

# SAS<sup>®</sup> for asset and liability management and liquidity risk management

A powerful, integrated system for improved balance sheet management



Asset liability management (ALM) is a core discipline focused on analyzing and managing balance sheet, profitability and liquidity risk impacts resulting primarily from changes in interest rates. Recent market conditions and bank failures have led banks and other financial institutions to rethink their ALM and liquidity risk management processes to improve business performance and prepare for heightened regulatory requirements.

Initially, many focused on efficiency gains through automation and flexible what-if analyses. This approach improved quality along with efficiency. Now, banks are looking for ways to enhance their ALM programs through more effective balance sheet management - for greater strategic business value and sustainability. This requires a broader, more granular and forward-looking perspective around ALM. To succeed, the approach must link tightly with risk management functions while remaining agile enough to accommodate changing business conditions.

An asset and liability management and liquidity risk management solution from SAS integrates with other risk and finance programs. Built on an industry-leading platform and proven, research-backed analytics from Kamakura, our solution provides state-of-the-art functionality also related to stress testing, IFRS 9, CECL and capital adequacy assessment.

Combining the power and scalability of the SAS risk management foundation with the functionalities of Kamakura Risk Manager delivers a comprehensive framework for managing interest rate risk, market risk, credit risk and funding liquidity risk. With easy-to-use, out-of-the-box capabilities for ALM and liquidity risk management, regulatory compliance and risk-adjusted fund transfer pricing, it also creates a flexible and transparent environment for addressing current and future user-specific requirements.

## Challenges

- **Economic uncertainty.** The COVID-19 pandemic brought uncertainty to the global economic outlook, along with volatile interest rates and asset values. Amid prolonged inflation and geopolitical concerns, financial institutions struggled to quantify heightened losses and cash flow uncertainties.
- **Fast-rising interest rates.** After a long period of historically low and stable interest rates, fast-rising rates and an inverted yield curve exposed financial institutions to liquidity risks and profitability pressures. An agile business model improves efficiencies and establishes more forward-looking balance sheet management and optimization practices.
- **Rapid technological advances.** The rapid emergence of advanced analytics and high-performance computing accelerated the pace of change and prompted a new wave of fintech companies to challenge traditional business models.
- **Increasing management and regulatory requirements.** Uncertain times lead management to seek more frequent and granular insights. Due to the banking sector crisis, regulators are expected to increase scrutiny on risk management practices further – leading to more risk-sensitive scenario-based analyses, such as stress testing.

## Capabilities

With the SAS solution for ALM and liquidity risk management, you can operate your ALM processes with a high degree of granularity and transparency. Our solution provides a comprehensive package of analytical, computational and governance capabilities for the full range of ALM functions. Through a single, scalable platform and modular structure, you can manage processes, prepare data, execute analyses, and consolidate and report results. In turn, asset liability management can become a dynamic, value-enhancing component of your strategic planning processes.

### Market data and credit risk calibration

Apply state-of-the-art interest rate curve smoothing and term structure simulation techniques, credit risk spreads, credit risk models and market value calibration for derivatives with multi-factor curve analytics using industry-leading technology.

### Cash flow generation and valuation coverage

The SAS solution can generate both contractual and behavioral (interest and principal) cash flows for a large set of accounts and instruments. Calculations can be performed on a traditional (static) or dynamic balance sheet, allowing you to quantify the impacts on your portfolio over multiple scenarios or simulations of market or behavioral risk factors. Risk premiums (interest, credit and liquidity risks), behavioral components and embedded optionalities can be further decomposed and aggregated for more granular analysis.

### Analyses for interest rate risk and liquidity risk

Using powerful analytics from SAS can help you achieve regulatory compliance more efficiently. Highly scalable cloud computing allows you to perform a wide range of calculations for balance sheet risk and liquidity risk more quickly and cost-effectively.

