

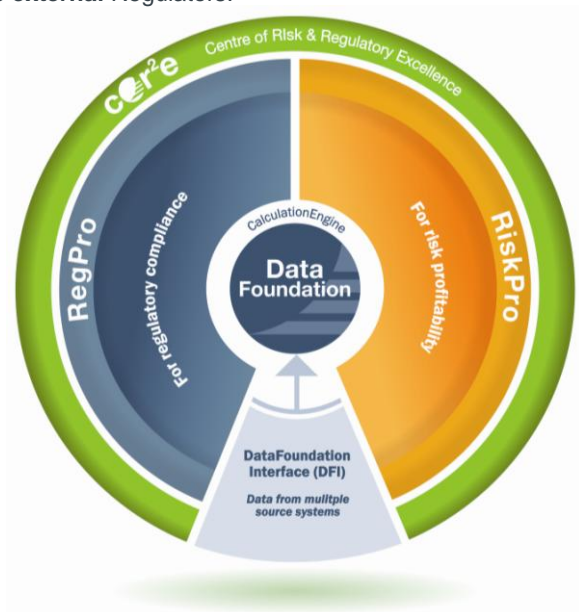
## Solution: Basel II

local knowledge global solutions

This datasheet describes the FRSGlobal RiskPro Basel II solution

### Introduction

As a result of the credit crunch, the global financial services industry is faced with increased and more complex regulation and a call for better risk management so that the market may be renewed and become stable. Better data management will provide better **internal** management and detailed reporting for the Board as well as information that is critical to the growth and stability of the global market to the **external** Regulators.

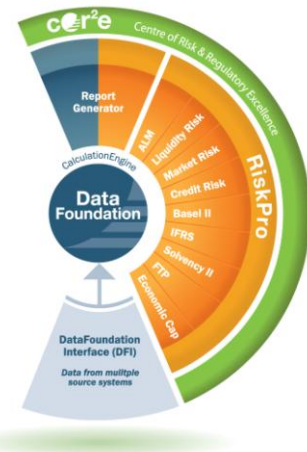


The FRSGlobal solution range

FRSGlobal provides global risk and regulatory compliance solutions on a unified platform through a combination of modules from **RegPro** and **RiskPro** - all fully supported by the FRSGlobal Centre of Risk & Regulatory Excellence (CoR<sup>2</sup>E).

- The **RegPro** modules are designed to meet global regulatory reporting requirements
- The **RiskPro** modules are designed to meet risk management and profitability analysis and operational risk requirements
- FRSGlobal solutions share a unified platform with DataFoundation risk and regulatory data repository, and CalculationEngine for complex calculations.

### RiskPro



**RiskPro** provides unified risk and profitability analysis. It covers a broad scope and depth of financial analysis, ensuring consistency of results and reducing the cost of analysis.

**RiskPro** has extensive financial product coverage, from saving accounts, complex loans, insurance instruments to exotic options and structured products.

**RiskPro** covers value and exposure analysis for all types of methods (fair value, nominal, NPV, observed value, amortised cost, various discounting methods etc), duration, key rate duration, sensitivity measures, various types of gap analysis, price and volatility shift, and VaR (parametric, historical simulation, Monte Carlo).

**RiskPro** solutions provide the user with the power of dynamic simulation – which allows evaluation of potential decisions in a “*what-if*” environment, and as a consequence enables highly quantified strategic decisions to be made with confidence.

**Risk management solutions can no longer exist in silo form – risk management and regulatory reporting is interlinked**

For more information on the FRSGlobal risk solution – visit [www.frsglobal.com](http://www.frsglobal.com)

## Business issue

Compliance with the Basel II regulatory capital requirements is mandatory in many countries.

## What is Basel II regulatory capital?

Basel II regulatory capital is the minimum capital that an internationally active bank requires to cover credit, market and operational risk based on the recommendations presented in the Basel II Accord, published by the Basel Committee on Banking Supervision. The original Basel I Accord was implemented in over 100 countries. Basel II was introduced in order to make the requirements more risk sensitive and was published in November 2005. The Basel II requirements have been implemented by national regulators in many countries and in some jurisdictions (notably in the EU) the Basel guidelines have been turned into law for all banks, not just internationally active banks.

### The main objective of the Basel II Accord is to:

- Strengthen the soundness and stability of international banking systems
- Create and maintain a level playing field for internationally active banks
- Promote the adoption of more stringent practices in the field of risk management

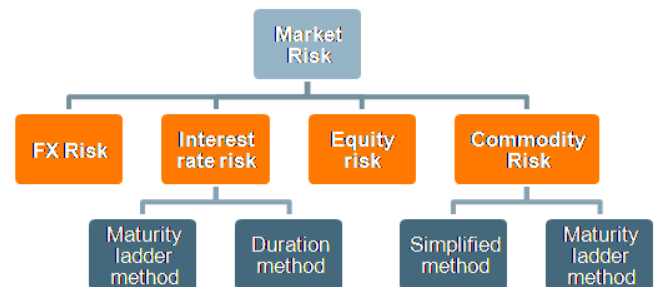
### The Basel II Framework consists of three pillars:

