**Credit Scoring**

Credit scoring is an analytical technique used to assign a rating that has been boosted by the requirements of the Basel II capital requirements for banks.

The basic idea is to prepare ratios from companies’ accounts that are leading indicators (i.e. two or three years ahead) of potential difﬁculties. Once the ratios have been established, they merely have to be calculated for a given company and cross-checked against the values obtained for companies that are known to have run into problems or have failed. Comparisons are not made ratio by ratio, but globally. The ratios are combined in a function known as the Z-score that yields a score for each company. The equation for calculating Zscores is as follows:

Z = α +

where a is a constant, Ri the ratios, βi the relative weighting applied to ratio Ri and n the number of ratios used.

Depending on whether a given company’s Z-score is close to or a long way from normative values based on a set of companies that ran into trouble, the company in question is said to have a certain probability of experiencing trouble or remaining healthy over the following two or three year period. Originally developed in the USA during the late 1960s by Edward Altman, the family of Z-scores has been highly popular, the latest version of the Z’’

equation being: Z’’ =6.56X1+3.26X2+6.72X3+1.05X4

where: X1 is working capital/total assets; X2 is retained earnings/total assets; X3 is operating proﬁt/total assets; X4 is shareholders’ equity/net debt.

If Z’’ is less than 1.1, the probability of corporate failure is high, and if Z’’ is higher than 2.6, the probability of corporate failure is low, the gray area being values of between 1.1 and 2.6. The Z’’score has not yet been replaced by the Zeta score, which introduces into the equation the criteria of earnings stability, debt servicing and balance sheet liquidity.

The MKV ﬁrm (bought by Moody’s in 2002) also developed its proprietary scoring model founded on an optional approach.

Scoring techniques represent an enhancement of traditional ratio analysis, which is based on the isolated use of certain ratios. With scoring techniques, the problem of the relative importance to be attached to each ratio has been solved because each is weighted according to its ability to pick out the ‘bad’ companies from the ‘good’ ones.

That said, scoring techniques still have a number of drawbacks.

Some weaknesses derive from the statistical underpinnings of the scoring equation. The sample needs to be sufﬁciently large, the database accurate and consistent and the period considered sufﬁciently long to reveal trends in the behavior of companies and to measure its impact.

The scoring equation has to be based on historical data from the fairly recent past and thus needs to be updated over time. Can the same equation be used several years later when the economic and ﬁnancial environment in which companies operate may have changed considerably? It is thus vital for scoring equations to be kept up to date.

The design of scoring equations is heavily affected by their designers’ top priority, i.e. to measure the risk of failure for small and medium-sized enterprises. They are not well suited for any other purpose (e.g. predicting in advance which companies will be highly proﬁtable) or for measuring the risk of failure for large groups. Scoring equations should thus be used only for companies whose business activities and size is on a par with those in the original sample.

Scoring techniques, a straightforward and rapid way of synthesizing ﬁgures, have considerable appeal. Their development may even have perverse self-fulﬁlling effects. Prior awareness of the risk of failure (which scoring techniques aim to provide) may lead some of the companies’ business partners to adopt behavior that hastens their demise. Suppliers may refuse to provide credit, banks may call in their loans, customers may be harder to come by because they are worried about not receiving delivery of the goods they buy or not being able to rely on after-sales service, et