With SAS, you can:

- Compute the economic value of equity and net interest income over a range of regulatory prescribed scenarios (as well as a virtually unlimited number of what-if scenarios).
- Quickly perform granular calculations that incorporate exposure yields, durations and convexities.
- Efficiently compute interest rate risk of the banking book (IRRBB), liquidity coverage ratio (LCR) and net stable funding ratio (NSFR) measures.
- Perform liquidity and repricing cash flow gap analysis on user-defined time periods.
- Use powerful analytics to optimize your cash flow strategy.

### Stress testing and simulations

With SAS, you can perform dynamic analyses of the balance sheet under a range of business and economic assumptions. Achieve greater alignment with enterprise stress testing by projecting your balance sheet over a range of market/macroeconomic and behavioral scenarios. Refine your analysis with your own balance sheet evolution assumptions. And incorporate historical and model-based simulations to further test the robustness of your portfolio.

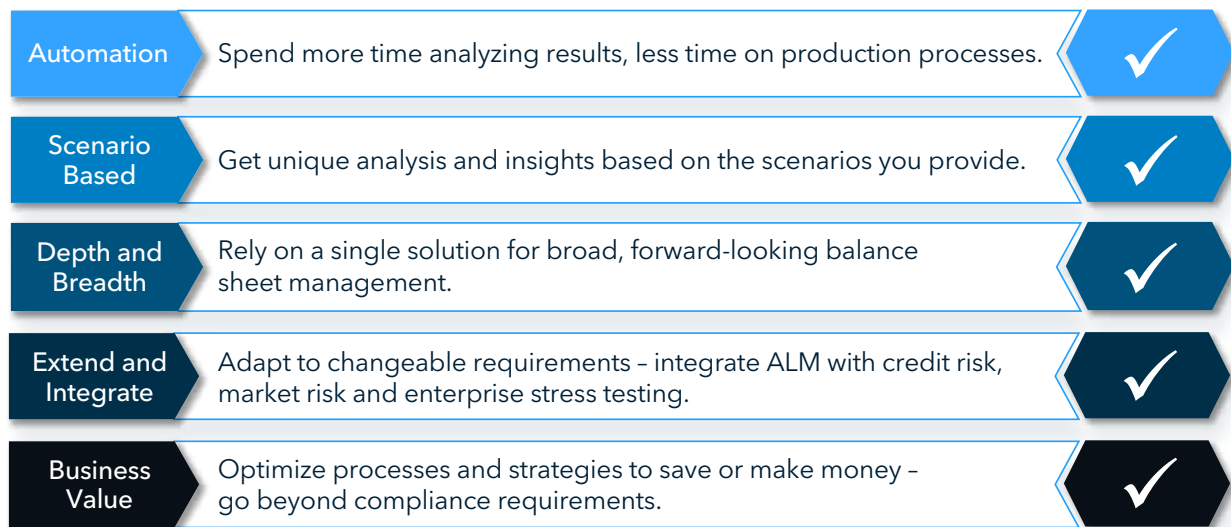
### Regulatory and internal reporting

Reduce the burden of regulatory compliance and streamline your internal reporting processes by using visual analytics and reporting tools from SAS for report generation and filing. With SAS, you can automate standard reports while maintaining the granular computational data so you can slice and dice as needed and drill down to unlock additional insights.

## Benefits

- **Gain immediate and long-term value.** Our solution includes a comprehensive suite of advanced ALM capabilities that work with a common risk framework to integrate ALM with credit risk, market risk and enterprise stress testing.
- **Improve consistency and thoroughness.** Practitioners are empowered by our solution's tight linkage of balance sheet management with strategic planning.
- **Boost efficiency and flexibility.** Our easily configurable cloud-native environment improves efficiency of the ALM process while giving you flexibility and scalability to adapt to unique business needs.
- **Make better-informed decisions.** SAS' industry-leading advanced analytics generate deep business insights that help optimize decisions. Sophisticated visual reporting tools make it easy to share results with regulators and internal stakeholders.

