Rating Methodology

Overview

In 2000, Moody’s initiated its coverage of trade credit insurers, a specialty commercial line of insurance predominantly traded in Europe and, like the reinsurance industry, led by European insurance groups. Trade credit insurance covers sellers against loss on the protracted default or failure of buyers on credit terms.

The scope of activities of credit insurers has expanded in recent years as a result of a greater globalisation of trade and in view of competition from alternative risk management, financing and transfer possibilities (e.g. self-insurance, captives, securitisation of receivables) available to sellers.

The participation of credit insurers as credit enhancement providers to special purpose vehicles (e.g. Asset-backed commercial paper programmes or ABCPs) has directed the attention of investors onto the financial strength of these credit enhancement providers.

Of the six major groups, Moody’s currently rates two: Euler, Coface, Hermes (rated Aa2 for insurance financial strength), Gerling (rated Aa3 for insurance financial strength), NCM and Crédito y Caución.

Credit insurers are specialist companies within the insurance sector, and as such require a distinct rating methodology. This report describes the rating methodology applied to these companies.

continued on page 3
Fundamental Analysis Underlies Methodology

In broad terms, the rating methodology applicable to credit insurers consists of three parts:

- industry analysis
- company analysis and
- portfolio analysis.

Like any other company rated by Moody’s, the rating methodology starts with an analysis of the business and financial fundamentals, i.e. the analysis of the industry and of the company specifics. In view of these companies’ speciality and focus on one class of insurance, and the absence of offsetting operating cash flows from other unrelated businesses, particular emphasis is also placed on the quantitative analysis of the portfolio.

Industry Analysis

Demand: The Nature of the Industry and Prospects for Growth

Moody’s starts its analysis by considering whether the business is within a young or mature industry and evaluating the prospects for growth of credit insurance in general and of the company in particular.

Moody’s notes that compared to other industries the demand for non-life insurance\(^1\) products is relatively stable in aggregate terms because many lines of business are a necessity, and some are compulsory. A company’s business may falter as a result of competitive dynamics and relative franchise strength but the industry as a whole presents a relatively constant trend year-on-year.

Moody’s is particularly interested in understanding how credit insurers intend to expand their business given that, after several decades of operation, the product penetration remains at distinctly low levels and alternative risk transfer mechanisms, including self-insurance (deliberate or not), threaten growth prospects.

Moody’s evaluates the economic situation in the countries in which the credit insurers’ clients reside. To the extent that the business is mostly domestic, so is the focus of the analysis. For companies with a greater international book of business, the focus is similarly on the degree of success regarding local competitors and economic diversification.

Like most fundamental Moody’s ratings, the insurance financial strength rating of a credit insurer should not swing considerably throughout the cycle. Rating changes would generally reflect what are perceived as a permanent improvement or deterioration in the risk profile, whether because of company-specific or industry-wide factors.

Industry Structure

We consider whether or not the profile characteristics of the industry are favourable to the company. For instance, we consider *inter alia*:

- the interaction of supply and demand of reinsurance capacity and other forms of capital;
- the number of participants in the industry;
- the dynamics in the sectors and markets where the company writes most of its business;
- the existence of barriers to entry; and
- the ease of replication of products and the likelihood of commoditisation.

Barriers to Entry

The credit insurance industry is highly concentrated among six groups: four large, one medium and one small. Our analysis in this area consists of evaluating both the possible decline in demand as a result of alternatives developed outside the scope of the credit insurer and the possible effects on the business and franchise of the existing players if more companies were to enter this line of business. For instance, a greater use of securitisation or credit-linked derivatives could produce a shift in demand away from tradi-

---

\(^1\) In Europe, credit insurance is a commercial line of non-life (P&C or non-life) insurance.
tional credit insurance. A dwindling market share and a gradually declining margin would be reflected on the rating as negative, whereas expansion possibilities and elements that may help to protect margins would have a positive impact on ratings.

**Role of Sovereign Risk Ratings in Credit Insurance**

Most credit insurance is traded in Europe, where countries are rated Aaa. Sovereign ratings set the economic, social and political framework of the environment in which the insured risks operate. Sovereign ratings are not as closely related to the ratings of insurers as they are to those of banks and should not, in general, be imputed to insurers. Just as there are strong corporations in countries rated within the lower levels of Moody’s rating scale, there are companies rated vulnerable in countries that are at the top of the rating scale.

