Emerging Market CBO Criteria

Mario F. Verna
(212) 908-0603
mverna@fitchinv.com

Tracy Pridgen
(212) 908-0628
tpridgen@fitchinv.com

For a full description of Fitch's CBO/CLO rating criteria, please refer to Fitch Research on "CBO/CLO Rating Criteria," dated March 17, 1997, and "Rating Unsecured Debt Denominated in Foreign Currency," dated June 2, 1997, available on Fitch's web site at www.fitchinv.com.

■ *Summary*

Collateralized bond obligation (CBO) transactions were initially collateralized mostly by high-yield bonds issued by U.S.-domiciled institutions. As the market evolved and spreads tightened in U.S. high-yield debt, CBOs began to include a mix of assets, such as bank loans, mezzanine investments, equity, and emerging market investments. Asset diversification can improve yield while reducing defaults and earnings volatility in multi-asset class CBOs. In addition to multi-asset class CBOs, pools containing exclusively emerging market debt can be formed to minimize losses through geographic diversification and provide an attractive yield to equity investors.

To obtain an investment-grade rating on a senior tranche of an emerging market CBO, the structure must have a diversified portfolio, an experienced asset manager, and available credit enhancement or subordination to absorb potential losses. The rating analysis for a pool of emerging market debt is fundamentally similar to that of CBOs backed by U.S. corporate debt. The quality of the assets is examined, diversification and asset coverage requirements are set, the bankruptcy remoteness of the trust is verified, and the abilities of the asset manager to administer the pool's assets are evaluated. However, an emerging market CBO has additional factors to consider, such as sovereign, currency, and legal risks, as well as regional economic correlations.

■ *Rating Emerging Market Debt*

The asset rating includes an assessment of the country's political risk. Some emerging market countries have unstable regimes, which could affect the value and certainty of payments on sovereign or corporate securities. In assigning a rating, Fitch's sovereign group analyzes the country's political risk as well as the underlying economic and business risk of the rated entity. The review of each security also considers the nature of the collateral, as well as legal access to such collateral, in determining recovery expectations.

It is difficult to assess the default probability of sovereign debt because observed defaults occurred primarily on bank loans in the 1980s, a period that represented a different international debt environment. Fitch believes that a sovereign is probably less likely to default on current public debt than it was on loans in the 1980s, since a default may significantly limit future access to the capital markets. Given the lack of empirical data, Fitch takes a conservative approach and assumes that default probabilities for emerging market debt are similar to U.S. high-yield bonds with similar ratings.

The expected default probability of emerging market debt is based on the issue's foreign currency debt rating rather than the local currency debt rating, since foreign currency ratings reflect the risk of payment in U.S. dollars or other hard currencies. The ratings consider any guarantees or letter of credit providers. Fitch has explicit ratings or shadow ratings on the sovereign debt typically included in emerging market CBOs.

■ *Expected Loss*

To determine credit enhancement requirements, Fitch calculates the expected loss on the pool and establishes enhancement levels to cover such losses. Expected

losses are calculated by multiplying the default frequency (expected default probability) by the loss severity. The default frequency is a function of the average credit quality of the assets and the loss severity is a function of expected recoveries following a default.

The first step in determining expected loss is calculating the average rating of the pool. The average rating is computed by weighting exposures using the Fitch rating factors, which are based on historical default data. The Fitch factors, shown in the table below, are skewed toward the bottom of the rating scale, reflecting increased probability of default.

The stressed 10-year cumulative default rates applied to achieve different rating levels are included in the table above right. For example, to achieve a 'BBB' rating with a pool of diversified bonds with an average rating of 'B+', the pool would be stressed to a 31.6% cumulative default level. Since losses are based on 10-year historical defaults for U.S. corporate debt, if a transaction is substantially shorter than 10 years, the loss expectation would be lowered.

Stressed Default Rates

(%)

Collateral Rating	Fitch Default Curve	'BB' Default	'BBB' Default	'A' Default	'AA' Default
'AAA'	1.0	0.0	0.5	0.8	1.0
'AA'	1.2	0.6	0.9	1.2	1.4
'A'	1.3	1.0	1.3	1.6	4.3
'BBB'	4.0	4.0	5.0	10.0	12.0
'BB+'	12.7	16.1	18.4	25.3	34.8
'BB'	16.0	20.0	21.6	27.9	39.9
'BB–'	20.6	24.3	26.8	34.0	46.4
'B+'	25.2	29.0	31.6	39.1	50.5
'B'	29.9	33.2	35.8	43.3	52.3
'B–'	34.5	36.9	39.7	48.3	57.0

Fitch Rating Factors

Rating	Factor
'AAA'	1
'AA+'	8
'AA'	10
'AA–'	14
'A+'	18
'A'	23
'A–'	36
'BBB+'	48
'BBB'	61
'BBB–'	94
'BB+'	129
'BB'	165
'BB–'	210
'B+'	260
'B'	308
'B–'	356
'CCC+'	463
'CCC'	603
'CCC–'	782
Below 'CCC–'	1,555

Cumulative defaults are calculated from the original pool balance. Since some emerging market portfolios are bought at a substantial discount to par, the actual cost of the portfolio is used as the original balance. Typically, losses are modeled on a front-loaded basis and distributed evenly over the first three years of the structure, although variations in the loss distribution are made to test the sensitivity of the structure.

