




Real-time analysis with ARMS FRTB

Algorithmica
part of advisense 

A close-up photograph of a person's hand holding a black pen, pointing at a tablet screen. The screen displays a bar chart with three bars in blue, green, and red. The background is a blurred office setting. A large blue diagonal overlay covers the top left portion of the image, containing white text.

The biggest upheaval of trading book market risk capital measurement for decades. FRTB deadlines are creeping up on the banking industry. Firms need rapid calculations, front-to-middle office risk management and high quality data.

The background of the slide is a photograph of a modern office. In the foreground, a wooden desk holds a silver laptop on a stand, a large monitor displaying code, and various office supplies like a glass and a container. The background shows a bright, open-plan office with wooden ceiling beams, long linear lights, and warm bokeh lights from other areas.

FRTB

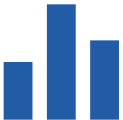
The FRTB framework requires vastly greater calculations to be performed, better data management resulting in greater complexity of impacts.

The framework is built around two main measurements: a new standardised approach featuring a sensitivity-based calculation and an internal models approach based on a liquidity adjusted expected shortfall calculation.

The FRTB Challenge



FRTB regulations require complex calculations to be performed for both standardised and internal models. Performance requirements of those calculations are also more demanding in terms of the number of valuations required and critically the volume of data being analysed.



Market data management is demanding under FRTB. An increase in the number of risk factors that need to be managed and a greater focus on the quality of data, means that firms may need to consider the suitability of current systems.



Firms that rely on legacy systems risk inaccurate reporting, which could negatively impact relationships with regulators and damage the profitability of the trading business, particularly if the front-office and risk reporting are not aligned.

Request a demo

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Algorithmica & The FRTB Challenge

FRTB challenge

ARMS FRTB solution



Capital charges

FRTB will increase market risk capital requirements

Firms need to be able to assess and optimise the capital impact pre-FRTB implementation. This includes consideration of different desk structures and modifications to the risk factor configuration to minimise non-modellable risk factor contributions.

The ARMS FRTB desktop application performs impact analysis and “what-if” capabilities on IMA and SA calculations.



Architecture

The FRTB calculations involve more complex aggregations (e.g. the Federated Approach) than existing risk calculations

SBA and IMA calculations can be performed on the fly on huge data sets using ARMS FRTB in-memory aggregation technology.

The liquidity adjusted expected shortfall (ES) calculation required by FRTB is computationally expensive

ARMS FRTB’s risk pricing models are built for high performance risk calculations while maintaining complete accuracy. The platform provides the ES results at desk level and firm level to be calculated on the fly, from a single set of P&L vectors.

ARMS FRTB includes a powerful calculation engine that scales well across multi-server environments.

The FRTB P&L attribution test will be difficult to pass if risk calculations use different pricing to the front office

ARMS FRTB provides support for flexible pricing approaches. Either native ARMS FRTB pricing can be used or front office pricing in the form of P&L vectors or PV grids can be imported (or a mixture of both).

Market data management

Extended risk factors and data quality are key considerations. Algorithmica provides enterprise-wide market data management.



Operations

Managing P&L attribution and back testing at desk level is going to require a bigger market risk team

ARMS FRTB tracks breaches and near misses of metrics such as the P&L attribution and back testing thresholds providing users with early warning of potential problems. The solution also provides tools to drill down into capital figures through desk and risk factor hierarchies, down to trade or scenario level data.

Expected shortfall is more sensitive to bad data than VaR

ARMS FRTB provides market data management tools to identify outliers in market data sets and (if appropriate) corrects the data.

The FRTB expected shortfall metric is less intuitive and more difficult to hedge than previous market risk capital metrics

Support for pre-deal “what-if” analysis is important with FRTB.

ARMS FRTB provides high performance “what-if” capabilities for new trades or strategies, including FRTB impact analysis.



Implementation, support & ongoing development

The cost to implement FRTB solutions

Algorithmica solutions can expand in functionality to capture FRTB- CVA capital, counterparty risk, XVA pricing and initial margin, thereby reducing a firm’s total cost of ownership.

The FRTB implementation timeline doesn’t provide much time to roll out a new market risk solution

ARMS FRTB is being used today by European banks for IMA reporting under the pre-FRTB rules.

Algorithmica’s professional services team has a strong track record in integrating ARMS FRTB into bank IT infrastructures and business processes.

ARMS RiskEye: Unmatched flexibility

ARMS FRTB is a component of Algorithmica's market leading risk management solution ARMS RiskEye. ARMS RiskEye solves the central challenges facing risk managers today, real-time analysis of risk by any chosen dimension. The solution architecture delivers high performance, even on modest hardware platforms, with powerful data management and fast FRTB calculation.

ARMS RiskEye is a modern, highly flexible solution that enables managers and institutions to gain competitive advantage, enhance decision making, and improve risk management.

The light-weight user interface and comprehensive API capabilities offer easy integration and extension, able to handle new regulations and business requirements.



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Trusted by top-tier global institutions, Algorithmica's ARMS FRTB provides the answer: a unique, modular solution that can replace legacy systems or complement and augment existing risk systems.



ARMS FRTB combines the ease of use of a turnkey system, with the functionality of an in-house solution, Algorithmica offers a lower total cost of ownership and provides your team with the tools to improve profitability.



Global banks, asset managers and hedge funds trust Algorithmica to run sophisticated risk, analytics and data management solutions.

ARMS FRTB is in production at many European banks today.

**Affordable,
market-leading analytics
that's easy to implement**

About Algorithmica

Algorithmica's team consists of leading experts in quantitative finance and analytics, data management and software development. Algorithmica delivers its technology and domain expertise to many of Europe's largest financial institutions.

Algorithmica, an Advisense company, has a presence in Stockholm (HQ), Copenhagen, Oslo, Helsinki, London and Frankfurt.

Advisense is a leading governance, risk and compliance powerhouse, offering best-in-class services and tech solutions to the European industry.

Algorithmica is a proud sponsor of the next generation of quantitative finance experts and their academic activity.





Contact us and request a demo.

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