Interest Rate Risk in the Banking Book:
2017 Deloitte Survey
Taking a closer look to the BCBS Standards
Introduction

In April 2016, the Basel Committee on Banking Supervision (BCBS) issued Final Standards for IRRBB that replace the 2004 Principles for the management and supervision of interest rate risk. The new standards set out the Committee’s expectations on the management of IRRBB in terms of identification, measurement, monitoring, control and supervision. The updated IRRBB Principles reflect changes in market and supervisory practices due to the current exceptionally low interest rates and provide methods and models to be used by banks in a wider and enhanced risk management framework.

In light of the significant changes introduced by the Basel Committee standards on IRRBB, Deloitte EMEA invited European and South African banks to participate in an online survey in order to check the readiness of firms to manage the new context of interest rates and evolve their IRRBB practice, moving towards an enhanced framework of interest rates risk governance, models and systems.

The survey, which was undertaken between September and December 2016 across 9 European countries and in South Africa, involved 37 leading banking groups of different sizes (with balance sheets ranging from €30bn to €500bn) and types (retail, cooperative, private, investment, commercial and universal banks). The survey focused on the assessment of the banks’ current state practices against the new IRRBB framework provided by the BCBS with six detailed sections and more than 80 specific questions on ALM and IRRBB practices.

Interest Rate Risk in the Banking Book (IRRBB) is the risk to earnings or value (and in turn to capital) arising from movements of interest rates that affect a bank’s banking book positions.
Key updates to IRR principles

The key enhancements to the 2004 Principles include:

**Enhanced disclosure requirements.** including the impact of interest rate shocks on the change in economic value of equity (ΔEVE) and net interest income (ΔNII) based on prescribed scenarios, in order to promote greater consistency, transparency and comparability in the measurement and management of IRRBB.

**More extensive guidance on expectations for a bank’s IRRBB management framework** such as: development of interest rate shock scenarios, consideration of behavioural and modelling assumptions, credit spread risk measurement, IRRBB Risk Appetite setting for both economic value and earnings, IRRBB inclusion in the ICAAP by taking account of changes in the economic value of equity and in net interest income.

**Definition of a standardised framework** to enhance risk capture and promote the use of common concepts: supervisors can require banks to implement the standardised approach as a fall-back (e.g. if they find that a bank does not adequately capture IRRBB). Alternatively, banks can adopt it voluntarily.

**Updated supervisory process** in terms of factors which supervisors should consider when assessing a bank’s level and management of IRRBB exposures.

**Stricter threshold for identifying outlier banks** which has been reduced from 20% of a bank’s total capital to 15% of a bank’s Tier 1 capital. Supervisors may implement additional tests and must publish criteria for identifying outlier banks.

Tighter standards, market changes and increased regulatory scrutiny will require many banks to improve their IRRBB measurement tools and to enhance the risk management and governance arrangements. The main challenges are expected to come with respect to the risk management framework, the governance model and the level of skills/expertise.

**Improvement required by the Final Standards**

**Figure 1. Implications for banks regarding their IRRBB Improvement**

- Develop new/enhanced quantitative IRRBB tools including expanded NII and EVE projections.
- Enhance customer behaviour analysis.
- Align IRRBB framework with key balance sheet management frameworks such as capital and liquidity management.
- Implement robust model risk framework for IRRBB models.
- Develop reporting capabilities and independent validation function.
- Improve governance around IRRBB processes, including Board-level oversight, clear designation of responsibilities and definition of the “lines of defence”.

