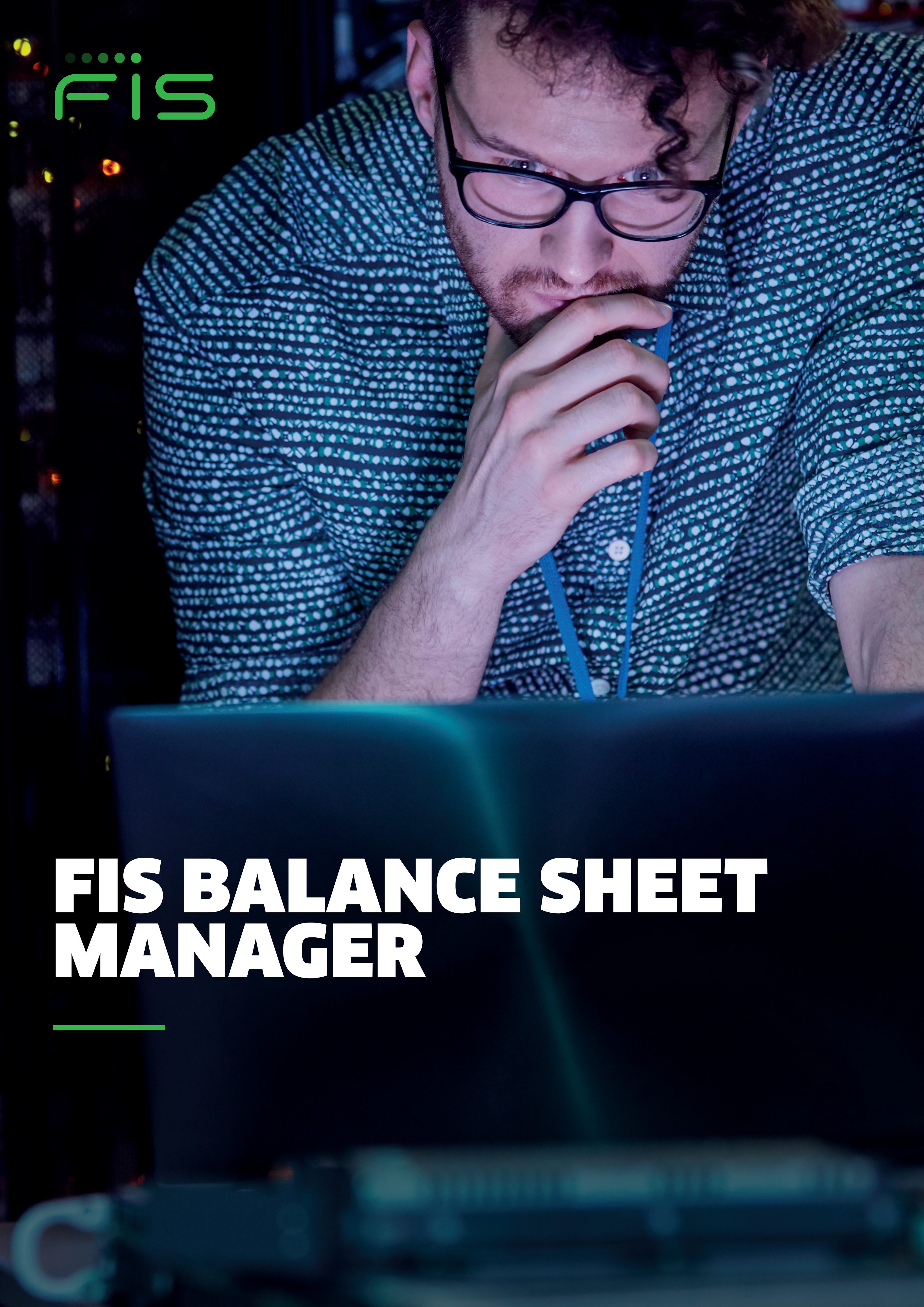


FIS BALANCE SHEET MANAGER

INTRODUCTION

Now more than ever, a stable stream of net interest income is vital for financial institutions. Economic conditions are changing, rates keep rising and margins are under pressure. Lending and leadership groups may want to reach for more yield. It's crucial to develop strategies that optimize earnings, liquidity and future capital allocation, while meeting regulatory demands and avoiding balance sheet surprises.