The second part of the expected loss equation is the loss severity. Mathematically, the loss severity is stated as one minus the recovery rate. Recoveries after defaults vary according to the type of bond. Based on Fitch's observation of the market, sovereign bonds are generally expected to recover more than emerging market corporate debt. However, certain exceptions exist where Fitch may expect a corporate bond to have higher recoveries than its sovereign for reasons such as the corporate's export revenue base or assets outside its home country that may serve as collateral and provide higher recovery values. If a pool contains such bonds, the structure may benefit from higher recoveries. Bonds with a principal guarantee, such as certain Brady bonds, will have higher recoveries than bonds without such guarantees. Recoveries are assumed to follow immediately after default. The table below summarizes Fitch's recovery assumptions.

The expected loss calculation is a first approximation to required credit enhancement. In the example above, the expected loss to achieve a 'BBB' rating for a diversified pool of 'B+' sovereign bonds with a principal guarantee and an average 12-month interest guarantee is 19% (31.6% times 60%).

Fitch Recovery Assumptions

Debt	Recovery (%)
Emerging Market Sovereign without Guarantee	25
Emerging Market Sovereign with Principal and 12-Month Interest Guarantee*	40
Emerging Market Corporate	20

*Recoveries for Brady bonds will vary according to the length of interest guarantee.

The expected loss is not the final credit enhancement requirement, since it does not consider the benefit of excess spread. Fitch uses cash flow models to determine the benefit of excess spread based on the asset yield, cost of funding, term, loss distribution, interest rate and currency risk, amortization sched-

ules, and structural features. The actual enhancement requirements will be affected by all these factors.

Diversification

Fitch examines asset diversification to mitigate the risk of losses caused by possible economic downturns that may affect a particular country or region. The expected loss analysis assumes an asset pool that is diversified by issuer, country, region, and industry. Fitch compares each portfolio with the benchmarks set below and increases default expectations for higher concentrations.

To ensure country diversification, Fitch considers a pool to be diversified if it contains a maximum concentration of 10% per country, with the top three countries totaling no more than 20%. In addition, regional exposures should be diversified to mitigate economic downturns in countries that are highly correlated, where a political or economic event in one country may affect other countries in the same region. Fitch performed extensive correlation studies based on economic growth and has defined the regions and set the concentration limits listed in the table below.

Concentration Limits

Region	Concentration Guidelines (%)
South America	40
Central America	15
Eastern Europe	25
Asia	20
Middle East*	20
Africa*	20

*Middle East and Africa combined cannot exceed 30%.

Regional concentration guidelines reflect risk due to the correlation of the countries within that region. For example, a region that contains highly correlated countries will have a lower concentration guideline to mitigate the exposure to events that could affect the entire region. South American countries, for example, are considered less correlated than Middle Eastern countries. As a result, a pool may contain more credits from South America while maintaining a similar risk profile.

The parameters for regional and country concentrations are benchmarks that define a well diversified portfolio. Each portfolio is examined individually and default expectations are increased if concentrations exceed the established benchmarks. For example, a pool may contain credits from various countries exclusively from one region, in which case the pool may be well diversified by country but not by region. In this example, expected defaults could be substantially higher than those highlighted in the table at the top of page 2 and would require higher credit enhancement.

Industry diversification is analyzed on a case-by-case basis. Industry diversification is not generally considered for pools containing assets from different countries, since all bonds issued by one country, whether corporate or sovereign, are aggregated into one country exposure. However, there may be cases where a pool is diversified geographically but contains large exposures to one industry. If the industry risk across countries is significant (i.e. an industry event with global repercussions), the pool will be penalized for high industry concentrations. For example, if a portfolio contains a pool of geographically diverse oil company credits, a higher level of defaults will be assumed when calculating the portfolio's expected loss because a disruption in that market could potentially have global repercussions.

If a CBO contains credits from only one emerging market country, industry diversification will be required in the same manner as for a U.S. CBO. Industry diversification requirements, in this case, will be a 10% limit based on Fitch's universe of 25 defined industries, and obligor concentrations will be limited to 4% of the pool. However, these pools will require higher enhancement because of the increased risk of having only one country exposure, and the senior rating on the CBO may be restricted by the country's rating.

Investment Restrictions

These transactions require surveillance and will be reviewed periodically by Fitch to determine concentration risks, losses, changes in asset quality, weighted average rating, minimum rating, minimum amount of guaranteed bonds, overcollateralization test, interest coverage tests, and liquidity, as applicable. Some transactions require credits to be reviewed by Fitch as a condition of inclusion. In the case where an asset has two ratings, the lowest of the available ratings will be used. Otherwise, Fitch will rate these assets, either explicitly or on a shadow basis. Investment restrictions are not meant to limit the asset manager's flexibility in administering the pool but to ensure that the risk stays within the rating parameters.

