BUREAU VAN DIJK

CreditPortfolioView™

CREDIT ECONOMIC CAPITAL MODEL

McKinsey's proprietary approach to calculating credit economic capital/VaR

Methodology

- Default intensity based with completely user-driven segment definition
- Three different methodologies used to cover wide range of portfolios in universal banks
  - Undiversified – single-name concentrations modeled through thousands of Monte Carlo simulations
  - Rated diversified – efficient modelling of large portfolios with many small tickets whilst still fully capturing rating migrations
  - Unrated diversified – default losses only (but no change in market value due to rating migrations)
- Stochastic LGDs with user-defined distributions and correlations to segment default rates
- Choice of risk-neutral valuation and DCF-based valuation

What makes CPV™ distinctive?

Technically advanced

- Can define a customized correlation structure with (if desired) high granularity in a bank's priority segments
- Can model different types of exposures (undiversified, rated diversified and unrated) due to range of methodologies available – is therefore particularly suitable for universal banks with a heterogeneous set of portfolios, allowing for precise yet efficient calculations
- Can model portfolio-specific correlation between exposures/ EAD and PD as well as between PD and LGD

Modular and transparent

- Highly transparent model enables easy customisation and helps buy-in from both internal stakeholders and regulators
- Easily extensible to model other risk events – e.g., country default events

Key aspects include

- Comprehensive – covers full range of credit exposures from sovereign and large corporates to large portfolios of small business and retail customers (with millions of accounts)
- Flexible – easily switches between modelling only credit losses from defaults and modelling changes in mark-to-market value. Can output from portfolio/ business unit level to exposure level VaR contributions
- Easy to use – our software partners can embed CPV's highly efficient simulation engine in end-to-end credit and portfolio management solutions

Messages from clients

"Our portfolio is quite unique. We need to see the relationship between wheat farming and livestock farming and how that affects my counterparts in the Midwest differently from the Northeast"
Large agricultural player

"Regulators do not like black-box-type economic capital models; we need a very transparent and intuitive approach"
North American bank

How do I use CPV™ beyond economic capital?

With regulatory capital requirements often exceeding economic capital, risk executives are now looking beyond economic capital. CPV™ can help in achieving the next horizon for internal credit portfolio risk analytics. Examples include:

- **Stress test** – macroeconomic drivers can be linked to default rates and other performance drivers; conditional portfolio loss simulations in CPV™ can then evaluate rating migrations and single-name concentration effects under the given macroscenario
- **Going concern capital** – today, regulators and bank executives are concerned about maintaining a bank as a going concern rather than ensuring solely that in the event of a bank's failure all creditors can be paid off; under the goingconcern capital perspective CPV™ therefore can be used to simulate the capital buffer required so that under relevant stress scenarios the remaining capital still meets minimum regulatory capital levels for a going concern

How do I start?

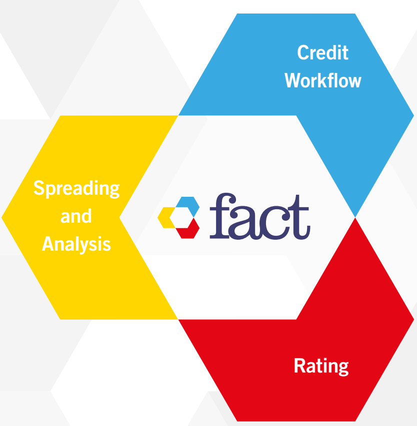
Available fully integrated in FACT (CPV™ methodology is owned by McKinsey)

The typical CPV™ implementation has 3 phases:

- **Initial scoping phase** – define a client's specific requirements such as any customisation or extension of the model or software needed via a sequence of workshops and discussions
- **Calibration phase** – collect the required historical data (internal or external proxies) and define the modelling parameters; define and implement the necessary input data feeds (i.e., the portfolio data)
- **Management implementation phase** – customise reports and incorporate CPV™'s outputs into performance management, strategic planning and capital management processes

Example outputs

- Overall portfolio loss distribution with chosen percentile loss amount
- Allocation at BU/transaction level (fully customized)
- Complete visibility into interim outputs (e.g. macro-economic scenarios, distributions of key drivers such as migration probabilities)



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