The piercing of country ceilings is addressed in a recently published paper. From the point of view of the insurer’s credit risk profile, it is simply important to stress those sovereign ratings and country ceilings can at times be unrelated to the ratings of securities issued by a company or to certain company ratings.

**Two Risk Profiles for Credit Insurer Business: One for Private and Another for Official**

Some credit insurers (e.g. Hermes, Coface, NCM) act as export credit agencies (ECAs) for their respective governments, generally for a fee that covers the expenses incurred in administering these activities. If the business they bind as agents has the full backing of their respective governments and, should that business require a rating, those governments’ ratings would be used as reference. Thus, credit insurers are rated for insurance financial strength for their private business.

**Company Analysis**

The analysis of the company comprises its qualititative strengths and weaknesses and its financial features.

**Corporate Governance and Strategy**

Although every aspect of company analysis reveals management’s attitude to risk, Moody’s places particular emphasis on various aspects of corporate governance, from the identity and character of the owners and their attitude to returns, to the mode of operation of the enterprise in the domestic market and abroad. The capitalisation and dividend policy and attitude to gearing are important, as is the investment horizon of the shareholders. We evaluate the company’s strategy in the context of market conditions and the company’s financial, technological and intellectual resources.

**Underwriting Process: Risk Exposure Identification, Management and Control**

Moody’s evaluates the principles underlying the underwriting process and tries to assess whether these are maintained in the heat of battle. Among these guidelines, we seek to clarify how risks are mitigated and look for elements such as:

1. Risk selection - data gathering, closeness to the clients, scope of the company's information network.
2. Risk checks - type of information collected by the credit insurer to assess risk posed by both buyers and sellers.
3. Effective portfolio diversification - economic more than purely geographic diversification.
4. Risk-related pricing - by company, sector and country.

---

**Franchise, Brand and Distribution**

Moody’s fundamental analysis has always placed emphasis on a company’s franchise, which in the case of insurers is defined as the ability of the company to write business throughout all phases of the business and underwriting cycles. The importance of this *intangible* in the fortune of a company is particularly highlighted at times of trouble.³

Our analysis in this area comprises a review of:

- the current and projected position of the company according to management’s recent initiatives;
- the strength of the brand, based on market position, presence and observation;
- main threats to its position from either new entrants or existing players in the domestic market and in the main markets where it operates on a product-by-product basis.

Credit insurance is sold primarily through company sales forces. The analysis of the market position, the franchise and brand strength of the company is partly the result of, and closely linked to, a company’s distribution policy.

Moody’s is interested in management’s distribution strategy and future approach to the delivery of products and services, in particular in its application of IT to the sales process, and evaluates the possible weaknesses in the links between the sellers (policyholders) and the insurers.

**Competitive Advantages**

The underwriting of a specialty line provides an opportunity for differentiation in the eyes of the consumer. Credit insurance brings the seller, the insurer and the buyer closer together. Price is only one consideration in addition to ancillary services and the efficiency of operations. As new products and services are launched, Moody’s tries to determine how easily they can be replicated by competitors and whether they constitute sustainable competitive advantages for a company.

**Business Diversification**

Credit insurers are specialist companies that may not benefit from the cross-subsidisation enjoyed by multiligne non-life insurers. Lack of net cash inflow diversification can be a disadvantage from the point of view of credit risk. This area of the analysis evaluates the extent to which credit insurers can diversify their sources of earnings through the launch of new products and services. Ideally, a credit insurer’s portfolio will be diversified by client, industry sector, type of product and territory. This is covered in the analysis of the portfolio and the risks it represents to the capital base of the insurer.

**Analysis of Financial Resources**

Moody’s analyses the financial resources - or solvency capital - of credit insurers and evaluates the quality of the various layers, for instance:

- Robustness and volatility of operating cash flows.
- Extent and quality of reinsurance.
- Reserving philosophy for case and IBNR loss reserves.
- Methods by which equalisation reserves are established.
- Shareholders’ equity.
- Hybrid securities such as deeply subordinated bonds or preferred shares.
- Contingent capital.
- Implicit or explicit parental support.

