



## Ambit Asset Liability Management Case Study

### RISK AND COMPLIANCE

# Achieve More In Risk Management: Frankfurter Sparkasse

## Overview

How FIS' solution supported Frankfurter Sparkasse to enhance their interest rate and liquidity risk management

## Challenges

- The bank needed a state-of-the-art interest rate management system that complies with the bank's internal profit and loss (P&L) and presents value based management approaches.
- The bank sought a system that eased analyses, reporting and management around liquidity and interest rate risk in line with regulators' requirements.
- The bank was interested in installing a system that is open to support future regulatory and internal requirements.
- The bank needed an off-the-shelf solution from a vendor that understood its market organizational complexity Solution.
- Ambit Focus solution offers a strategic risk management framework that allows the bank to model all aspects relevant to balance sheet management in a consistent manner.
- Incorporates an enterprise-wide interest rate risk management platform.
- Offers a simulation engine for building balance sheet models and estimating parameters.

- The powerful cash flow engine calculates and analyzes the effects of inflows and outflows on a balance sheet, while the simulation engine offers strong scenario definition capabilities.
- Provides strong scenario definition capabilities to define an infinite number of stress scenarios that account for various risk factors.
- Performs statistical analysis on various business drivers by deploying stochastically or historically distributed risk factors.

## Results

- The bank's different departments work on the same data platform while pursuing their specific and institution wide strategic goals.
- The bank is able to manage its balance sheet in line with internal funding rates on the rest of its business.
- The bank can incorporate liquidity risk management into a holistic balance sheet management framework.
- The bank can facilitate risk profile evaluation and proactive strategies, optimizing the its risk/return tradeoff.
- The bank can view the balance sheet from both a risk and a performance management perspective.
- The bank can model and reconcile the complex interdependent relationships of the balance sheet.

Due to the system's extensive functionality, Frankfurter Sparkasse is not only able to manage the present value interest rate risk, but also to generate detailed information on the earnings prospects. To achieve this, the income from the interest rate exposure is projected forward in various interest rate scenarios to determine the treasury's contribution.

## Introduction

Along with measuring and managing interest rate risk, which has been a central focus for banks for some years, liquidity risk management is becoming increasingly important to global bank risk management. At Frankfurter Sparkasse, the task of measuring and managing both types of risk is split between the risk control department and the treasury department, as required by the supervisory body.

Here, the treasury department performs the role of a profit center, whose performance is measured in terms of interest rate book management and liquidity management. To calculate this properly, relevant internal and technical requirements must both be fulfilled. With FIS' Ambit Focus solution, Frankfurter Sparkasse has introduced a system that meets both the technical requirements and current specialist demands, and which can also be adapted to future needs. For Frankfurter Sparkasse, the system covers the areas shown below.

### The Ambit Focus desktop – the ALM Module



Frankfurter Sparkasse is Germany's fourth largest savings bank and the market leader in retail banking in the Rhine-Main area. As a modern, universal bank, it offers a complete range of financial products for both private and business customers.

## The treasury department's management approach

The bank's inherent market price risks and liquidity risks are managed by its treasury department. So, all transactions are transferred to the treasury at its funding rate, applying funds transfer pricing methods to fixed rate transactions. For variable rate products, which account for a large part of the balance sheet, particularly on the liabilities side, Frankfurter Sparkasse has opted for a moving averages model of modeling and assigning funding rates. The approach chosen for modeling is one that incorporates monthly volume fluctuations in the so-called money market buffer. These fluctuations cause margin volatility via the funding rate which, along with the reinvestment of maturing tranches, is also influenced by changes to the money market buffer. When more pronounced deviations from the defined mix ratio arise, the desired mix ratio is established by increasing or decreasing the deposit base. At the same time, it is important to monitor fluctuations in volumes of business, so as to attribute their effects to a particular business unit.

The interest rate management system aligns with the internal profit and loss (P&L) and present value based management approaches, while meeting the regulatory and risk monitoring requirements of the savings bank deposit protection scheme. Key guideline figures from the Basel III framework also determine the treasury department's scope of action. Frankfurter Sparkasse uses a semi active system to manage its interest rate book. In so doing, the bank can set benchmarks for specified maturity bands, based on limits for sensitivities, which can be steered with appropriate transactions. Within the limits, the treasury has some room for variation, which it may use in response to market conditions or expectations. Overall, Frankfurter Sparkasse is able to consistently manage its balance sheet in line with internal funding rates on the rest of its business.

## Using Ambit focus to improve interest rate and liquidity risk management

Frankfurter Sparkasse can view its whole balance sheet in FIS' Ambit Focus solution in two ways. First, it can see it in terms of the external interest rate, as used to close deals with external parties. Second, it can apply the internal interest rate that the treasury applies to the deals in its portfolio. For customer transactions, this is the funding rate set between the sales department and the treasury department.

