The PML Study
Or
An Industry Gets Together to Study its Own Risk
A Progress Report

What is the probable maximum loss (PML) in credit insurance? In July 2002 several credit and surety reinsurers got together to share, for the first time ever, their experiences of PML evaluation. Evaluating the capital needed to cover the risk of a transaction involving credit risk requires two quantities: the probability of default and the amount of loss if a default occurs. PML is the missing link needed to compute the loss distribution of a credit risk insurance portfolio, and as such it plays an essential role in determining the profitability of such a book.

The group, which met under the auspices of the PASA credit committee, also sought ways to organize data reporting. The reason for the meeting was the realization that credit insurance is not well known to the outside world, and is often misjudged when it is. This is due, in part, to the fact that credit insurance is often confused with pure credit (loans). Moreover, the insurance industry lacks standard definitions, or even a common vision of how to judge credit risks.

The difference between a credit insurance policy and pure loan is that the former assures a seller that he will get the money due if the buyer defaults and fails to pay. Unlike pure credit, it does not supply a specific amount of money, although the guarantee is limited to an agreed maximum (the granted limit). Thus an insurer in close contact with the market can detect problems with certain buyers earlier than other observers. Moreover, credit insurance generally covers short-term commercial credit. That makes it easier to manage, because it allows for quick reactions both from the seller and the insurer. That is why we decided to first concentrate our study on short-term credit insurance and left the medium-term credit insurance (bond and surety) for a later stage.

When possible, the insurer can dynamically reduce the granted limit in response to claims frequency. This allows insurers to manage their exposure to bad credits. We have seen many cases where, at the time of default, the insurer had managed to reduce the granted limit to a small amount or even zero, despite having a high exposure to the same risk only months before.

To reflect credit insurers’ unique position, the committee suggested for common use a novel way of defining the PML: by using the granted limits during the time beginning one year before the default occurred, and at the time of the ultimate loss. The choice of one year was deemed to be sufficiently removed from the crisis. Along these lines, two quantities were defined that reflect:

a) The risk management before default. Alpha = limit used at time of default/granted limit one year before, and

b) the claims management. Omega = ultimate loss/used limit at time of default.

The multiplication of alpha by omega provides the PML. The group decided to study, in a non-competitive way, the distribution of these quantities (alpha, omega and their product), and to call on the rest of the industry to join in the effort. The response was very good. At the second meeting, held in Munich, representatives of most of the industry were present and ready to cooperate.

Everybody was aware that the credit (re)insurance sector as a whole is confronted by questions from investors and rating agencies about its profitability. As well, reinsurers are answerable to their top management, and have to compete for capital with the other lines of
business. The solution is to increase transparency and standardization in order to show the real value associated with our business. Such an effort is essential to the long-term success of credit insurance.

Unfortunately our new approach for confronting the PML problem was partly offset by the state of IT systems. It is difficult to make the connection between the systems that monitor exposures and those that monitor claims handling. On top of this, the issue of confidentiality was raised. For the study to be credible, it is necessary to cover a broad section of the industry, and to meet participants’ criteria in making sure that information will not be used competitively against the company that provided it.

For this reason the process was organised into three phases. First, the collection of ‘case names’ of companies in default; second, the collection of data for computing the PML based on an aggregated list of names; and finally, a statistical study conducted by an independent body – the Swiss Federal Institute of Technology (ETH) – which was also put in charge of data collection and archiving into an anonymous database. The aim of this somewhat complicated methodology was to preserve the study’s objectivity: obtain sufficient number cases, have an impartial study, and preserve the anonymity of the data providers in a non-competitive way.

Despite the efforts required to complete the forms, the participants’ enthusiastic response to the data collection phase is remarkable and impressive. We are now at a stage where we can see and discuss the first results, however preliminary, which were presented to the committee on 13 October by ETH researchers. Our hypothesis that the PML for credit insurance is much lower than for bonds in the financial markets turned out to be correct: the average PML is around 15%, while for corporate debts it lies in a range between 30% and as much as 60%, depending on the seniority of the debt. The 15% is naturally only an average and the value can vary from 0% up to more than 100% of the granted limit one year before default. That is why it is important to get the whole probability distribution of PML’s to insure a proper modelling of the risk.

Our figure of 15% is based on a sample of more than 2,000 cases contributed by about 20 companies worldwide with a geographical concentration in Europe, as is normal in the business. These companies represent a great majority of the short-term credit insurance market. We also saw clear indications that PML decreases with the size of the exposure, which is another good and expected sign. The detailed report from ETH will be available by the end of November, although participants can ask the ETH for the results of the analysis of their own data now. Doing so will help them to benchmark their own performance against the whole sample.

Are we finished? Do we have enough evidence to clearly demonstrate that our industry is able to manage its risks better than the outside world assumes? The results of the study are an important step in this direction, because they demonstrate both our ability to do so, and that we obtain results that are not far off what we expected.

Unfortunately to come up with robust results we need to improve the quality of the data, and to obtain more evidence that the process to be followed – dynamic management of the exposures – is supported by that data. Due to the difficulty of collecting details of the limit used at the time of default, this component of the study has not been possible. Therefore the overall reliability of the study has been qualified by ETH as “intermediary”. Our goal is to improve it enough to get their ranking to “high”.

ETH experts are ready to help us make more precise and robust definitions to use in the data collection process. Both their experience and ours should serve as a basis on which to standardize our data reporting. At the October meeting a group of people was elected who will form the ‘Definitions and Standardization Team’, which will pursue this goal further. It includes representatives of the major primary insurers and some reinsurers, together with an expert from ETH. The group will meet in January with the aim of coming up with an accepted definition that will be required for the next round of data collection, in order to obtain more reliable information.
This is the first time that the industry has been able to carry on successfully such a wide quantitative study. In view of the challenges ahead, the “PML committee” (as we call it today) believes we should not lose this momentum. A decision has been made to open up the PASA group to all industry associations (ICISA, ALCESE, Berne Union etc), and to consider extending the study to surety. The goals are to keep the database alive (pretty much in the same way, by collecting anonymous, industry-wide loss data) and to come up with standards similar to the CRESTA standards for natural catastrophe reinsurance. No doubt this effort will bring awareness of the contribution made by our industry to credit risk management, the potential for us to do more. It will certainly make the price of credit reinsurance cover much more transparent, and thus more realistic.