³ Please refer to Moody’s Special Comment, entitled Lessons from Property & Casualty Insurance Downcycle: Confidence-sensitivity, Earnings Quality and the Credibility of Ratings, November 2000.
Liquidity: Crucial for a Volatile Line of Business Like Credit Insurance

During good times, operating cash flows are positive (premiums, fees and investment income cash flows exceed reinsurance ceded, and expenses and claims paid). During bad times, the credit insurer could face the need to sell assets, activate reinsurance treaty cash-calls or to draw down from alternative sources of cash to meet claim payments. Moody’s tries to ascertain the conditions under which this would occur and the extent to which the portfolio could be liquidated in case of need without incurring losses. Alternative sources of liquidity are explored.4

In credit insurance, there is a period between the notification of default and indemnification, according to the contractual obligations. In the interim, a number of actions may take place between buyer and seller, between insurer and policyholder (seller) and between the debt collection arm and all of the above. Nevertheless, the credit insurer needs to ensure that payments are made when due, and for this reason its assets must be sufficiently liquid.

If the credit insurer intends to provide credit enhancement to ABCP, its ability to access funds at short notice is heightened. In the money and capital markets, payment delay is a technical default. Credit insurers are in general providing credit enhancement on the basis of their knowledge of the companies whose receivables have been securitised. In this sense, their participation in the credit enhancement of securitised pools of assets does not differ from their traditional business.

Large single risks could also represent a risk in terms of liquidity. The existence of specific payment arrangements (cash call clauses) with reinsurers are crucial.

Portfolio Analysis is Key at Specialty Units Like Credit Insurers

In the case of credit insurers (as well as other specialist companies such as financial guarantors, finite reinsurers, and catastrophe reinsurers), we place special emphasis on the composition of the portfolio, the underwriting philosophy and the company’s risk monitoring and loss mitigation measures.

ADHERENCE TO UNDERWRITING GUIDELINES

As weak underwriting can lead to trouble and failure in relatively short periods of time, and written guidelines, albeit generally prudent, may be ignored at times of intense competition, Moody’s focuses on management’s ability to ensure that underwriting guidelines are followed despite market pressures. We seek to understand how the company goes about its core underwriting activity.

Insight into the underwriting philosophy and process from sale to collection is essential. Among other things we look for evidence of:

• Careful risk selection.
• Risk diversification by account, industry sector and country.
• Evaluation by the credit insurer of the seller’s credit risk-management attitude and capabilities.
• Monitoring by the credit insurer of the seller’s adherence to terms and conditions.
• Use of deductibles and co-insurance so that the seller shares some of the risks.
• Risk-related pricing.
• Industry sector analysis and monitoring.
• Establishment of prudent limits.
• How limits are monitored.
• Cap on indemnification.
• Information systems regarding protracted default.
• Effectiveness of debt collection processes.

4 Please refer to various Moody’s publications on this matter, among them Rating Methodology: Assessing the Strength of a Liquidity Facility, June 1999; Alternate Liquidity: Current Topics and Trends, November 1999; and Rating Methodology: Moody’s Approach to Assessing the Adequacy of “Liquidity Risk Insurance”: Reduced Availability of Traditional Backstop Heightens Need for Systemic Analysis, January 2010. All of these publications were products of the Standing Committee on Liquidity and Confidence Sensitivity.
COMPOSITION AND CHARACTERISTICS OF THE RISK PORTFOLIO

Credit insurers have traditionally limited their activities to domestic commercial credit and export-related business. In recent years, however, their business scope has expanded and so have risks and opportunities. Moody’s seeks to have a good understanding of the risk portfolio characteristics and the likely behaviour of risks:

• Portfolio composition by type of product - commercial trade credit, fidelity, bond.
• Diversification by product, sector and market (e.g. list of the largest aggregate exposures to a group and on a single risk basis).
• Analysis of the portfolio by industrial sector:
  • by amounts outstanding under the limits (or average outstanding).
  • by limit size (appropriate ranges or bands can be employed).
  • by profit contribution.
• Analysis of the historical loss ratios over time (in particular during recessions) - by product, sector and market.
• Analysis of recovery rates over time - by product, sector and market.
• Role in ABCP and other derivative transactions.

LIKELIHOOD OF HIGH DEFAULT CORRELATION DURING TIMES OF HIGH FREQUENCY OF LOSS

Moody’s seeks to understand the relationships that may exist between companies and industry sectors domestically and across boundaries. The focus is on economic diversification more than on pure geographic diversification. (For instance, a portfolio of risks on the steel and auto industries in Germany, France, Italy and the UK may be geographically diversified but may come under pressure at the same time). The commercial and financial links that exist between companies and sectors before and at the time of default are not well documented, and this is an ongoing task.