FIS® Balance Sheet Manager gives risk leadership the means needed to address these challenges. It's an integrated, comprehensive balance sheet management solution that helps financial institutions manage, evaluate and control all types of financial risk. It breaks down silos across finance, risk and treasury to centralize interest rate risk, earnings and profitability, liquidity risk, credit risk, forecasting funding, hedging and capital.

The solution is built as an integrated modular framework on a single platform and rapidly re-appraises both risk and opportunities, helping give risk leadership a detailed, holistic view of the behavior of an institution's key risk metrics. It also provides an "instantaneous future vision" into how potential changes to the quality and composition of the balance sheet under changing market conditions impacts the firm's financial and regulatory metrics.

Financial institutions under pressure

Recent events have highlighted more deficiencies in financial institutions' risk management frameworks, their underlying business models and both conduct and risk culture. Regulators highlight, as an industry, the slow speed of remediation to regulatory matters requiring attention.

In response to regulators, financial institutions' board of directors are placing an increasing supervisory lens over risk models, risk operating models and their alignment to risk governance frameworks, as well as risk cultures. They are demanding better, more insightful and more timely information.

As the current operating environment continues to shift, despite financial institutions gaining the upside in terms of improved net interest income (NII), it has exposed volatility in existing managed risks within the balance sheet such as market risk in securities portfolios and imprecise hedging under hedge accounting rules.

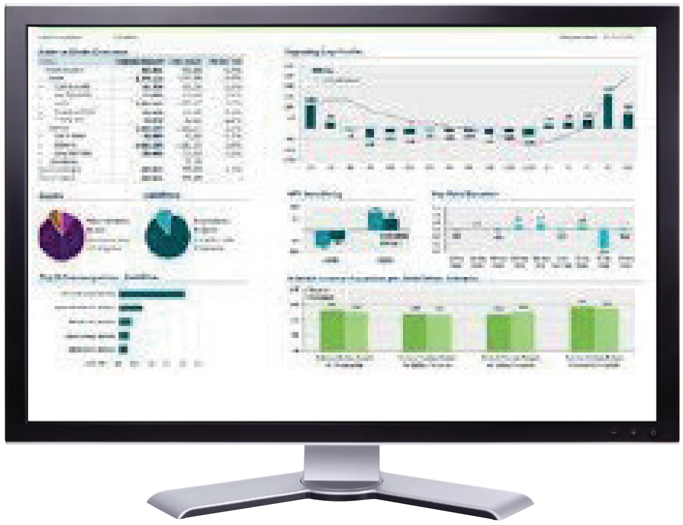
As the cost of rising interest rates seep into the economy, the downside of rising rates is likely to impact the overall quality of the balance sheet. Rising pressures on borrowers to service floating debt and upward re-pricing of fixed debt is leading to higher impairment rates and reduced collateral values. Meanwhile, savers seek a better return, while competition in the savings markets warms up or shifts focus to another unforeseen event that sends market analysts furiously digging into a financial institution's balance sheet.

Despite the above, some of the legacy and in-house systems currently deployed are not designed to be so flexible and adaptive to a fast-changing world. Operational efficiency becomes an important aspect to consider. Financial institutions need granularity in their insight as to what may unravel next so that they can model the impacts and consider the right strategies to mitigate.

This current state of play with risk systems is leading to a widening expectation gap between the firm's **"stewards of the balance sheet,"** and the regulator and other stakeholders. It has always been in the background, but recent events have amplified this situation.

Financial institutions remain under pressure to further digitize risk analysis and modernize risk infrastructures, document models and measurement systems and their framework to:

- Gain a more holistic and transparent view of the "balance sheet of risks" at an enterprise level
- Have a consistent granular view of key risks that may evolve that are inherent in the business model, and current and future balance sheet
- Quickly stress/slice/dice/pivot the balance sheet by risk factors and then view the related impact on other risks, key business and regulatory metrics for a more balanced view to inform decision making
- Respond and re-assess risk and opportunity in a rapidly changing operating environment
- Ensure a high level of trust in the underpinnings of measuring exposure, reporting against limits and re-validating risk appetite
- Improve agility in delivering regulatory change and remediation; fully discharge regulatory, compliance and fiduciary duties, while gaining business value beyond the regulations



FIS has the answer to address the expectation gap, break down those silos and ensure that financial institutions can re-tool with a modern future-proof balance sheet management framework.