Legal Considerations

Legal considerations that apply to U.S. CBOs also apply to emerging market CBOs, with some additional factors. The trust must be set up in a highly rated jurisdiction to ensure a developed and enforceable legal structure. The securities should be in the physical possession of the trustee or, if in the U.S., U.K., or an equivalent jurisdiction, book-entry securities should be registered in the name of the trustee.

Payments should be made directly into the trust by the paying agents, and the trustee should have the ability to handle payments during high inflationary environments or currency devaluations or other local political or economic crisis situations. The asset securities must be examined, and an opinion of tax coun-

sel delivered, to verify that no taxes will be withheld that could decrease the portfolio yield.

Hedging

As part of the evaluation of the asset manager and the analysis of cash flow, hedging strategies are reviewed to ensure mitigation of interest rate or currency exposure. If the assets in the pool are not U.S.-dollar denominated, currency risk must be hedged with swaps, caps, or other hedging mechanisms. Convertibility risk is considered for certain currencies where the sovereign may be likely to impose currency restrictions. In such cases, certain currencies may not be permitted in the pool regardless of the hedging mechanisms in place. Interest rate risk must also be addressed when there is an asset/liability mismatch.

Credit Enhancement

Credit enhancement is usually in the form of subordination, but may also include a letter of credit from a highly rated institution, a cash collateral account, or a guarantee. Credit enhancement is sized according to cash flow models, which calculate the portfolio's net expected loss giving credit to excess spread, hedges, and other structural features.

Fitch develops its own cash flow models to evaluate the cash flow and liquidity dynamics of the structure. The qualitative part of the analysis includes: an evaluation of the asset manager's abilities to administer the pool; potential high concentrations of individual credits, countries, or regions; and other potential risks that may not be directly quantifiable.

Asset Manager Assessment

Evaluating the asset manager is a critical part of the rating process and can affect the level of required enhancement. Every rating is supported by a due diligence intended to examine the company's organization, credit guidelines, portfolio management, and operations. For emerging market portfolios, it is important that the asset manager have access to analytical teams located in the country originating the debt. Such teams, whether directly part of the manager's organization or contracted, should be familiar with local regulations, have access to local economic and political information, and be able to review the bond's covenants and collateral, if any.

The ability of the asset manager and supporting personnel are evaluated according to functional organization, experience, and track record in emerging market debt. Fitch also reviews the company's credit guidelines with respect to concentration limits, internal evaluation systems, documentation, downgrade policy, selection, and surveillance. Portfolio management is evaluated in terms of performance, investment policies and procedures, asset allocation, pricing, reporting systems, personnel experience, and risk management philosophy. Operations are reviewed for proper reporting, oversight, internal audits, controls, and system contingency plans.

Copyright © 1997 by Fitch Investors Service, L.P., One State Street Plaza, NY, NY 10004
Telephone: New York, 1-800-75 FITCH, (212) 908-0500, Fax (212) 480-4435; Chicago, IL, 1-800-48 FITCH, (312) 214-3434, Fax (312) 214-3110;
London, 011 44 171 638 3800, Fax 011 44 171 374 0103; San Francisco, CA, 1-800-95 FITCH, (415) 955-0529, Fax (415) 397-6309
Barbara A. Besen, Publisher; John Forde, Editor-in-Chief; Madeline O'Connell, Director, Subscriber Services; Jason H. Kantor, Manager, Publishing Technology; Diane Lupi, Nicholas T. Tresniowski, Managing Editors; Jennifer Hickey, Editor; Jay Davis, Martin E. Guzman, Senior Publishing Specialists; Dena Noe, Linda Trudeau, DarLyn A. Walsh, Publishing Specialists; Eva Sandstrom, Publishing Assistant. Printed by American Direct Mail Co., Inc. NY, NY 10014. Reproduction in whole or in part prohibited except by permission.

Fitch ratings are based on information obtained from issuers, other obligors, underwriters, their experts, and other sources Fitch believes to be reliable. Fitch does not audit or verify the truth or accuracy of such information. Ratings may be changed, suspended, or withdrawn as a result of changes in, or the unavailability of, information or for other reasons. Ratings are not a recommendation to buy, sell, or hold any security. Ratings do not comment on the adequacy of market price, the suitability of any security for a particular investor, or the tax-exempt nature or taxability of payments made in respect to any security. Fitch receives fees from issuers, insurers, guarantors, other obligors, and underwriters for rating securities. Such fees generally vary from $1,000 to $750,000 per issue. In certain cases, Fitch will rate all or a number of issues issued by a particular issuer, or insured or guaranteed by a particular insurer or guarantor, for a single annual fee. Such fees are expected to vary from $10,000 to $1,500,000. The assignment, publication, or dissemination of a rating by Fitch shall not constitute a consent by Fitch to use its name as an expert in connection with any registration statement filed under the federal securities laws. In the United Kingdom, Fitch is regulated by the SFA. This report is published for use by Non-Private Customers only (as this expression is defined by the SFA). Due to the relative efficiency of electronic publishing and distribution, Fitch Research may be available to electronic subscribers up to three days earlier than print subscribers.