

RESEARCH

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IFRS 9 Analytical and Reporting Solutions for Structured Finance

With the release of IFRS 9 Financial Instruments, the International Accounting Standards Board set out new requirements for the accounting of financial assets, financial liabilities, and some other contracts to buy or sell non-financial assets. For structured finance ("SF") investors the provisions that affect the accounting for financial assets are most pertinent. In this paper, we set out the specific challenges that investors in SF face and guidelines for effective solutions to help address these challenges.

Background to IFRS 9 and Unique Challenges for the Structured Finance Market

International Financial Reporting Standards 9 (IFRS 9) replaces the IAS 39 Standard of 'Financial Instruments: Recognition and Measurement', which moves from incurred loss measurement to a forward-looking expected credit loss (ECL) calculation for provisioning. IFRS 9 for SF securities would generally need to address multiple 'components' including performance data, waterfall models, and asset credit modeling considerations combined with macro-economic scenario analyses to support both IFRS 9 classification and the forward-looking impairment model. In essence, IFRS 9 links the economics of risk management with its respective accounting treatment, while the approach considers past, present, and future observations and forecasts. For SF securities, combining these capabilities into one platform would provide many benefits but could be especially challenging given the complexity of the component parts, sophisticated analytics, and different technology platforms that might need to be integrated.

IFRS 9 requires institutional alignment across departments to measure financial assets according to each department's business model. Furthermore, in the spirit of IFRS 9 guidelines, there is a growing need for generating and analyzing contractual cash flows for various SF security types with due consideration for the current and forecasted economic environments. Within IFRS 9, there are similarities to regulatory stress testing and scenario analysis for capital planning. Notable and key is IFRS 9 impairment calculations rely on a forward-looking assessment. But incurrence information is also relevant in making forward-looking estimates and in defining the appropriate accounting treatment under IFRS 9. Processes and infrastructure to accommodate complex calculations and to process and analyze SF deal and tranche level data will generally need to be developed and implemented to support the new approach. Capital requirements could be impacted because of the change in the rules. Thus, managing potential volatility of provisioning ahead of formal implementation in 2018 could be a major concern for some financial institutions. Volatility is further exacerbated for SF securities given unique structures – especially for thinner and more subordinated

tranches. Therefore, many institutions are tackling this issue early by reclassifying SF books in accordance with IFRS 9 and putting in place the infrastructure and audit trails to commence parallel runs in 2017.

Specific Challenges Presented by the Nuances of Structured Finance Securities

IDIOSYNCRATIC RISK CHARACTERISTICS OF STRUCTURED FINANCE SECURITIES

Due to idiosyncratic risk characteristics, SF securities are typically treated separately from other fixed income financial products. These securities generally present a more complex and wider dispersion of risk that needs to be forecasted under prescribed macro-economic scenarios. The loss attribution characteristics of SF securities often reflect "cliff effects" more dramatically than traditional fixed income instruments such as corporates, financials, and sovereigns. In general, loss and return distributions of SF securities are unique and often not easily characterized by distributions used for more traditional fixed income instruments.

These "cliff effects" could result from many different causes (for example, credit losses, barbellings of portfolio, thin mezzanine/subordinate tranches, triggers that trip liquidation/control rights, etc. that might need to be carefully considered in analyzing SF securities).

Another example of unique challenges for SF securities versus plain vanilla fixed income instruments surrounds the need to assess the possibility of default for purposes of determining a "significant" change in credit risk. IFRS 9 paragraph B5.5.13 indicates that "changes in the risk of a default occurring over the next 12 months might be a reasonable approximation of the changes in lifetime risk of a default occurring." For SF securities, the upcoming 12-month default rate is often not a good proxy of lifetime credit risk given, for instance, the nature and longevity of residential mortgages. That said, the 12-month rate might serve as a sufficient proxy for shorter dated consumer debt, for example.

The risk of default for certain types of SF securities is often back-ended and concentrated around optional call event timing or around maturity, notwithstanding often a very low impending 12-month probability of default. Furthermore, many SF securities do not even recognize losses until their maturities. As such, the lifetime default rate is often generally a more appropriate proxy of credit risk than the 12-month estimated default rate for SF securities. Further to this convention, the Basel Committee has provided guidance on credit risk and accounting for credit losses.

