Credit Risk Management Framework

1. Credit Risk Management Process

Definition of Credit Risk Management
Credit risk management includes all the activities and systems that contribute to:

- Assessing the risks resulting from lending decisions;
- Limiting this risk to reflect the risk appetite of the company;
- Balancing this risk with commercial considerations to achieve company goals e.g. long term profit;
- Controlling the whole system, taking account of the bank's environment and strategic priorities.

Management Feedback Loop
Like all management processes, credit risk management depends on a feedback loop. Policy decisions reflect company goals (including risk appetite), portfolio performance, projected opportunities (from scorecard models) and assumptions about the wider operating conditions (economy, competition, regulation). These are translated into operating parameters, procedures and budgets, along with an articulation of expected results. Once implemented, policies generate a reaction from the lender's customers which is captured for analysis and compared against expectations. This leads to policy modification and adjustment, in line with changing conditions and company goals.

This process is shown in Figure 1.
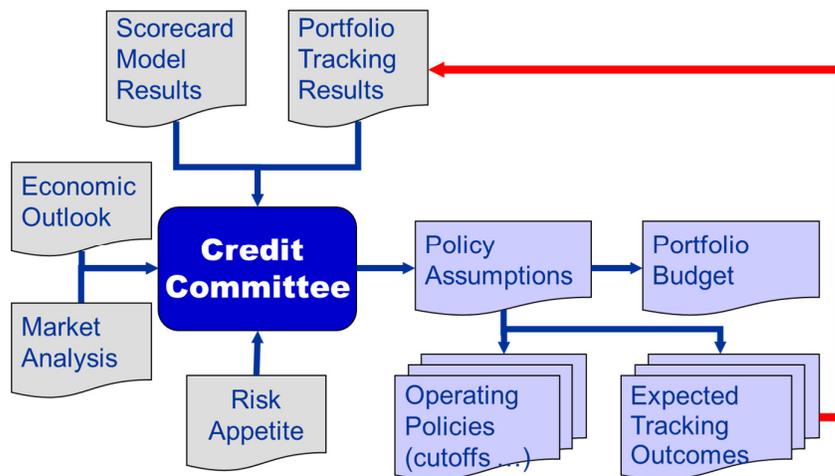
2. Role of Scoring

Delivery of Policy
Scorecards allow the direct translation of high-level policy to practical operational decisions. Thus, scoring forms a communication channel and control mechanism for the company's management.

Measurement of Risk

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The tracking information derived from scoring gives a regular and precise measure of the overall state of risk on the bank's portfolios. In addition, tracking information shows the effect of specific policies in place, which directly determine lending decisions.

Framework for Assessment of Scoring

The evaluation of use of scoring is determined by the two roles - delivery of policy and the measurement of risk, both overall "ambient" risk, and the efficiency of the company's policies to manage risk.

Limitations of Score

In a strict sense, a score simply summarises all the available information to estimate the probability of a customer or account becoming "bad" in a given delay. This is an important factor in all risk decisions, but may not be enough to set the decision. Extra complexity derives from two factors:

- The decision to be taken is not necessarily a simple "yes/no"; fixing a limit, determining price or granting a level of facilities (e.g., cheque card at account opening) available to the customer is also necessary.
- Profitability will depend not just on risk, but also on pricing and likely usage of the facilities on offer; thus these must be taken into account in making a decision.

In this paper, scoring is considered in a broader sense. It includes all the decision making mechanisms designed to support risk decisions, even those based on non-risk factors.

3. Operational control

Adherence to Policy

The first requirement for policy to be successful is that it be followed. This has three principal consequences:

- The policy must be formulated to facilitate its operation and enforcement - for instance, a scorecard specification must include procedures for obtaining the data needed to calculate the score.
- The operational mechanism should exist to make it easier to apply the policy than not to apply it.
- There must be a mechanism to verify that the policy is used - e.g. report on overrides.

Operational efficiency

Experience shows that the most profitable credit operations are those which are the most efficient. In other words, operational overheads do not seem to add value. In fact, by distracting the operation from its principal goals, they tend to reduce the quality of decisions. Therefore, low-cost producers benefit not just from lower operational overheads, but also make better decisions.

This suggests that there are benefits to be obtained from separating responsibility for risk decisions and for risk policy from the sales process. Specialisation increases and clarifies accountability. It also makes for greater operational efficiency. This is a key argument for centralisation of risk decisions.

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Responsiveness

The optimal policies for risk decisions change over time. Market conditions change, new products are created, better customer targeting leads to identification of segments which require separate treatment.

The policy delivery mechanism must allow for changes in policies over time. Therefore, a rigid system of operational control will not work - or not work for long. The system must be designed to accommodate change. A combination of flexibility and efficiency in the delivery mechanism makes the organisation more responsive to change. This is a decisive competitive advantage.

4. Tools

Risk Scores

Scores structure information. They summarise all the information about the risk of a given customer or application. In statistical terms, the key property of a score is that it is a "sufficient statistic" for the risk of a given event. Any policy that can be expressed through a score could (in theory) be expressed through a set of rules. However, the rules would be so complex that the policy would become impractical. Hence, the key advantage of scoring is that it simplifies the formulation of policy and its translation into operational procedures.