FIS BALANCE SHEET MANAGER

- Is an integrated, comprehensive balance sheet management solution that helps financial institutions manage, evaluate and control all types of financial risk
- Breaks down silos across finance, risk and treasury to centralize interest rate, liquidity, credit loss and capital
- Has been carefully extended and redesigned to provide a complete platform for assessing the inherent cobweb of financial risks in the balance sheet, even though its original roots are in core asset liability management (ALM) and liquidity
- Moves beyond traditional ALM into the wider arena of strategic balance sheet management, covering a wide range of interconnected risks
- Helps risk managers to evaluate, stress- and scenario-test the balance sheet for multiple financial risks and translate that into impacts on P&L, credit losses, liquidity and capital
- Offers common risk engines as part of the core solution, with a modular extensible structure that allows our clients to implement over time a consistent, modern, scalable risk framework for enterprise management of the balance sheet through a single application

Our approach is to build once, scale up and re-use many times to future-proof your investment, accelerate your ROI and ensure you have a controlled hand on the management of risk whatever the outlook. Balance Sheet Manager helps financial institutions implement industry best practices for strategic balance sheet management processes and deliver information essential for the asset liability management committee (ALCO), finance, risk and treasury executives to support board-level strategic decision making, including meeting the needs of firm-level and regulatory-driven stress and scenario testing.

Results can be delivered in the form of standard or customized reports, as well as web-based dashboards, providing a granular view of risk and facilitating informed decision making at a pace that integrates into other corporate reporting systems as required. It also holds a rich history of consistent management information (MI) which can avoid the cost of duplicated data sourcing and building from scratch other data marts, as “balance sheet performance” drives everything.

Our modern cloud enabled architecture supports the digital transformation of Finance, Risk and Treasury bringing both choice and scale to our cloud based deployments and leveraging off FIS industry leading and compliant Cloud Services, including hosted and managed services to reduce your internal cost footprint and simultaneously reducing BSM runtimes.

Key benefits

- Fully integrated risk management across a spectrum of risk types, empowering risk measurement and evaluation across organizational boundaries
- Fully scalable, providing a risk management framework that financial institutions can build out over time and quickly adapt as their business grows
- Best-of-breed risk modeling, under a single product wrapper with a common look and feel front-end, which helps financial institutions take risk management well beyond check-box compliance and focus on empowering risk professionals to excel at their roles
- Over 30 years of experience and expertise
- Flexible, tested solution that has navigated through multiple market crisis, economic, credit and interest rate cycles, responding to regulatory change and remediation
- Also suitable for early-stage startup, high-growth and challenger and digital firms who all benefit from the support and system development gained across 400 clients globally and across multiple supervisory jurisdictions; since it’s modular, financial institutions can build on a firm, scalable foundation
- A development roadmap, shaped by our clients’ future needs and investment in research and development and supported by a financially stable Fortune 500 company
- Scalable solution to meet our clients’ needs today and into the future
- Complementary global professional services support from FIS and our alliance partners
- Our Cloud enabled balance sheet manager not only offers a leading-edge cloud architecture. But also a range of support and managed services, to simply the overall management of your BSM architecture and also reduces the overall end to end cost footprint to your firm.