## Integrated balance sheet risk management



## The SAS® difference

As an industry-leading analytics solution provider, SAS has successfully worked with financial institutions of all sizes to address their most pressing analytical challenges. Our ALM and liquidity risk management solution provides:

- **Modern technology and best-in-class analytics platform.** SAS provides a broad range of integrated capabilities in data management, modeling, simulation and reporting supported by the highly scalable power of cloud-native computing technology.
- **Comprehensive ALM functionality.** Our solution offers a wide variety of ALM functions, including interest rate risk and foreign exchange risks, liquidity risk stress testing and optimization, risk-based funds transfer pricing analysis and regulatory reporting.
- **Flexible, out-of-the-box capabilities.** You can easily configure our industry-leading capabilities to address your unique business requirements while maintaining transparency and traceability.
- **A scalable, adaptive architecture.** SAS solutions scale to the size and complexity of your organization and its processes.
- **Constructive collaboration with SAS experts.** SAS has centers of excellence worldwide that are staffed by subject-matter experts and select business consulting and IT partners - so you get support at all stages of your analytics journey.

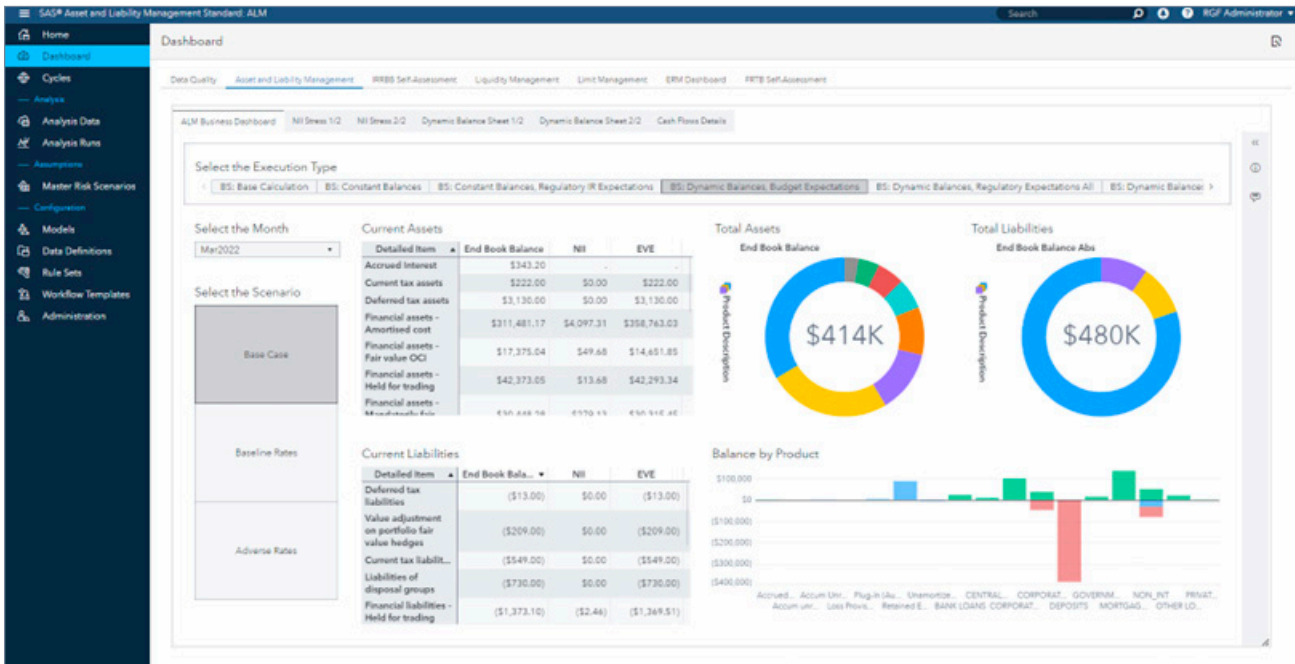


Figure 1. Scenario-based forward-looking balance sheet management.