Typical Investor Benefits of IFRS 9

As mentioned, the adoption of IFRS 9 for SF securities presents shareholders, investors, and readers of financial statements with an accounting approach further aligned with forward-looking risk management methodologies. This rule has several key business benefits.

Investors in SF can certainly plan to adopt the IFRS 9 framework into business decision making. The reporting and audit trail of IFRS 9 generates both credit and macroeconomic-based key impairment concentration factors and drivers, which help, for instance, in ascertaining portfolio-centric vulnerabilities and sensitivities to specific SF risk factors. Investors could see, for example, the effects on the SF portfolio of a rise in interest rates, unemployment or other relevant changes in the macroeconomic environment.

By way of parallel reporting ahead of 2018, early adopters of IFRS 9 can forecast potential impact on financial statements by way of classification and commence the process of planning for the recognition of new provisioning levels and make critical business decisions ahead of formal adoption. This can include driving investment, banking, or trading book limits and improving asset allocation of SF securities (including

sub-asset class allocation) vis a vis all financial instruments including corporates, financials, and sovereigns. Early adopters of IFRS 9 can benefit from putting in place upfront controls and processes to assist traders and portfolio managers of likely 'IFRS 9' impact of bid (or offer) levels of adding the position or on book optimization. These new processes would need to, by definition, be efficient so that there are no material delays to the normal course of business.

The benefits of combining Cash Flow Engines, Waterfall Scripts and Loan Level Data to detect and evaluate nuances of SF positions

Given the number of different types of receivables that are securitized, including inter alia consumer, corporate, residential and commercial risk, investors can achieve a standardized approach to SF securities for IFRS 9 by utilizing an integrated tool inclusive of cash flow engines incorporating both the terms and conditions of the deal, collateral performance and loan level data for all global securitizations in the deal models. This would provide investors with the opportunity to apply their methodologies in a consistent manner.

EXAMPLE OF A WATERFALL SCRIPT

The screenshot displays the Moody's Analytics Structured Finance Portal interface. At the top, there are filters for 'ASSET CLASS' (RMBS) and 'COUNTRY' (All). Below this is a table of deals with columns for Run, Deal, Class, Cusip/Isin, Vintage, Ratings, DM (bps), Yield (%), Prepay Rate, Prepay Type, Default Rate, Default Type, Loss Rate, Loss Type, Rec Lag (months), and Allocation (months). The table lists several deals, including 'Principal Residential Investment Mortgages 1 A S.A. - Series 2012', 'STICHTING ORANGE LION VI RMBS', 'STICHTING ORANGE LION V RMBS', 'DUTCH RESIDENTIAL MORTGAGE PORTFOLIO B.V.', 'CASTILHO MORTGAGES NO. 1', 'MADRID RMBS II FTA B', and 'ARKLE MASTER ISSUER PLC'.

Two pop-up windows are overlaid on the table:

- Waterfall script:** This window shows a script for deal variables. A red circle highlights the following lines:


```

      DECLARE _CUTOFF-BAL _CUTOFF-BAL1 _CUTOFF-BAL2 _TARGET-OC-PCT /
      LET _CUTOFF-BAL = 1050781466 _CUTOFF DATE COLLATERAL BALANCE
      LET _CUTOFF-BAL1 = 260270264 _CUTOFF DATE COLLATERAL BALANCE
      LET _CUTOFF-BAL2 = 800511190 _CUTOFF DATE COLLATERAL BALANCE
      _TARGET-OC-PCT = 0.0488 INITIAL TARGET OC PERCENTAGE
      
```
- Loan Level Data:** This window shows a detailed table of loan-level data, including columns for loan ID, vintage, rating, and various performance metrics.