The Final Standards do not specify how sophisticated the IRRBB measurement quantitative techniques should be. However, application of the principles will require banks to demonstrate that the measurement approaches they choose are sufficiently sophisticated to capture and measure all material sources of IRRBB and regulators will expect banks to adopt an approach that is proportionate to the nature, scale and complexity of their activities and risks.
The IRRBB survey: framework and key insights

The IRRBB survey framework

The survey has been split into the following key areas:

- **Models**: framework of model risk management and typologies of behavioural models
- **IRRBB Indicators**: key measures and indicators (EVE, NII) and related approaches in terms of stress scenarios and dynamic analysis
- **Limit Framework and Internal Capital**: framework of operational limits on IRRBB and related approach for IRRBB internal capital quantification
- **Governance**: governance of IRRBB practices, key stakeholders (ALCO, Board) and related roles and responsibilities
- **Reporting**: internal reporting practice and new expected Pillar 3 disclosure requirements
- **IRRBB systems and processes**: main functionalities and expected evolution on IRRBB systems and processes.

Key Insights and results of the survey

1. the introduction of a dynamic perspective in terms of integration with planning & forecasting departments (57% of the banks),
2. the institution of a more sophisticated stress testing framework with respect to the implementation and management of enhanced shock scenarios and more flexible system solutions (51% of the banks),
3. the use of the behavioural models both on methodological and modelling sides (49% of the banks).

Most relevant impacts on IRRBB framework

Figure 2 – Key questions on expected impacts

Which regulatory recommendations will have the most relevant impacts on the IRRBB methodological framework of your bank?

*(Multiple answers allowed in the limit of 3)*

- **Introduction of EVE measures**: 24%
- **Introduction of NII measures**: 30%
- **Splitting into risk types and currencies**: 24%
- **Introduction of a dynamic perspective**: 57%
- **Introduction of a more sophisticated stress framework**: 51%
- **Recommendations regarding the use of behavioural models**: 49%
- **Other**: 11%
The survey results highlight very interesting and relevant insights related to different topics:

**Dynamic Analysis & Stress Scenarios for Models and Methods are among the top priorities**
Dynamic balance sheet projections and stress test scenarios required by the new IRRBB framework are a very relevant topic to be addressed and enhanced by banks within their methodological framework. 51% of the participating banks stated that the introduction of a dynamic approach on NII and EVE sensitivity analysis will have a significant impact on their structure, while only 5% of banks said that they will not adopt a dynamic approach. Banks confirmed that IRRBB management with a dynamic perspective will require a greater cooperation among Risk Management, ALM and Planning & Forecasting departments on both the definition of a coherent operating model and the implementation of an IT integrated solution.

**A move towards heightened scrutiny of behavioural models and of IRRBB indicators**
Behavioural models (e.g. non-maturing deposits, prepayment models, renegotiations) and their integration with IRRBB indicators and with the related framework are expected to significantly evolve both on the methodological and modelling side and on the related internal validation approach. For 60% of banks only, the risk department is already actively involved in all the validation tasks related to the IRRBB framework. Moreover, some enhancements are expected in the risk management validation process with particular focus on behavioural models (67.1%) and the definition and calibration of IRRBB indicators used in the monitoring process (61.3%).

**A significant number of banks will Implement the standardized framework**
Even though it is not strictly required by the BCBS standards on IRRBB, a significant part of the participating banks (38%) will implement the standardized approach proposed by the Regulator. For a large part of them, the standardized framework will be adopted with a view of benchmarking their internal models for IRRBB. According to a large majority of banks planning to implement the standardized framework for that purpose (71%), the standardized approach is seen as an opportunity to better explain the outcomes of their internal models to their supervisors and also to anticipate potential future changes of the IRRBB requirements.

**Increasing needs for more integration & synergies on systems**
The majority of participating banks highlighted the importance of integrating their IRRBB systems into a unique platform able to manage and use input data both from other risk areas (e.g. combined stressed scenarios) and planning & control department (e.g. forecasts and projections for dynamic simulation).