MODELLING LOSSES

Overview

Moody’s quantitative analysis of credit insurers resembles Moody’s analyses of structured finance vehicles and, more pertinently, Moody’s updated analysis of Financial Guarantors. In all of these cases, Moody’s attempts to replicate the range of economic and other scenarios and resulting cash flows that could emerge from the entity being rated, by creating a Monte Carlo model that captures the fundamentals of the operation, and stress-testing various parameters. Analysis usually focuses on the expected loss and default probability that the model suggests after several thousand iterations, which can then be mapped on to Moody’s idealised expected loss tables and standardised bond default tables to identify a quantitative rating.

In the case of credit insurers, Moody’s modelling attempts to reproduce the underlying risk profile that credit insurers are faced with - specifically the individual but related credit nature of each and every counterparty that clients of a credit insurer do business with. At a high level, the model uses a frequency and severity approach and considers two facets for each individual credit:

• the likelihood (probability) of that credit defaulting on its payments (and leading to a loss to the insured), and
• the magnitude (severity) of such a loss in the event of such a default occurring.

By creating a model that allows the frequency and severity of loss for each credit to vary in a realistic and meaningful way, Moody’s model produces a range of possible losses from the portfolio, with associated probabilities. By comparing this with the solvency capital of the credit insurer and its reinsurance protection programme, Moody’s model gives estimates for the likelihood of default (i.e. where losses exceed solvency protection) and of the expected loss to policyholders of the credit insurer.

Broad Analytical Framework is Tailored to Each Insurer’s Portfolio Characteristics

Credit insurers’ risk profiles - derived from the individual credit limits extended by the insured company to its purchasers - vary markedly by insurer. At the very least, the risk profile of a purely domestic-orient-ed credit insurer is likely to show a different set of dynamics to that of a credit insurer with policyholders and exposures across Europe. Significant variation can also exist according to the types of credit business written.

Moody’s therefore believes that, in modelling terms, there is no ‘one size fits all’ solution. However, in broad schematic terms, a unified modelling approach can be used, and allowed to contract or expand according to the complexity of the risk profile of each credit insurance group. Similarly, distribution and correlation assumptions may vary by insurer, reflecting that insurer’s risk profile.

Moody’s approach is therefore to create a basic analytic and modelling structure, and then allow appropriate variation by insurer. Moody’s will continue to refine its basic modelling approach, which is described below.

Basic Modelling Structure

Moody’s starting point is the portfolio analysis described above. Following the frequency and severity line, the model requires detail on individual risk exposures by number (known as the number of credit limits, where each credit limit represents one client of the insured), and by size of exposure (the size of the credit limit in each case). Below we list the very minimum level of definition that Moody’s model requires:

- nature of credit insurance offered (conventional credit insurance, bond);
- geographic location (by country) of credit limits;
- industrial sector of credit limit; and
- size of credit limit.

Subject to data availability, Moody’s tries to “drill down” to as high a level of resolution as possible, so that groups of relatively homogeneous risks can be created. So far, the level of data available has enabled Moody’s to create groups of insured risks at a relatively fine level of industrial sector detail (food manufacturing, steel production, oil extraction, etc.).

There is a trade-off in modelling between very fine data subdivisions (which may produce spurious accuracy) and macro level data (which can mask the true underlying characteristics), and Moody’s assessment of the appropriate level of data varies according to the size and risk profile of each credit insurer.

Frequency of Loss Distribution Assumptions and Parameter Estimation

For each credit limit sub-sector (for instance, steel producers in Germany), Moody’s derives a ‘base’ default frequency. This base parameter will usually be derived from a combination of historical insurer-specific default experience, local national default statistics (e.g. German government insolvency statistics) and other sources (e.g. Dun & Bradstreet insolvency surveys).

Moody’s then superimposes a distribution on the base parameter - which is used by the Monte Carlo modelling process to vary the rate of default in a quantifiable and controlled way. To date, Moody’s chosen distribution for the majority of limit sub-sectors has been a negative binomial distribution - in other words, a distribution that gives a high probability of left-hand side (low) default rates, but with low probability of right-hand tail (high) default rates.
This would appear to match the real-life situation of most years with only relatively low default rates, but with a (low) probability of higher default rates. However, further refinements to the model may lead to the adoption of different distributions where valid.

Parameter estimates that define each distribution (standard deviations) are assessed with reference to actual observed volatility in default rates, using the sources above, so that the modelled distribution fairly recreates the range of potential default rates with realistic probabilities.