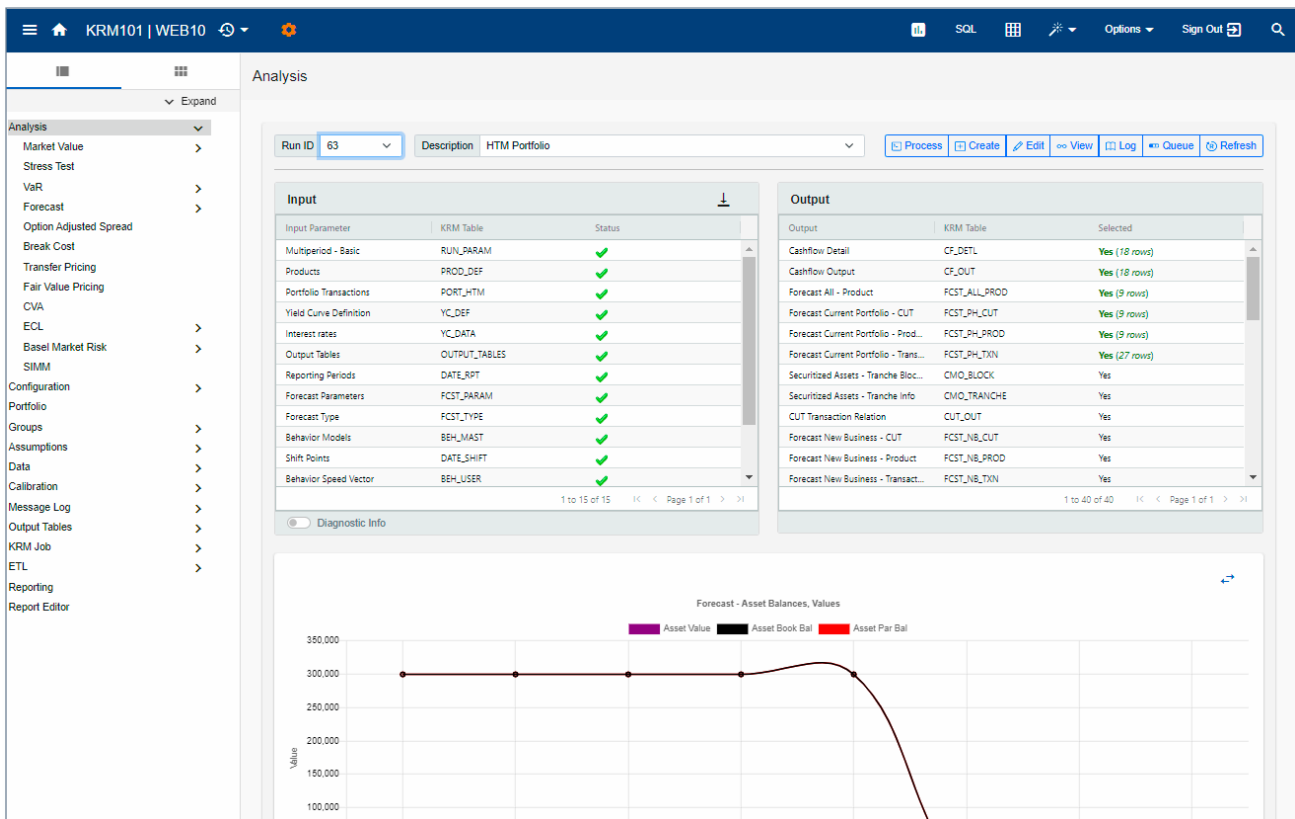


Figure 2. A flexible user interface allows you to uncover insights through rich data analysis.

For more information, please visit [SAS for asset and liability management](#).

