC CLO I	November 2002	JPY 143.5 billion	Sumitomo Mitsui Banking Corporation
Proton Limited	December 2002	JPY 18 billion	Sumitomo Mitsui Banking Corporation
Daiwa Bank – Osaka CLO 2003-01	January 2003	JPY 25.2 billion	Daiwa Bank
Aozora MasterTrust Senior Alpha SPC	January 2003	JPY 50 billion	Aozora Bank

Merits and Demerits of RiskCalc Japan

There are 3 methods for estimating the expected default probabilities in collateral pools when rating Japanese CLOs backed by SME loans:

[A] Analyst-provided rating estimates for each obligor

[B] Application of RiskCalc Japan to each obligor

[C] Historical default rates

Of the 3, [A], or estimating ratings for each obligor, is the most reliable method. However, this method can not be realistically applied to SME pools because such pools generally consist of so many obligors that analyst-provided individual estimations would be costly and time consuming.

A simpler method involves estimating expected default probabilities from [C], or historical default rates. Such an approach is generally used to rate ABS. However, in order to apply this approach, we would have to assume that the securitized pools would show the same default probabilities as those seen in the pools from which historical default rates were observed. Therefore, the following must in addition be checked: [1] Whether any differences exist between the pools in terms of the characteristics of the obligors, such as their size and industries; [2] whether any changes have occurred in the originators' underwriting and collection policies, and [3] whether the environments for the relevant SMEs have changed or not. Furthermore, in the case of CLOs – where the underlying loans are originated for the purposes of securitization for obligors who need to borrow them – it is more difficult to use historical default rates because the pools in such deals are tilted towards obligors, who to some extent are short of liquidity.

In terms of assessing obligors, [B], or RiskCalc Japan, is somewhere between [A] and [C]. The tool was developed with historical default data and financial data – provided by major Japanese banks – on thousands of SMEs. As such, RiskCalc Japan estimates the default probabilities of obligors through considering their financial data. Therefore, RiskCalc can be applied to thousands of obligors simultaneously and at costs lower than those for analyst-provided estimates, assuming the required financial data is available. In addition, the default probabilities produced by RiskCalc reflect each obligor's individual characteristics and do not need to heavily consider changes in the underwriting and collection policies of originators.

Consequently, using RiskCalc Japan has merits. However, we should check the accuracy of its default probabilities. Moody's Japan has conducted intensive research on its applicability for various kinds of obligors and found that RiskCalc Japan does not negatively impact on the creditability of our CLO ratings in normal loan portfolios. And, according to another study by Moody's KMV, its performance is not worse than that of method [A], which involves rating estimates for each obligor.

However, having said that, we also admit there are concerns over whether RiskCalc Japan fails to take into account some obligor risk factors because, as a quantitative credit evaluation model, it typically uses only factors derived from financial data.

We now discuss how to use RiskCalc Japan to rate CLOs. In this discussion, we conservatively assume that RiskCalc Japan does not perform as well as method [A].

How to use RiskCalc Japan in rating CLOs

From the standpoint of this report, we believe it would be more useful to discuss the question of “How to Use RiskCalc Japan in CLO Ratings” than that of “Whether RiskCalc Japan is Good or Not”.

In rating CLOs, Moody’s conservatively uses higher default probabilities than those produced by RiskCalc Japan in order to offset possible model error⁴. Although the extent of this adjustment varies from transaction to transaction, it should be determined in consideration of the following factors, Pool Diversification, Pool’s Eligibility Criteria and Pool Similarities (listed below).

- **Pool Diversification**

Even if the default probabilities produced by RiskCalc Japan are subject to model error, the average default probabilities in well-diversified pools should ultimately converge at the “true” mean. This is because the errors in such probabilities cancel each other out through averaging.

- **Pool’s Eligibility Criteria**

The more the obligors in each pool are screened by various eligibility criteria, then the lower the need for adjustments on default probabilities. This is because the screening process is likely to remove from the pools obligors with extraordinarily low credit levels and for which RiskCalc is not well suited. The eligibility criteria may include the internal ratings of the originators, financial variables which correlate less with RiskCalc Japan factors, as well as the default probabilities of RiskCalc Japan itself.