Scores are a key mechanism for expressing and developing lending policies. By quantifying risk, they allow it to be traded off against other elements in the decision process. If the decision is dependent on risk alone, then the policy is expressed through a cutoff. If other factors must be taken into account, the policy will be more complex.

By quantifying the risk, scores also facilitate the management of other aspects of risk policy. The score translates into a probability of a particular event occurring. These probabilities can be added over any subset of accounts to measure the overall risk of that sub-port.

Credit Limits

Limits are a key tool in determining a lender's exposure and hence in determining loss levels. An effective limits policy reduces risk in two ways:

- some customers remain good at a lower limit who would become bad if their use of credit were more important; for this to be important, the lender must control a large part of the credit available to the customer.
- where customers do go "bad", the losses are less than would otherwise be the case.

On the other hand, a limits policy reduces profits on good customers. Some are restricted by the actual limit level. Others set a reserve, for use in case of emergencies, and thus do not use the limit available. Hence, the limit level may restrict usage, even though the balance is apparently well short of the declared limit. Finally, a "flattery effect" induces spending by raising limits: it seems likely that this primarily serves to switch spending between available sources of credit.

There is little understanding and no coherent theory of how customer's behaviour reacts to limit adjustments. Scoring assumes that individuals are either good or bad, and does not allow for goods becoming bad through excessive exposure. It seems that most (good) customers are self-limiting.

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Hence, incremental limit increases beyond a certain level will have little effect on exposure for the goods, but will increase bad exposure.

Judgmental Lending Skills

In every risk management scheme, some decisions are made on a judgmental basis. This is because the information on which the decision is based is not sufficiently homogeneous to allow a scorecard to be developed, because resources are lacking or because the lending decision involves negotiation and trade-offs (e.g. pricing) outside the scope of the lending systems.

Good judgmental lending requires the same skills and discipline as those which underlie scoring-based credit management - lenders must organise the relevant information, balance conflicting factors and reach an overall conclusion as to the creditworthiness of a proposition. The key to good lending performance is thoroughness - i.e. not overlooking any relevant factor.

In addition to assessment skills, judgmental lending depends heavily on the negotiating ability of the lender. In many instances, the need to negotiate is the main factor preventing the replacement of judgmental lending by a more structured approach. The key supplementary skill is communication - understanding what the customer requires from the bank and communicating the rationale for a particular decision to the customer.

5. Management Information

Good Management Information

Good management information is key to making the organisation more responsive and hence more competitive. Responses are made in reaction to a stimulus, and in almost all cases this stimulus is either directly driven from management information, or its application is conditioned on a sound understanding of how the business works, driven by management information.

Good management information can be characterised by four properties:

- Supports Decisions : Information must be designed to focus on decisions, rather than on the overall performance of the organisation. This reduces the complexity of the information and permits management to develop a better conceptual model of how customers (and their own credit system) work. The result is more reliable and consistent decisions.
- Compares Alternatives: The essence of management is choice. This should be made explicit in the structure of management information. Very often poor choices result from an inadequate understanding of how various decisions interact. A good management report analyses the behaviour of the portfolio under different scenarios, to identify which of the alternative actions is the correct one. In many instances, this will not be one of the basic options presented at the outset, but a hybrid which combines the best features of several possible directions.
- Combines sources: The corollary of a decision focus is that reports should combine data from various sources. This is facilitated by the wider use of databases and spreadsheets.
- Sets performance targets: Finally, good management reports should measure performance against expectations or "standards". The standard may be the same measure at some stage in the past, or may reflect the result expected when a previous decision was made. The outcome will rarely match the expectation exactly. However, by making the expectation explicit, it is easier to compare what actually happened to the assumptions on which policy was based. This

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leads to questioning the assumptions and accelerates the learning process, hence giving better decisions in the future.

Support Requirements

Information is a resource of the organisation and must be managed with as much rigour as any other asset. The key elements required to use information successfully are:

- A database which reflects the context in which the organisation is run - for instance, if the main consideration is policies toward students is the later retention of these customers, then the database must allow the retention or loss of customers to be measured over a long period.
- Analysts who understand the business form both an operational and strategic point of view and are capable of interpreting the business significance of reports. Otherwise, reports are likely to be misleading and dangerous.
- Good computer tools (e.g. SAS, Excel) which allow for flexibility and for the integration of management information from various sources.

Management Requirements

On the management side, time and effort is required to get good management information. The key elements are:

- Identification of decisions: If reports are to support decisions, it is important to reflect on exactly what these decisions are. For instance, if marketing campaigns are reviewed on a quarterly basis, reports reflecting the consequences of previous decisions should be available on a quarterly basis.
- Establishing key variables: The key performance yardsticks for the success or failure of each decision must be clearly defined, to enable analysts to report on the consequences.
- Target setting: The corporate learning curve is much more rapid if explicit comparisons can be made against what was expected and what actually happened. Hence, targets must be set as decisions are made. These targets may not be met, but examination of the discrepancies between actual and expected performance indicates the issues to be considered in developing future policies.
- Information Culture: Most of all, management must react to information. In many organisations, the production of management information becomes an end in itself. Little effort is devoted to interpreting the results. Yet this is key if the policies are to improve in the future. This is a fundamental challenge - creating an environment where information makes a difference.