

EL-equivalence in alternative credit models
("Weighting for Risk", Risk Magazine, May 2001)

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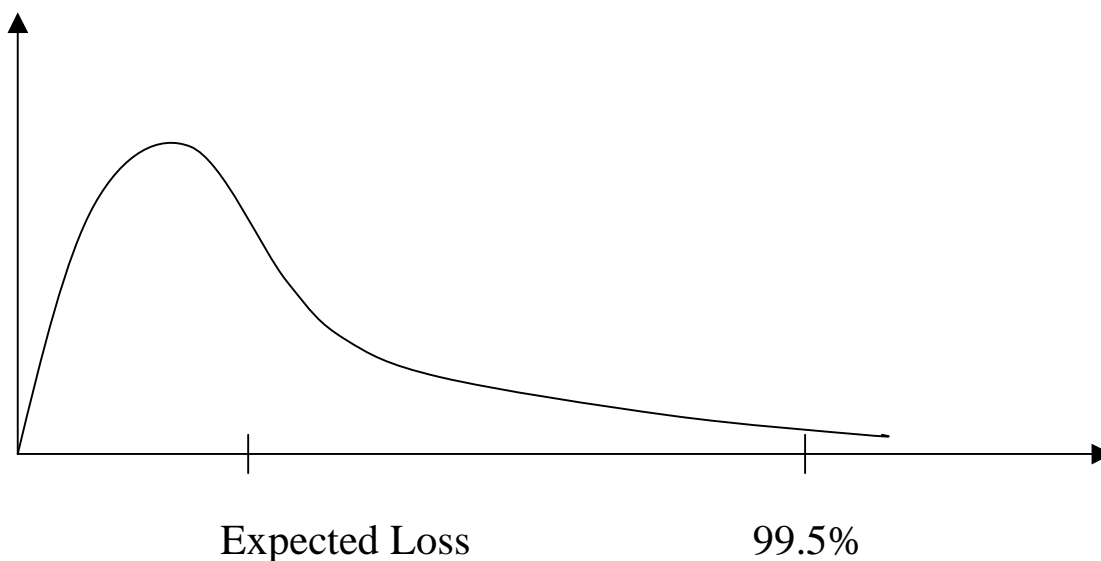
Outline for comments

The art and science of risk weights in general

Specific comments

Aim of risk weights

Portfolio credit loss distribution



Reserve enough capital against portfolio losses with a desired confidence level (eg 99.5%)

- Risk weights should assign a capital requirement to each exposure according to their marginal contribution to the portfolio's total capital requirement
- Capital requirements for individual exposures should sum up to the total portfolio capital requirement

In general, this is a hard task because of the unknown form of the loss distribution, which probably cannot be done accurately without 1) restrictive assumptions or 2) heavy numerical work

In practice, "betas" (individual exposures' contributions to portfolio variance) are often used to approximate the marginal risk contributions. This is what Basel II also appears to utilize at least in part.

However, just like variance is generally not an exhaustive measure of dispersion, so are "betas" generally not accurate measures of marginal risk contributions.

Therefore, it is not surprising that inconsistencies in capital allocation (risk weights) may be detected.

Specific comments

Basel II IRB risk weights have been derived assuming that there is no systematic uncertainty in LGDs.

This is criticized by the paper based on

- theory (collateral often involves the same systematic risk as company asset values that drive defaults) and
- some data on loan and bond loss rates across high and low default years

An additional (theoretical) argument could be added:

- Schleifer and Vishny (1992): "Liquidation Values and Debt Capacity: A Market Equilibrium Approach", *Journal of Finance*.

In particular, risk weight for a low LGD exposure should account for a higher proportional increase in LGD in a bad year than the risk weight for a high LGD loan (risk weights for low LGD should be relatively more conservative)

The paper suggests an alternative risk weight function that appears to be an improvement to the current one in this respect

My main question:

- Is systematic LGD risk already (at least partly) factored in in the Basel framework through collateral haircuts?

Collateral haircuts are defined outside the risk weight function

A fixed percentage haircut for a certain collateral type seems to accomplish at least part of the nonlinear LGD response: an X% reduction to the current collateral value increases the uncovered part of the exposure relatively more the more collateral the exposure involves

The paper sees the problem of risk weights primarily relevant for the advanced IRB approach, but

- low LGDs possible also in foundation IRBA via financial collateral (like equity)
- banks' own LGD estimates in the advanced IRBA would also have to consider corresponding issues such as those represented by explicit haircuts in the foundation approach

Conclusions

Important to raise the question of whether systematic risk in LGD is – and if not, how could it be - taken into account in Basel II.

In principal, systematic LGD risk might –if not already- be considered through appropriate collateral haircuts outside the risk weight function instead of adjusting the current risk weight function itself.

Which is the better way? At the least, a possibly adjusted risk function would have to be consistent with the haircut procedures of Basel II.