- **Pool Similarities**

As indicated, RiskCalc Japan was developed with SME data from major Japanese banks. Therefore, the greater the similarities in obligor characteristics, originator franchises, origination policies and so on of the securitized pools to those in the SME data on which RiskCalc is based, the lower the need for adjustments on default probabilities.

It is worthwhile pointing out that the above 3 factors are also usually required when historical default rates are used to rate ABS backed by assets, such as lease receivables in Japan.

Consideration must also be given to [1] the difference in the definition of default between CLO and RiskCalc, [2] the time lag between the date of each obligor’s financial data and the dates the securitizations are executed, and [3] whether any changes have occurred in the SME environments since RiskCalc Japan was calibrated or re-calibrated.

Moral Hazard

Finally, with CLO transactions backed by bank loans to SMEs, there is a possibility of higher default rates in the relevant pools than those suggested by RiskCalc Japan because of the moral hazard of the banks. Any analysis needs to eliminate any scenario, which, for example, involves deteriorations in a bank’s lending attitude towards its obligors after any securitization and the chance that this, in turn, leads to default among the obligors. Moody’s recommends that CLO transactions in Japan should be structured with the following in mind:

- **Information Control in Banks**

The banks must confine data on which obligors are securitized to their securitization departments. This prevents any change – arising from information leaks to other departments – in their stances on lending towards the obligors and on servicing of the securitized loans. However, this is probably not a concern if the credit quality of the obligors is so high that any reasons for change are absent.

- **Avoiding Excess Hedging**

With synthetic transactions, payments received by the banks from credit default contracts – activated after credit events occur – should not exceed their actual loss amounts.

4 One way to determine an appropriate level of adjustment for a default rate is to incorporate into CLO modeling a probability distribution model error that is centered around the average default rate. We would then see the impact on the expected loss for each tranche.

- **Definitions of Credit Events**

In synthetic transactions, if “restructuring” is included in the definition of credit events, then those obligors – with whom the banks reschedule their loans but whose credits are not as low as that of default level – could trigger credit events.

- **Random Selection of Obligors**

In the case of CLOs backed by loans already held by the banks, obligors are placed in securitized pools after random selection from a wider group of obligors who satisfy the eligibility criteria. Because the main lender to an obligor has a great deal of information on that obligor, banks should not have the right to select which obligors are securitized. Otherwise, the bank may be tempted to put into the pools the weakest loans for given RiskCalc scores. At the same time, this concern could be mitigated to some extent if the banks retain some of the risk.

Although it does not constitute an instance of moral hazard, the bankruptcy of the originator banks could lead to higher default rates in securitized pools if those pools contain numerous numbers of obligors whose main lenders are the originators. This may not be a critical issue in synthetic transactions, because they would typically terminate when the banks default. But it may be an issue in cash flow transactions because the loans in these cases have already been assigned and any defaults by the banks would only result in early amortizations of the transactions. In these cases, more subordination would be needed, or worse, CLOs may not be assigned target ratings because their ratings would be partly linked to the ratings of the banks.

SFisf

© Copyright 2003, Moody's Investors Service, Inc. and/or its licensors including Moody's Assurance Company, Inc. (together, "MOODY'S"). All rights reserved. **ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY COPYRIGHT LAW AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.** All information contained herein is obtained by **MOODY'S** from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, such information is provided "as is" without warranty of any kind and **MOODY'S**, in particular, makes no representation or warranty, express or implied, as to the accuracy, timeliness, completeness, merchantability or fitness for any particular purpose of any such information. Under no circumstances shall **MOODY'S** have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of **MOODY'S** or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if **MOODY'S** is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The credit ratings, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. **NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.** Each rating or other opinion must be weighed solely as one factor in any investment decision made by or on behalf of any user of the information contained herein, and each such user must accordingly make its own study and evaluation of each security and of each issuer and guarantor of, and each provider of credit support for, each security that it may consider purchasing, holding or selling. Pursuant to Section 17(b) of the Securities Act of 1933, **MOODY'S** hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by **MOODY'S** have, prior to assignment of any rating, agreed to pay to **MOODY'S** for appraisal and rating services rendered by it fees ranging from \$1,500 to \$1,500,000.