

# Credit risk management essay

Business, Risk Management



Capital allocation systems generally assume that it is the role of reserving policies to cover expected credit losses, while it is that of economic capital to cover unexpected credit losses. Thus, required economic capital is the additional amount of capital necessary to achieve the target insolvency rate, over and above that needed for coverage of expected losses. Value at Risk (VaR) is used to measure the potential loss in the value of a risky portfolio over a defined period for a given confidence interval. With Basel 1998 in place, certain banks developed credit value-at-risk models under two main categories during the late 1990s.

The first type of credit VaR models is the default mode models (DMS) in which the credit risk is linked to the default risk. A) Value-at-risk (VaR) methods used in allocating economic capital against market risks.

Specifically, the economic capital for credit risk is determined so that the estimated probability of unexpected credit loss exhausting economic capital is less than some target insolvency rate. Capital allocation systems generally assume that it is the role of reserving policies to cover expected credit losses, while it is that of economic capital to cover unexpected credit losses.

Thus, required economic capital is the additional amount of capital necessary to achieve the target insolvency rate, over and above that needed for coverage of expected losses. Value At Risk, known as VaR, is a common tool for measuring and managing risk. One of the advantages is VaR interpretation. VaR is a number, measured in price units or as percentage of portfolio value, which tells you that in a defined large percentage of cases (usually 95% or 99%) your portfolio is likely to not lose more than that amount of money.

Or said the other way around, in a defined small percentage of cases (5% or 1%) your loss is expected to be greater than that number. Besides that, VARY of different types of assets and various portfolios also can be measured and compared as Value At Risk is applicable to stocks, bonds, currencies, derivatives, or any other assets with price. This is why banks and financial institutions like it so much - they can compare profitability and risk of different units and allocate risk based on VARY (this approach is called risk budgeting).

VARY is easy to understand as VARY is just one number giving you a rough idea about the extent of risk in the portfolio. Value At Risk is measured in price units (dollars, euros) or as percentage of portfolio value. B) Within the current generation of credit risk approaches, the banks employ either of two conceptual definitions of credit loss, which are the Default Mode (DMS) model or the Market-to-Market (MAT) model. The common credit risk approach which currently by most banks is the default mode (DMS) paradigm where it is defined in a manner consistent with the underlying two-state, being the default or non-default concept of credit losses.

For example, in the absence of a default event, no credit loss will be incurred, and the loan is valued at book value. However, in the event that the loan defaults, if the loan defaults, then the size of the credit loss is measured as the present value of the difference between the loan's book value (determined by the borrower's contractual obligations) and the loan's actual net cash flows over the workout period. The rationale for the DMS model of credit risk management is that the secondary markets are not sufficiently

developed to support a full mark-to-market approach to credit risk. Thus, banks view loans as "buy and hold" assets.

Either the loan pays off or the bank suffers a loss because the opportunities to achieve a transparent market price are limited. However, the bank loan market is becoming less segmented as more non-bank participants enter the fray. Consequently, even though the DMS model of credit risk management is more prevalent, it can be expected that more financial institutions will move towards a mark-to-market methodology as the secondary credit market develops. Whereas, the mark-to-market (MAT) methodology recognizes that the value of a credit portfolio can decline without a default event occurring.

Furthermore, the MAT methodology recognizes that credit risk is not one sided. It allows credit-sensitive assets to increase in value due to favorable credit events such as credit upgrades or narrower credit spreads. In contrast, the DMS model of credit favorable spreads. While the DMS model of credit risk may be more prevalent among banks, the MAT methodology is preferred among fund managers because they must calculate and report net assets values on a regular bases (for mutual funds, on a daily basis), the DMS methodology is not sufficient.

However, banks have longer planning horizons usually one year), and do not need to report the value of their loan portfolios with the same regularity as fund managers. For them, the DMS methodology is more convenient. The MAT methodology may be considered a more general approach of the DMS methodology. Instead of only two states of the world, the MAT methodology

is multi- state approach. It allows for credit upgrades and downgrades as well as defaults. A credit loss under the MAT approach would be defined as a reduction in value of portfolio due to deterioration in credit ratings, and increase in credit spreads, or a default.

For example, consider a loan issued by a EBB rate company, If the company is downgraded to B, the market value of the loan will decline. The MAT methodology measures this decline. However, under the DMS methodology, no credit event has occurred because the company has not defaulted on the loan. Similarly, if the company were upgraded to an A rating, the MAT methodology would recognize the positive increase in value, but the DMS paradigm would maintain the loan at its original book value. ) A Value at Risk model (Vary) is a technique to measure and ascertain the market risk according to the potential loss in value of a risky portfolio over a specific time frame with a given probability as a result of fluctuation in market prices. For instance, if the time period is set to one day and the given probability is 1%, hence there will be an estimation of 1% probability that the value of the portfolio will decline over the next trading day.

In other words, if the Vary measure is accurate, the risks should not lie beyond the level of the Vary measure and should occur less than 1% of the defined period. There are two primary components of the Vary models which are interrelated, being he length of time and confidence interval level at which financial risk is to be measured. The adoption of these components by the risk managers is essential as it will greatly affect the nature of the Vary

model. The time period used in the definition of Vary, often referred to as the "holding period", is discretionary.

There is an assumption that the composition of the portfolio does not alter over a short holding period as a trading portfolio which tends to be more active is apt to vary frequently. Vary measures are often expressed as percentiles corresponding to the desired confidence level. For example, an estimate of risk at the 99% confidence level is the known as a 99th percentile Vary measure because the amount is the 99th percentile of the distribution of potential losses on the portfolio.

In practice, Vary estimates are calculated from the 90th to 99th percentiles, but most commonly used range is the 95th to 99th percentile range. There are three basic approaches that are used to compute Value at Risk, though there are numerous variations within each approach. The measure can be computed analytically by making assumptions about return distributions for market risks, and by using the variances in and covariance's across these risks.