1. Calculation of minimum capital requirements
2. Supervisory review
3. Market discipline (public disclosure)

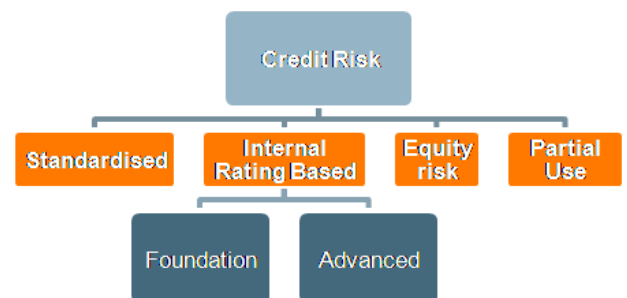
## FRSGlobal RiskPro solution to Basel II

FRSGlobal RiskPro provides a sophisticated Basel II module with the ability to calculate the capital charge for market and credit risk as required under Pillar 1. For Pillar II, interest rate risk in the banking book, liquidity risk and concentration risk are covered. The RiskPro database enables the reporting requirements set out in Pillar III.

The following market risk calculations are supported:



For credit risk, the FRSGlobal RiskPro Basel II module covers the capital charge calculation under the Standardised, Foundation IRB and Advanced IRB approaches and enables the partial use of these methods.



## FRSGlobal RiskPro functionality

### Basel II Pillar 1 – Market Risk

FRSGlobal RiskPro provides functionality for the calculation of the capital requirement to cover potential losses resulting from market risk in the trading book, under standard and internal model methods.

• **Standard Approach:** FRSGlobal RiskPro covers the Basel II standardised calculations for the following:

- Equity risk
- FX risk
- Interest rate risk: maturity and duration ladder approaches
- Commodities risk: maturity ladder and simplified approaches
- Options: delta-plus method - this looks into delta, the non-linearities represented by gamma and the reaction of option prices to volatility changes on the basis prices (represented by lambda or vega)

**Internal Models Approach:**

Three Value at Risk (VaR) methodologies are available using FRSGlobal RiskPro and enable the calculation of market risk under the internal models approach:

1. Parametric VaR
2. Historical simulation
3. Monte Carlo simulation

**Basel II Pillar 1 – Credit Risk**

FRSGlobal RiskPro provides functionality for the calculation of the capital requirement for credit risk under the standardised and internal ratings based (IRB) methods defined in Basel II.

- Standardised approach:** FRSGlobal RiskPro covers the calculation of risk-weighted assets and the capital charge, taking into account credit risk mitigation. Both the comprehensive and simple approaches for credit risk mitigation are supported.
- Foundation IRB approach:** FRSGlobal RiskPro covers the requirements for the IRB approach (foundation method). Basel II risk parameters (Probability of Default (PD), Loss Given Default (LGD), risk weight functions) and formulas are modelled in a transparent and flexible way.
- Advanced IRB approach:** FRSGlobal RiskPro covers the requirements for the IRB approach (advanced method). RiskPro inputs the calculated LGD, Credit Conversion Factor (CCF) and maturity into the Basel II formulas.
- Partial use:** FRSGlobal RiskPro allows the bank to use a combination of standardised and advanced IRB approaches within a portfolio.
- Instrument coverage:** All of the above methods are applied consistently for any type of financial instrument from deposits to exotic options.
- Historisation:** FRSGlobal RiskPro provides results at the level of the individual exposure, which allows aggregation and various groupings during post-processing.

For both the standardised and advanced approaches, the individual exposure is the basis for the calculation of the credit risk capital charge. FRSGlobal RiskPro includes

asset type-specific logic for option I & II for banks (country vs. bank rating), loan-to-value for residential mortgages, add-ons and credit conversion factors for off-balance sheet items, and rules for past-due exposures.

Credit risk parameters are defined in a highly flexible way, which allows for the specification of different cases and sub-cases and their corresponding treatment (e.g. assignment of PD, LGD).

Country-specific elements of the regulations can easily be modelled. Stress-testing of various parameters is part of standard functionality. For every object several instances can be created: e.g. one for the real-time calculation and several others for stress-testing. Validation of internal estimates of the IRB approaches, which is commonly called back-testing, is based on the historisation features of RiskPro.

Off-balance sheet exposures, such as derivatives and credit lines can be modelled as exposures. FRSGlobal RiskPro calculates the exposure for derivative instruments, which is enhanced by freely definable add-ons within the regulatory dimensions.

Off-balance sheet and on-balance sheet close-out netting, different types of collateral, guarantees and credit derivatives are the Credit Risk Mitigation (CRM) elements accepted by the Basel II module for the reduction of the capital charge of individual exposures.