**Get ready for much more reporting**
The Pillar 3 disclosure requirements provided in the new BCBS standards on IRRBB will require banks to enhance their reporting framework with more granular views. Under the current Pillar 3 framework, a large majority of the participating banks (72%) already provide quantitative and qualitative disclosures on their IRRBB on annual, semi-annual or quarterly basis but, with the new BCBS standards, the amount of quantitative and qualitative disclosures is expected to significantly increase.
Overall positioning from IRRBB survey

Models

- Behavioural models are a key area for future evolutions especially for the related validation framework
- Banks also expect to enhance the integration and coherence of IRRBB models shared with other risks

IRRBB Indicators

- Granularity of indicators and measures (IRR types, subgroup levels, currencies) is a key issue for banks.
- Some evolutions are also expected on methodology (new stress test scenarios and dynamic approach).

Limit Framework & Internal Capital

- The limits monitoring framework is expected to be moderately impacted and may be refined.
- Some evolutions are instead expected on the internal capital framework in order to comply with the new IRRBB principles.

Governance

- The IRRBB governance framework is consistent with the new IRRBB principles in most the cases (70%).
- Only minor areas of improvements are expected with respect to business steer through a more active ALCO.

Reporting

- Pillar 3 disclosure requirements will require banks to enhance their reporting framework, in particular for quantitative disclosures.

IRRBB systems and processes

- Two key areas of improvements are foreseen with respect to systems
  1. Integration with planning for dynamic B/S projection
  2. Flexibility and granularity of IRR data and measures
Introduction

An IRRBB framework is commonly articulated around 4 types of indicators: gap, Economic Value of Equity (EVE) sensitivity, Net Interest Income (NII) sensitivity and Stress tests.

Gap are a traditional measure of risk in ALM representing the outstanding risky position per time bucket. As expected, the monitoring of fixed rate gap is done by most of the banks (92%). We notice that the other types of gaps (floating & basis) are now monitored by more than a half of the institutions consistently with the BCBS recommendations to monitor carefully the basis risk.

If stress tests are commonly included in the ALM framework, their usage is limited to the calculation of internal capital (ICAAP) for 39% of the banks. For 80% of the institutions, less than six scenarios are used.

The objective of the following sections is to make a focus on two specific topics which we consider as the most challenging for banks when implementing the new IRRBB framework

1. The inclusion of a dynamic approach, especially for net interest margin projections and sensitivity analysis
2. The objectives of EVE & Net Interest Margin indicators and how both approaches are complementary to build an efficient and comprehensive IRRBB framework

Main challenges in implementing a dynamic approach

Handling with a dynamic projection of NII is a source of concern for banks

For 57% of the participants to the Deloitte IRRBB 2016 survey, the introduction of a dynamic perspective is the IRRBB measure which will impact them the most. If 75% of the participants have already adopted a dynamic approach, they do it only for NII indicators.

For which measures are dynamic approaches used?

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A necessary convergence with management information processes and business planning forecasts

First of all, the dynamic projection of NII requires forecasting new production volumes (at least to replace maturing positions and maintain a constant balance sheet size) which is related to the commercial strategy of the bank, the business cycle and future interest rate levels.

Determining the new production or business assumptions raises up several difficulties. From an organizational point of view, it requires a close coordination between Management Information & ALM departments. Most of the financial institutions acknowledge that the new production forecasts should be determined by the Management Information department based on an approach combined volumes & commercial margin objectives. In terms of organization, one of the current trend consists in merging management information & ALM teams on Net Interest Margin aspects (i.e. other components of the P&L such as fees or operating expenses are still managed by separate teams).
Chapter 1 - IRRBB Indicators

Which interest rates?

Future production needs to be priced using future interest rates. Estimating these future rates is an important task that affects both NII forecasts and hedging strategies. A pricing based on economic forecasts allows ALM managers to monitor the NII relatively to forward rate curves. Forward rates can be bought or sold in the derivatives market in order to secure the margin or enhance the profitability. In retail and commercial banking, the ALM function focuses on the hedging of the margin and hence locking the interest rates at their forward levels. From this perspective, pricing new production based on the forward curve makes more sense.

How many scenarios?