Transactions carried out by the treasury, such as own account investments, are therefore entered in both views using the external interest rate. This proved to be an additional challenge when implementing Ambit Focus. Information is displayed in Ambit Focus at valuation date and as a projection of the balance sheet. The present value risk is calculated at the valuation date from the bank's overall/external interest rate perspective, based on an assumed interest rate curve change of 200 basis points. From the internal interest rate perspective, which is

essential for treasury management, the present value is managed using basis point value sensitivities. Ambit Focus also provides cash flows from customer transactions, which are entered into the bank's value-at-risk system.

Besides as the risk profile, the solution calculates historical treasury results: the treasury's interest income and present value performance. To show the progress of the present value performance, historical performance is automatically analyzed in various ways, according to interest rate change effect, ageing effect, new business effect and unforeseen events. Unforeseen events are those that directly affect the cash flow of a transaction but which could not be determined by its contractual features. Early repayment of a credit transaction is a typical example of this.

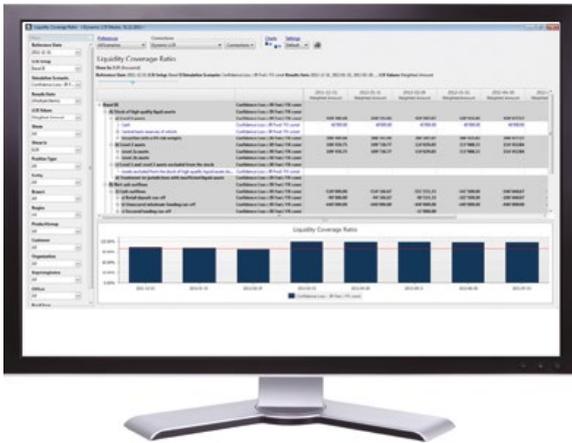
When evaluating the treasury's performance in a customer transaction, any present value losses incurred through early repayments and suchlike should have neither a positive nor negative effect on the treasury's profit. So, the losses are offset against cash without affecting the results.

Ambit Focus also provides forward looking analyses. Due to the system's extensive functionality, Frankfurter Sparkasse is not only able to manage the present value interest rate risk, but also to generate detailed information on the earnings prospects. To achieve this, the income from the interest rate exposure is projected forward in various interest rate scenarios to determine the treasury's contribution. Due to the bank's benchmark strategy capacity planning, product mix, maturity terms and other aspects of the sales and marketing plan are negligible for the treasury income projections, allowing treasury to optimize the projected contribution from its semi active strategy. The results of different treasury income scenarios are integrated into the profit forecasts for Frankfurter Sparkasse as a whole.

Along with the interest rate perspective, Frankfurter Sparkasse monitors liquidity risk, using Ambit Focus to calculate settlement dates and interest payments. Net cash flows are calculated throughout the year to assess liquidity, on a daily basis for the first month and aggregated monthly thereafter. These are then compared with the liquidity reserve in place at the time. A limit is always applied to the margin between the liquidity balance less the net cash flows. Structural liquidity is also calculated, with outflows in set time bands compared with inflows in order to identify any refinancing requirements. There are also limits in place for this assessment. Additionally, capital reserve requirements – essentially the liquidity coverage ratio (LCR) – are now incorporated into Ambit Focus. This functionality has been available since Version 2012.2; enhancements and adaptations were made to Version 2013.2 in response to recent changes by the supervisory body.

The aim is to use Ambit Focus to simulate possible developments in treasury and customer transactions and to analyze the effects on the LCR. The first step in this process is to simulate the regulatory ratio in Ambit Focus.

## Overall stress testing framework process flow



Ambit Focus also puts Frankfurter Sparkasse in a strong position from a technological point of view. Using a standard commercially available infrastructure, comprising Microsoft SQL Server and Windows Server, the bank can adjust models and analyses itself, or create new analyses using the data cube, without having to rely on FIS or other third parties. From an IT perspective, the solution's installation, carried out in partnership with FIS, proved to be pleasantly straightforward. A high level of professional and technical expertise paved the way for a constructive and target oriented approach to problem solving and a more cost-effective service than offered by competitors. The bank's day-to-day business operations have continued to run smoothly following the successful implementation of Ambit Focus. Manual intervention by IT staff is not required thanks to virtually seamless automation, both within the application and externally. With carefully set parameters, the solution's workload can be distributed freely, depending on the availability of computation cores in the bank's computer center. Computing capacity no longer needs to be designed around peaks in demand, as it can be allocated during periods of less activity in the computer center.

## Conclusion

The introduction of FIS' Ambit Focus means that Frankfurter Sparkasse can display its existing reporting system in its entirety while gaining greater flexibility, especially in terms of analytics. At the same time, the new solution meets all IT requirements for authorization, stability and standby support. Ultimately, it allows the bank to rapidly address issues that would have been impossible or very laborious to manage with its previous system. As a combined result, Ambit Focus not only meets the current needs of Frankfurter Sparkasse, but will also future-proof it against many requirements to come.