- Credit risk mitigation is supported at the level of the exposure, credit line, counterparty or any group of contracts.
- Both collateral and a guarantee can be given for one specific exposure or for all the exposures of a given counterparty. A given contract can have any number of pieces of collateral (or guarantees). This gives the financial institution the freedom to model any contract structure, whether from the corporate, trading or retail business. Close-out netting is also recognised
- Several methods for collateral allocation are supported. For the Standardised approach, both the Comprehensive and the Simple approach can be selected. Substitution effects for guarantees, (adjusted) haircut, currency and maturity mismatch are taken into account, as well as thresholds for physical collateral (IRB Foundation) or real estate (Standardised).

## Basel II Pillar 2

Sound internal risk management practice relies on deep understanding of the fundamental mechanisms that affect the bank in changing market and economic conditions. This can be achieved only when management is provided with precise and informative indicators by an adequate quantitative analysis structure. For Pillar II, FRSGlobal RiskPro covers these needs for the interest rate risk analysis of the banking book, liquidity risk and concentration risk analysis.

## Basel II reporting

**Pillar 1** related calculations are partially performed in RiskPro and also as part of building reports in the FRSGlobal RegPro solution set.

FRSGlobal RegPro automates the process of generating regulatory reports, while giving the option to view and modify them as required. The ReportGenerator is the 'engine' of RegPro.

With RegPro you have a wide range of options for data analysis, including:

- Drilling down from a figure in a report to see the underlying data and the rules that were applied in generating the figure
- Drilling up from an individual data item to see where it is used in different reports
- Perform variance analyses, comparing any period of reports and data, and setting variance thresholds (regulators pay particular attention to discrepancies, requiring "one version of the truth").

Combining RiskPro with RegPro capabilities provides seamless tracing of individual contracts from the input data stage to the final figure on a report.

Please refer to RegPro product sheet for more information. **Pillar 2** related reporting is done in RiskPro.

More details are available on request [info@frsglobal.com](mailto:info@frsglobal.com)

### Features and benefits of FRSGlobal RiskPro Basel II solution

| Problem  | FRSGlobal solution feature   | Benefit to you   |
|--|--|--|
| Data for credit risk and market risk is often extracted from different source systems. This creates inconsistency in the results and makes comparison of numbers between departments impossible. | Single data model  | FRSGlobal RiskPro has a single data model for market and credit risk analysis, thus guaranteeing consistency of results.   |
| No adequate information to make a decision on moving to the Advanced approaches for credit risk.   | Standardised, Foundation IRB and Advanced IRB approach calculations          | FRSGlobal RiskPro covers the capital charge calculation for credit risk according to the Standardised, Foundation IRB and Advanced IRB approaches. All approaches can be calculated simultaneously. Ability to compare the capital charge between approaches will support the bank in making the right decision.   |
| The credit risk mitigation (CRM) process is often complex and difficult to apply.  | Support for Basel II CRM techniques  | FRSGlobal RiskPro supports the CRM comprehensive and simple methods, at the level of the exposure, credit line, counterparty or any group of contracts depending on contract and/or counterparty attributes. An optimal distribution of collateral to exposures is performed on a case-by-case basis. Optimisation of CRM allocation will lead to a decrease in the capital requirement. |
| Audit of the calculation process is often cumbersome and time-consuming.   | Capture of intermediate results data   | Detailed (intermediate) results at the single exposure level, provided in the database, ensure efficiency and transparency.  |
| Many financial instruments are complex in nature and cannot be modelled.   | Extensive financial product coverage from savings accounts to exotic options | The extensive product range available means that manual calculation using spread-sheets is not needed for complex financial instruments.   |
| National discretions in the Basel II requirements create problems in the implementation process of third party software.   | Support for national discretions   | Country specific regulations can be easily modelled. Expression editors allow flexibility in the calculation process (for add-on, collateral eligibility etc)  |
| It is difficult to implement internal models approaches for market risk.   | Value at Risk (VaR) calculations   | Three value at risk methodologies are available: parametric, historical simulation and Monte Carlo simulation  |
| Stress testing the influence of a high incidence of defaults on capital charge is problematic.   | Stress testing functionality   | Many sets of PDs can be defined and used for the capital calculations to reflect default statistics from different stages of the economic cycle.   |

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## FRSGlobal's offering and guarantee

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FRSGlobal is the only supplier of regulatory risk and compliance reporting, with coverage for 40+ countries. We provide over 1500 financial organisations – including 41 of the top 50 banking institutions – with enterprise risk and regulatory compliance reporting solutions that enable them to increase operational efficiency reduce costs and mitigate risks.

FRSGlobal customers receive software and rich regulatory content that is fully supported by the FRSGlobal Guarantee. This ensures that the regulatory reports under subscription are kept fully up-to-date with regulators' requirements. The Guarantee is facilitated by the FRSGlobal Centre of Risk & Regulatory Excellence (CoR<sup>2</sup>E) which monitors the changes that affect reporting requirements in more than 100 countries

The CoR<sup>2</sup>E team publishes a newsletter describing the latest regulatory developments. To subscribe, please register at [www.frsglobal.com](http://www.frsglobal.com).