Source: Moody's Analytics Structured Finance Portal

AN INTEGRATED APPROACH

The IFRS 9 accounting reporting requirements for SF securities – including the Solely for Payments of Principal and Interest test (SPPI test) for Classification purposes, Staging requirements and Impairment calculations – would generally need to be performed on an ongoing basis. There are a number of components that would ensure compliance for SF securities, including access to deal model libraries capturing the contractual terms and conditions of the notes, ongoing and normalized investor performance data, asset behavioral credit models and IFRS 9 macro-economic scenarios within an integrated reporting and analysis platform.

To complement and reinforce the integrated approach, robust and defensible methodologies need to be developed with necessary documentation and white papers. Failure to build and maintain a scalable and efficient IFRS 9 structured finance platform could expose SF investors to significant costs and potential errors

in their IFRS 9 compliance program. This can affect provisioning estimates and capital management and ultimately impact shareholder returns. Below is an example of the components of an integrated approach.

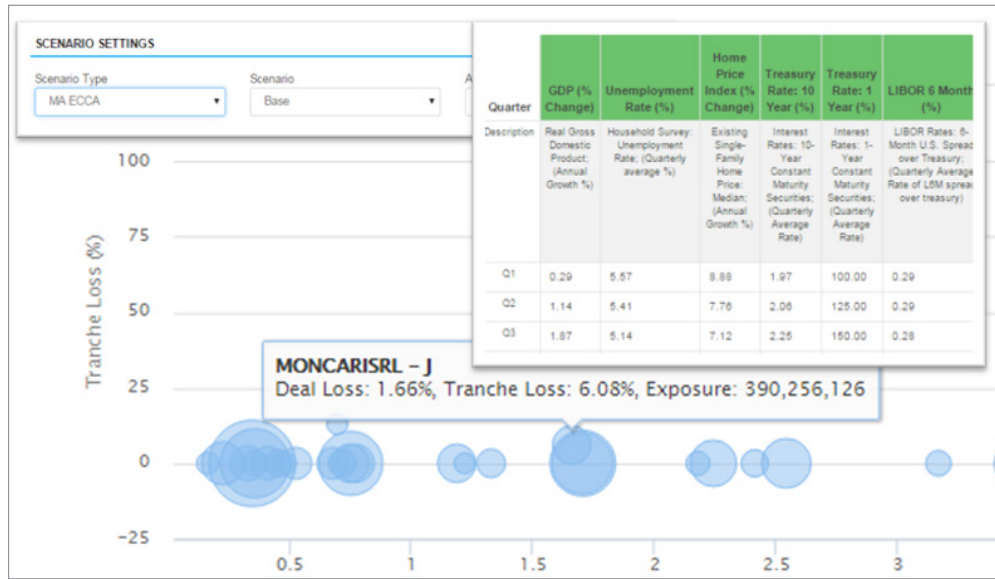


Bringing together all of the 'components' in a unified platform:

Financial institutions require tools that meet statutory reporting requirements and provide functionality for parallel reporting and quantitative impact study submissions. Ideally, a single solution would provide regulatory metrics (SSFA, QIS, SFA, ICAAP), impairment reporting (OTTI, IFRS9) and stress testing (CCAR/DFAST, PRA, EBA) for SF securities all in one place.

This ensures that common data, systems and processes are used for both accounting and capital adequacy purposes. Such a platform would assist SF investors in consolidating their SF positions from both a financial and regulatory reporting perspective and in complying with Basel Committee on Banking Supervision (BCBS) current and future requirements and meeting IFRS 9 guidelines for impairment staging.

EXAMPLE OF CASH FLOWS WITH CUSTOMIZED ECONOMIC SCENARIOS



Source: Moody's Analytics Regulatory Module

ASSET BASED CREDIT MODELING

To drive the SPPI test and impairment calculations as required by IFRS 9 guidance, institutions would generally need to develop credit forecasts (vectors) based on historical aggregate or loan level data and be able to condition these upon IFRS 9 compliant economic forecasts. Detailed methodology and ongoing maintenance of these asset-based credit models along with the associated high-quality performance data that fuels those models –at aggregate and/or loan level – will generally need to be maintained over the life of the portfolio of SF securities to ensure a consistent approach. As ongoing performance data becomes available, SF investor determinations of “low” credit risk or “credit impaired” would typically need to be reassessed in a consistent manner. Furthermore, the definitions of “low” credit risk and “credit impaired” might differ based on the characteristics of the underlying securitized assets and/or deal structure.

