KEY RISK SCENARIOS   MONTE CARLO PLUS   RISK CHARGES FOR EACH SCENARIO   AGGREGATE CAPITAL REQUIREMENT   RISK REPORTING & CAPITAL DECISIONS

Efficienct Cost Control with simple What if Analysis

The Prudential Regulatory Authority (PRA) now recommends that operational risk calculations (Pillar 2 charges) across **all banks** should employ Advanced Measurement Approaches (AMA) techniques - the most sophisticated and risk-sensitive of the methods outlined in the Basel Accord. This is irrespective of whether the bank uses AMA for its Pillar 1 operational risk calculations or not. In addition, the regulators have made it clear that firm's overall operational decisions must be carried out using risk-based decision-making methodologies.
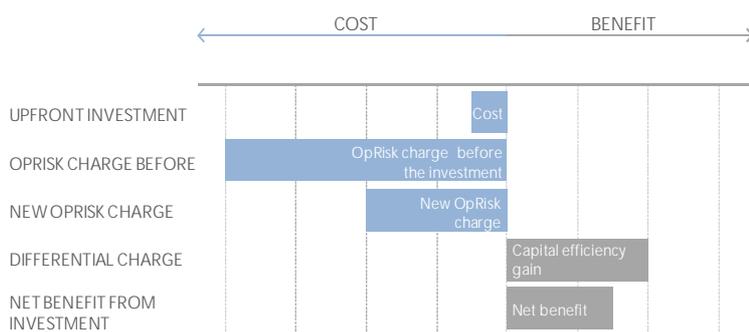
Most of the existing software in this area is generally limited both in approach and functionality. First, the existing models focus primarily on economic/regulatory capital requirements on an enterprise-wide level without drilling down to product or project level. This drawback is due to the approach on which these models are based – they use loss data analysis (LDA) and losses do not always exist on a granular level or do not exist at all for new products/projects, for example. Thus, the question remains - how can risks of new products be quantified if no historical data exists? Second, the existing models' focus is limited to the calculation of capital requirements only, without also exploring the models' uses for other risk-based decision-making purposes, e.g. insurance optimisation, risk-adjusted return on capital (RAROC) and efficiency of capital allocation.

The LDA methodology requires a large number of data sets that meet high quality standards (e.g. minimum number of data points and history). Furthermore, external loss data information is required to complement the relatively narrow and limited representation of the "true" risk profile. In theory, the firm needs to have 200 years' worth of data in order to more accurately represent the risk profile. Since, however, the business and control environment changes/evolves over a much shorter time horizon (e.g. 3-5 years), even the most complete internal loss data set is not necessarily informative since historical losses offer only a backward-looking view of the company. Similarly, even if the firm did have access to a data set containing all the external losses across the industry in which it operated, the firm may experience difficulties inaccurately scaling these external losses as they may have taken place in companies of differing sizes and with business models.

MONTE CARLO PLUS (MC+)

The MC+ system is based on a tried and tested approach constructed from individual risk scenarios where the risk frequency/severity inputs form the basis for the underlying statistical distributions. The solution utilises Monte Carlo simulations and is based on key risk scenarios – a statistical modelling method where key risk scenarios are placed at the centre of the analysis and which is used in AMA methodologies. The hypothetical but plausible risk scenarios are based on subjectively defined forward looking estimates and uncertainties around these. The system is also efficient as it only requires a few inputs i.e. no large data sets. For each risk scenario, the user only needs to input a limited number of expert opinions.

For example, consider the scenario whereby a firm is contemplating purchasing an IT system to minimize risk in processing FX transactions. With MC+, the net benefit of the capital expenditure can be broken down into a simple chain of cost and revenue items:

COST   BENEFIT

UPFRONT INVESTMENT	Cost
OPRISK CHARGE BEFORE	OpRisk charge before the investment
NEW OPRISK CHARGE	New OpRisk charge
DIFFERENTIAL CHARGE	Capital efficiency gain
NET BENEFIT FROM INVESTMENT	Net benefit

By quantifying the costs of implementing the new IT system, including the operational costs inherent in the IT product, a more effective, robust and efficient decision can be made regarding the new system and its impact on the business.

BENEFITS

MC+ is compliant with risk capital calculation requirements, Basel standards and takes into account leading academic risk research techniques. The simplicity of our limited-inputs system and its capability of running multiple scenarios simultaneously provides a ready-to-run, off-the-shelf solution for small to medium-sized financial services providers. The benefits of MC+ include:

► Rapid deployment
► Clearly defined risk scenarios for allocation of capital to each business initiative
► Inclusion of risk-adjusted return in decision-making methodologies
► A risk-based solution encompassing all key risks
► Model calibrated to firm's existing risk information.