Until recently, institutions often use one scenario and calculate their dynamic indicators on the basis of this only one scenario generally a parallel shift of +/- 200 bp as recommended by the Basel Committee. The current best practices tend to set up dynamic approaches combining multiple interest rate scenarios.

- From a regulatory perspective, the new IRRBB framework has defined at least six scenarios representing the possible changes in the Interest Rate Curve (parallel shift, steepening, flattening, curvature, ...).
- As we don’t know how the rates will move, the use of multiple scenarios allows to mitigate the risk and secure most efficiently the Net Interest Rate Margin or the calibration of the hedging strategies. For example, a bank with an excess of fixed rate assets would be currently keen to transform this fixed rate position into variable rate if it anticipates a rise in Interest Rate. On the opposite, it will not hedge at all if it anticipates a decrease in the Interest Rate. Mixing both scenarios will allow to arrive with a more balanced hedging strategies, securing the net interest margin whatever the evolution of interest rates is.

Correlation between IR scenarios and new production volumes

For the most advanced institutions, the new production forecasts are adjusted function of the IR scenario. For example, it can be considered that sight deposits amount will decrease (or at least that the new production will not be high) in an increasing IR scenario as it is considered that people will prefer to invest their money in more remunerative supports. This multiple scenario analysis can also be used when calibrating the behavioural models such as the pricing of prepayment options or the projections of cash flows for non-maturity deposits.

How are the business growth forecast assumptions calibrated?

- No business growth modelling: constant balance sheet assumptions
- Business growth modelling are defined by the ALM / Treasury Team based on expert judgment or simplified approaches
- Business growth forecasts determined by Management Information Department are used
- Business growth forecasts determined by Management Information Department are used and challenged / modified by the ALM or Treasury team in order to take into account the expected changes in Interest Rates or Balance Sheet Structure
Chapter 1 - IRRBB Indicators

Articulation between EVE and NII measures

Earnings approach (NII)

In a retail or commercial banking activities, Net Interest Margin generally represent the main part of the total Earnings. Then, stability of the NIM and its sensitivity to changes in Interest Rates is scrutinized by the Senior Management but also financial analysts or investors. It is also an important indicator in order to define the hedging strategy. The hedge objective is then to protect the interest margin from adverse interest rate movements.

Such indicators are generally computed on a relative short term horizon (one or two years). Indeed, it is difficult to predict from a reliable manner Interest Rate conditions and new production forecasts after two years and then not prudent to define a hedging strategy to secure the NIM on a long term horizon.

EVE measures

Value creation for shareholders must also be considered in the long term. Economic value is one of the common ways used to measure the value of an entity. Unlike NII (accruals based indicator), EVE focuses on all cash flows generated by the holdings and duties (interests and principals). The choice of considering commercial margins define whether the discount curve includes a commercial margin or not.

\[ \text{EVE} = \text{PV(assets cash flows)} - \text{PV(liabilities cash flows)} \]

EVE sensitivity analysis apply usually for answering regulatory purposes (ICAAP and outlier test). BCBS introduces EVE Sensitivity in the IRRBB framework and suggests the use of this risk measure to monitor banking book risks. Such EVE sensitivity are also often included in the IRRBB limit framework.

Figure 6 – NII indicators

Figure 7 – EVE indicators

Conclusion

From a regulatory standpoint, only EVE measures (sensitivity analysis to a 200 bp points) were considered until the new IRRBB framework which introduces NII measures and at the end, capital requirements calculation based on a mixed NIM/EVE approach.

We consider this approach is relevant as both views are complementary. The NIM approach is focused on the P&L with the objective to secure interest margin on a short term horizon whereas EVE approach is Fair Value based considering all the cash flows whatever their maturity with the objective of maximizing or protecting the B/S Fair Value.