Asset Behavioral Credit Models

In order to conduct classification and impairment calculations, structured finance investors could benefit from an integrated solution inclusive of loan-level information across all SF asset classes, complete with documentation to assist with internal model validation. Any solution could include robust behavioral models for determining future underlying asset performance under forward-looking macroeconomic scenarios.

FORWARD LOOKING MACRO-ENVIRONMENT

SF investors will generally need to define macro-economic scenarios that are consistent with IFRS 9 guidelines, whether they are vended economic scenarios or custom scenarios.

New provisions require financial institutions to evaluate the impact of forward looking economic changes on their expected credit losses under a range of unbiased possible outcomes, considering both the possibilities that credit losses occur or not. Many firms have difficulty in developing a compliant set of credible economic scenarios to measure expected credit losses that reflect an unbiased, probability-weighted outcome.

Economic Forecasting

To help satisfy IFRS 9 requirements, structured finance investors are advised to use a solution offering agnostic, forward looking scenarios and possibly custom scenarios to incorporate into expected credit loss calculations and resultant impairment measurement and classification processes. As mentioned earlier, institutions need to develop credit forecasts to condition these upon IFRS 9 compliant economic forecasts. Among the hundreds of economic variables in existence, the most important used to develop SF asset models generally include unemployment, retail sales, debt-service burden, bankruptcy rates, interest rate and bond yield curves, detailed housing and labor market performance metrics, demographic series and many client-specific indexes.

INTEGRATION OF CREDIT MODELS WITH MACRO MODELS AND WATERFALL MODELS

Asset credit models are typically based on historical performance and thereafter conditioned with economic forecasts. Typically the output of the asset credit models is run through an SF security deal waterfall to generate respective cash flows following the contractual terms and conditions of the notes, including the priority of payments. To construct a complete IFRS 9 solution for classification and impairment of SF assets on a robust and repeatable basis, multiple asset credit models, comprehensive SF deal model libraries, historical SF deal performance data, and IFRS 9 economic scenario forecasts could be integrated into a single calculation (and, ideally, reporting) engine. Such an integrated solution would greatly facilitate some of the major IFRS 9 implementation challenges for SF investors.

Generating credit assumptions conditioned with Macro Assumptions that follow IFRS 9 Guidance and feed through SF Deal Waterfalls

SF credit modeling results in the generation of proprietary credit forecasts (vectors) based off historical aggregate / loan level performance data that are conditioned upon macroeconomic forecasts. With an integrated solution using the macroeconomic forecasts and historical and current deal-specific performance information, the tool would generate either (i) loan-level default, prepayment, and loss assumptions, or (ii) pool-level CDR, CPR, and LGD (or equivalent) curves.

SF waterfall models would then ingest these conditioned credit assumptions. These models would then generate forward-looking collateral and tranche cashflow results that need to be aggregated using the appropriate scenario weightings to calculate ECLs and impairments for reporting purposes.

IFRS 9 – CENTRIC METHODOLOGIES AND INTERPRETATION OF RESULTS

Financial institutions need to be mindful of the upfront challenges in developing, approving, and validating the IFRS 9 criteria that relates to appropriate book classification, impairment metrics, and staging markers. Once financial institutions have implemented the approved methodologies there must be appropriate controls in place to ensure compliance with the criteria. Institutions need to ensure that there are appropriate audit trails in place for calculations, assessments of outliers and reconciling period-to-period changes in criteria or impairment.

Advisory Services for Methodologies, Reconciliations and Interpretations

To address the IFRS 9 model validation requirements, it is advisable for investors to choose a robust classification methodology based on their institution's intended business model for each position. The determination of whether each asset's contractual terms of collateral payments are Solely for Payments of Principal and Interest are for the benefit of the outstanding tranche ("SPPI test"). It is also advisable to place ongoing controls and tests over the life of the books to assess materiality of any 'significant changes', and integrate the IFRS macro-economic scenarios that the institution's auditor agrees upon.

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