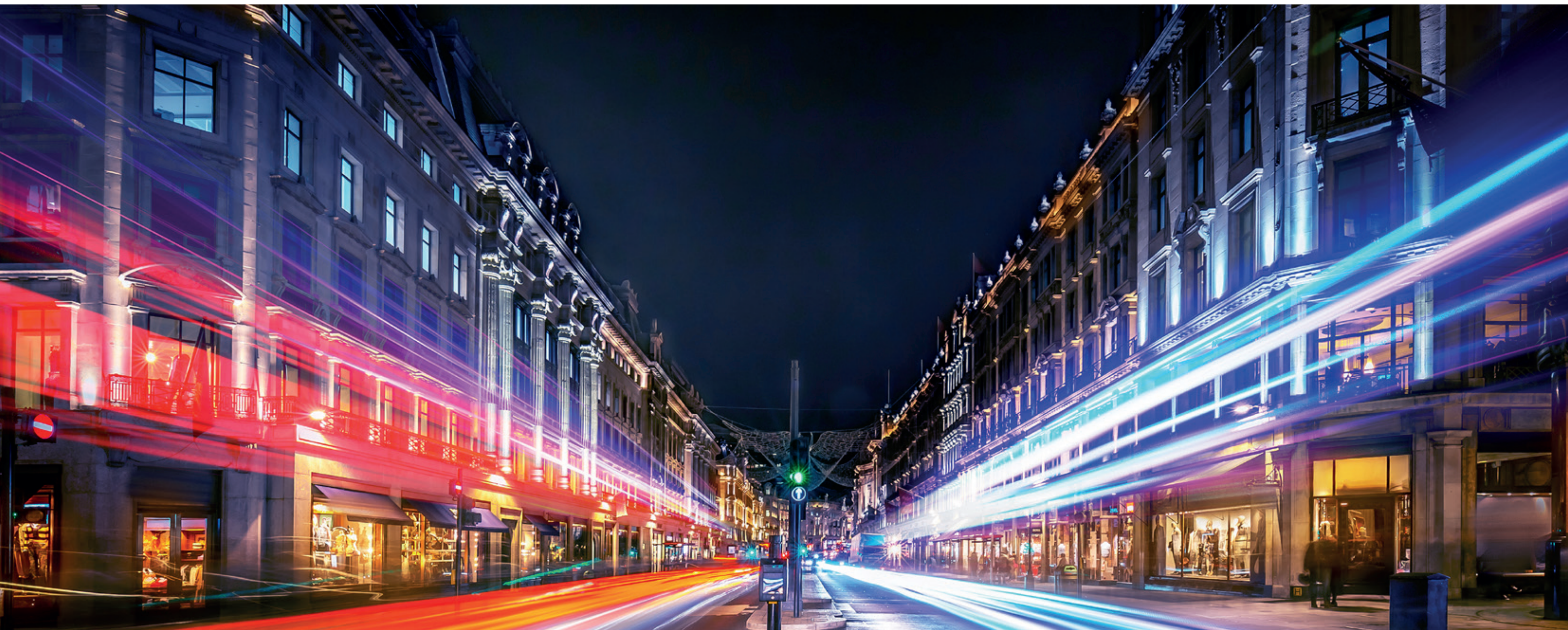
MODULE	SUMMARY FEATURES

ALM
 	
• IRRBB/CSRBB-compliant
• Maturity mismatch
• Cash flows
• EVE sensitivities
• NII – Earnings simulation
• Funding optimization
• What-if scenarios
• Rich, muti-dimensional reporting
• Limits monitoring
	The ALM module offers deep and extensive modelling, scenario and simulation capability that is international and national regulator IRRBB /CSRBB-compliant for managing, reporting, stress testing and optimizing IRRBB both for ‘on and off-balance sheet’ current and future exposures, including granular EVE/NII modelling plus deltas.
	
	• Construct multiple behavioral-based models, including automatic hedging and balancing capability.
	• Complete scenario and stress test-based modeling for shocking multiple risk factors. Fully supports your own formula-based modelling requirements.
	• Forecast the future balance sheet and income statement projections including static and dynamic simulation, based on business, assumptions (can also import from external assumption models), portfolio replication roll-overs, volume, target balance, margin, migration, NMD run-off and decay or using custom formulas.
	• Leverage feature-rich pre-built IRRBB reports that include sensitivities, maturity mismatch, repricing gap and cash flow reports, with flexible multi-dimensional reporting structures. Drill-down to single account/position level for traceability. Balance Sheet Manager has an extensive range of filtering options.
	  – Feature-rich multi-dimensional reporting
	  – Drill-down to single position level
	  – Extensive filtering
	• Monitor exposures against IRRBB limits – firm level, currency, portfolio, business line, entity, etc.

FTP • Fully ILAAP-compliant • Supports operational and strategic decisions • Stress, forecast, value and simulate FTP • Incorporate the true costs of liquidity and funding and capital • Firm-specific/product FTP curves • What-if • Rich muti-dimensional reporting	The FTP module enables firms to establish a comparable, transparent and compliant profitability measurement system by decomposing NII into its true components. This both helps define the drivers of past profitability by products, business units, etc., as well as provide pricing for future earnings and decrease the uncertainty within financial and product planning. Our clients typically leverage this information to support operational and strategic decisions on managing future NII volatility under various scenarios, correctly incorporate the true costs of liquidity and funding and capital into overall internal funding price, and define the right incentives across the profit centers and products to drive sustained profitability. The solution offers: • Margin analysis • ITP/LTP • Pro-forma FTP • Term mismatch contribution • Treasury performance • Non-maturing account modeling The solution helps financial institutions set specific FTP curves at each grid point. Standard and customer-specific spread curves can be delivered independently of the discounting/repricing curves. • Achieve delivery of curves onto position-level data, differing between products and currencies. • Gain flexibly-derived FTP curves within the formula editor. • Leverage additional setup of spreads and spread curves configured according to your requirements. • Use a pre-computed FTP rate, margin or effective yield as an alternative. • Gain feature-rich multi-dimensional reporting. • Utilize drill-down to single position level.