In each run, the model also allows for variation around this modelled default rate according to the size of the specific credit limit. Empirical evidence supports the common sense observation that, other things being equal, smaller credit limits are likely to be extended to smaller companies, which at times of recession are broadly more likely to default than their larger counterparts.

**Frequency of Loss: Correlation Between Individual Credit Limits**

As previously discussed, analysis of actual default history over time shows, unsurprisingly, that credit limit defaults are bunched over time - in particular at times of recession. In practice, the fortunes of given companies in a sector (and therefore their default probability) are likely to be related due to their shared economic circumstances.

Similarly, due to supplier/purchaser linkages between industries, default rates between industries are likely to be related (for instance, between steel manufacturers and car producers). Finally, there is likely to be a degree of correlation between the default rates of a given industrial sector and the situation of the national, European and global economy as a whole (depending on the degree to which trade is with local or international entities).

To include some allowance for the effects of this macroeconomic-driven correlation, Moody’s creates, for each economy where the insurer has credit limit exposure, a model distribution of default rates similar to those derived at an industrial sector level, derived in a similar fashion. In practice, defaults are likely to be related to variables such as interest rates, unemployment, reduction of liquidity in the money and capital markets and other factors, but precise correlation coefficients and time leads and lags for these linkages are difficult to quantify and tend to vary over time.

To allow for the cross-border trading links and increasing convergence of global economies (particularly in Europe - where most credit insurers’ risks are based), Moody’s model allows for varying degrees of correlation between the modelled default rates of each economy. Estimates of economy correlation are derived from historical experience, and are generally fairly high for the largest industrialised countries and in particular among some EU countries. It is the lags in economic changes of these countries that warn credit insurers about related exposures and serve to mitigate loss.

Finally, the model allows for varying levels of correlation between the modelled default rate of each industrial sector and its local economy default rate. Historical evidence shows that at times of high levels
of corporate default, certain industries are more likely to respond markedly to such economy-wide problems than others, and Moody’s model incorporates correlation parameters reflecting this finding.

**Frequency of Loss: Summary**

Moody’s believes that the frequency model derived above should fairly represent the actual default experience of a credit insurer’s portfolio. In particular, there is a varying degree of correlation between the thousands of limits that a given insurer has exposure to. In most cases, for losses to be sufficient to cause a net loss to the insurer, there has to be a high frequency of loss across the whole portfolio. Given the model’s construction, and the existence of various degrees of correlation, the likelihood of such a level of losses is likely to be higher for an insurer focused on a handful of industrial sectors in one local market than an insurer with credit limit exposure in many sectors across many economies.

**Severity of Loss**

A credit insurer’s maximum claim from a given credit exposure is, at a very maximum, the size of that credit limit. In other words, if an insurer agrees to a credit limit of 10 million between the insured and a given purchaser, the default of that purchaser cannot lead to a single claim of more than 10 million. In addition, despite the preponderance of whole turnover business as opposed to account specific, although the insurer may extend approval of a credit limit of 10 million to the seller for a buyer, the limit may in practice not be fully utilised. For instance, sales to that risk may be below what was expected, or the insured (seller) may believe that the risk is of such a good quality as to ‘self-insure’ some of the non-payment risk itself.

In fact, in many jurisdictions, the maximum amount of a claim under credit insurance is limited by law or market practice to a multiple of insurance premiums paid in respect of that limit, which would usually be lower than the total credit limit. However, Moody’s starting point in assessing severity is to establish, for the subdivisions of risks, the total limit exposure and the extent of limit utilisation, to create an average credit limit size per risk subdivision. Note that it is important to separately analyse defaults for credit limits of varying sizes - smaller credits usually show higher default frequencies than larger limits but of far smaller severity.

Finally, Moody’s introduces a further element of realism by linking the severity of claims overall with the economic situation of the local economy (via the default rate for that economy). This reflects the fact that losses may become inflated, at times of recession, above the level that they would otherwise have been.

**Model Summary Results**

Having derived parameters and distributions for frequency and severity of default as described, Moody’s model simulates a large number of scenarios that will include the most stressful scenarios possible given the distributions used. Each scenario produces a net cash-flow position, which is compared to the credit insurer’s solvency capital. Moody’s then analyses the model results on an expected loss and probability of loss basis, in comparison with Moody’s standard expected loss and default rate tables.