MODULE	SUMMARY FEATURES
Stochastic ALM • Earnings at risk (EaR) • Economic value at risk • Economic capital	Stochastic ALM helps financial institutions overcome the subjectivity embedded in every user-defined interest rate forecast. The solution uses term structure models or historic simulation to generate a large number of future interest rate paths which are further combined with defined balance sheet assumptions to calculate a distribution of possible earnings and market values to support the computation of: • Earnings at risk (EaR) • Economic value at risk (VAR) • Economic capital • Feature-rich multi-dimensional reporting • Drill-down to single position level

Liquidity • Regulatory-compliant • ILAAP-compliant • Supports operational and strategic decisions • LCR/NSFR • Stress, forecast, value and simulate liquidity and key ratio • Survival Horizon modeling and reverse stress testing • Contingent funding testing • What-if • Rich muti-dimensional reporting	Financial institutions gain a 360° view of liquidity risk, enabling clients to compute liquidity risk-specific metrics and indicators with the required frequency. The solution provides full simulation of forward/forward liquidity i.e., a 30-day coverage ratio view, 60 days out, under BAU and under stresses. It is also Basel and national supervisor-compliant and includes calculations such as spot liquidity coverage ratio (LCR), net stable funding ratio (NSFR), retail deposit ratio (RDR) and any other user-defined metrics for measuring liquidity. • Leverage stress and shock scenarios, including economic stress, rate stress, market stress, idiosyncratic stress or combined stresses. • Gain survival horizon and reverse stress testing and incorporate behavioral change. • Utilize full-featured liquidity planning capabilities, including retail, wholesale and debt funding planning, including contingent funding. • Use balancing and formula-driven rules to determine future funding optimization, assess impact of encumbrance, haircuts and counter-measure deployment to re-validate the continued viability of contingent funding plans. • Benefit from full monitoring of exposures against liquidity limits at both firm level as well as ccy, portfolio, business line, entity, etc.



MODULE	SUMMARY FEATURES
Market risk • Historical VaR • Parametric VaR • Monte-Carlo VaR • Shortfall VaR • Marginal VaR • Incremental VaR • Contribution VaR • VaR backtesting	The Market Risk module allows quantifying and monitoring market risks across both trading and the banking book. The solution identifies and evaluates market risk wherever it originates, thus allowing to reliably measure and proactively manage the institution's risk exposure. Sophisticated risk analytics include sensitivity analysis, scenario analysis and the computation of value at risk (VaR), IFRS 13 valuations. It includes over 220 derivative and cash instruments of all major risk classes, including equities, commodities, credit, foreign exchange, inflation and interest rates that are covered by the market risk module. The solution provides: • Historical VaR • Parametric VaR • Monte-Carlo VaR • Shortfall VaR (expected shortfall) • Marginal VaR • Incremental VaR • Contribution VaR • VaR backtesting • Extensive stress and scenario analysis for all major risk factors • Feature-rich multi-dimensional reporting • Drill-down to single position level

Hedge accounting • IASB/IFRS-compliant • Micro fair value • Portfolio fair value • Hedge adjustments • P&L entry • Effectiveness testing	The hedge accounting module offers full coverage of hedge accounting requirements for micro and portfolio fair value hedging and for financial institutions to achieve accounting compliance under both IAS 39 and IFRS9, and the expected industry adoption of the dynamic risk management approach. All assets, liabilities and derivatives are classified according to accounting categories to allow for a correct carry amount calculation. This encompasses full mark-to-market valuation as well as amortized cost calculation using the effective yield method. The solution offers these categories: • Micro fair value • Portfolio fair value • Hedge adjustments • P&L entry • Effectiveness testing **The solution helps:** • Identify hedge members for hedge relationship definition • Perform prospective effectiveness testing • Achieve retrospective effectiveness testing • Support the preparation of GL hedge entries • Offer closing and amortization of hedge adjustments • Perform scenario and simulation of future rate environments

MODULE	SUMMARY FEATURES
IFRS 9 impairment • Generalized model (EAD, PD, LGD, future expectations) • Expected credit loss • Alternative scenarios and forecasting • Credit-adjusted ALM	The IFRS 9 module provides support for the whole spectrum of impairment and impairment-related processes for the balance sheet and allows financial institutions to control their impairment accounting and related stress and scenario testing including: **Production** • Expected credit loss (ECL) calculation • Risk segmentation • Parameter allocation • Probability of default (PD), loss given default (LGD) and exposure at default (EAD) modeling • Stage allocation • Booking to GL • Feature-rich reporting for supporting disclosures • Calibration and backtesting of risk parameters • Assessment of the quantitative impact on loss allowances **Forecasting** • Forecasting stage transition • Simulation of future loss allowances under various scenarios • Calculation of ECL **Impact assessing** • Adjusted NII and EVE forecasting considering the impact of ECLS for credit-adjusted ALM • Stress and scenario test

P&L planning • Flexibility in planning • Top down and bottom up • Planning consistency • Plan validation • Plan stress testing • Reduces time and effort • Reduces plan cycle time	The P&L planning module extends the simulation capabilities beyond the traditional product-based forecasting of ALM, NII, margin calculation and liquidity to further encompass the whole entity to provide comprehensive balance sheet and income statement (profit and loss) forecasts down the retained earnings and reserves to assist capital planning, capital allocation and the ICAAP. The solution helps financial institutions perform scenario-dependent balance sheet and P&L simulations, as well as macro factor sensitivity and what-if analysis, together with the ability to validate the proposed baseline plan through embedded stress testing (firm and market level) to evidence necessary governance, scrutiny and challenge in producing a prudent financial plan, for Exco and board approval. The solution offers: • Non-interest income/expense/future value (FV) effects • Capex/OpEx: accrued/non-accrued P&L • Modeling cash flow and volume effects • Taxes, dividends and retained earnings

MODULE	SUMMARY FEATURES
Capital management • Forecast RWAS • Economic capital • Regulatory capital • Scenario and capital stress testing	The capital management module has been developed to help support the capital assessment process for the both the current and future balance sheet (on and off-balance sheet), and the profit-generating capacity of the institution through the P and L module, both on a normative and economic view. The solution allows several approaches to the calculation and flexing of risk weighted assets (RWAs) and related collaterals for capital and ICAAP/CCAR analytics. Including comparative analysis for the new Basel 4 Output floor, for efficient capital allocation in long-term planning. **The solution covers:** • Economic capital – Credit metrics – CreditRisk+ • Regulatory capital • RWAs under the standardized and IRB approaches, including recent Basel 4 changes

Data hub • BCBS 239-ready • Consolidate multiple sources • Validate completeness • Rule-based corrections • Set aggregation rules • Rule-based enrichment of data • Data lineage, versioning, segregation of entities and duties	The data hub module's purpose is to consolidate position data from various sources, correct, transform and aggregate data to provide point-of-access to FIS risk engines. The same risk data position is then leveraged as a single version of truth for all business functions to ensure risk engine calculations are based on the same consistent data set, ensuring consistent results in risk evaluation and reporting compared to a siloed legacy system approach. The module solves common ETL challenges by internalizing position aggregation, simple custom data transformations and augmentation (i.e., defaulting rules). Data stewards and business users are in full control of position handling, without another drain on vital IT resources. This reduces implementation cost, lowers data maintenance and increases adaptability and agility, while also ensuring data lineage throughout the system. • Consolidate multiple sources. • Validate completeness. • Leverage rule-based corrections. • Gain flexible attributes management. • Aggregate rules and leverage rule-based enrichment of data. • Gain common position and market data management. • Use data lineage, versioning, segregation of entities and duties.

MODERNIZE BALANCE SHEET MANAGEMENT

Talk with us today.

About FIS

FIS is a leading provider of technology solutions for financial institutions and businesses of all sizes and across any industry globally. We enable the movement of commerce by unlocking the financial technology that powers the world's economy. Our employees are dedicated to advancing the way the world pays, banks and invests through our trusted innovation, absolute performance and flexible architecture. We help our clients use technology in innovative ways to solve business-critical challenges and deliver superior experiences for their customers. Headquartered in Jacksonville, Florida, FIS ranks #241 on the 2021 Fortune 500 and is a member of Standard & Poor's 500® Index.

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