As also shown by Pillar 3 disclosure by main European banking groups (see table XX at page ), we observe the IRRBB current practices differ from banks and countries. However, most of them disclose EVE & NII sensitivity analyses. Then the challenge in implementing the new IRRBB framework is not on the calculation of indicators (EVE & NII) but rather on the set up of multi scenario analysis (very rough approach at this stage based only on one parallel shift scenario).
Behavioural Modelling

Main observations and conclusions

Behavioural modelling emerges as a key challenge for many banks, with roughly half the participants indicating that their behavioural models need to be evolved further, both from a methodological and documentation perspective, in order to comply with the BCBS Standards.

A wide range of modelling practices is evident from the Survey results. This highlights the need for banks to ensure they have fully documented their methodologies and undertaken sufficient work to justify why the choices they have made are appropriate and to show the potential limitations inherent in their choices, particularly under stressed conditions.

Some of the key challenges include:

- Absence of well-established processes and resources to perform sufficient analysis and document and validate the models.
- Integration of the models into the broader risk management and limits framework together with associated system integration and governance issues.
- Alignment of IRRBB behavioural models and assumptions to other risk types, in particular liquidity risk.
- The need for significant customer and market data in order to generate meaningful results and to validate the models. Firms generally will need to invest in the quality and granularity of data and introduce reconciliation processes to get the most reliable results from IRRBB behavioural models.
- The need to recalibrate the parameters as interest rates start to rise, as many of these models have been calibrated in a persistent low interest rate environment.
- Enhancement of model governance around IRRBB models, including sufficient resources to undertake internal validation function and perform Internal Audit review.
Chapter 2 - Models

Behavioural modelling approaches and methodologies

The first very interesting finding is that, whilst some banks (25% of respondents) have a consistent set of behavioural models for IRRBB and liquidity, the majority (75%) do not.

The alignment of IRRBB and liquidity models is not a requirement under the Standards and there may be valid reasons for maintaining different models (including different management objectives and time horizons). However, as liquidity and IRRBB are often managed by the same or related functions (e.g. Treasury/ALM) and results are usually reported to the same decision-making or oversight bodies (ALCO, Risk Committee), the development of common modelling and data frameworks has a lot of merit.

Additionally, such an approach may lead to efficiencies as reconciliation processes, data cleaning and adjustments and validation of certain model components will need to be performed only once, thereby avoiding duplication of effort.

In addition, two key results from the Survey are worthy of particular note.

Not surprisingly, the Survey results indicate a wide range of practices and approaches towards behavioural modelling. For example, the assumed maturity of sight deposits ranges from less than 5 years (50% of respondents) to more than 15 years (6.3% of respondents). Similar divergences exist across many aspects of behavioural modelling.

This finding is not inconsistent with the BCBS Standards, which are essentially non-prescriptive and are designed to apply to a wide range of institutions across different jurisdictions. However, the range of observed practices (and the divergent results these are likely to produce) emphasize the need for banks to document thoroughly the methodologies underpinning the behavioural models and justify why they consider these to be appropriate relative to other options. This includes the need to understand and document the potential implications and limitations of the choices made, particularly under stressed market conditions where the validity of the chosen behavioural assumptions may be compromised.

The second relates to the modelling of prepayments and embedded options. The Survey results indicate that almost one quarter (24.3%) of respondents do not model prepayments/embedded options. For banks in this position, this may suggest a compliance gap that will need to be addressed in the near future.
Chapter 2 - Models

Model Risk and Validation policies

81% of respondents reported that they have an approved Model Risk policy that specifies roles and responsibilities for the execution and development of model validation procedures, with the remainder stating that they have no such policy.

Given the importance accorded to validation within the Standards, it is imperative that validation policies are developed and approved where these do not exist.

The validation of behavioural models poses different challenges to those that exist for many other types of risk models, which lend themselves more readily to statistical tests or other well-established quantitative procedures.

Therefore, where validation policies exist but have been developed in the context of “statistical” models, banks will need to confirm that the policies address adequately the particular characteristics of behavioural models.

Model Documentation

Over 90% of respondents reported that they have documented their behavioural models, although less than half indicated that the documentation contained a detailed description of the models.

8% reported that they had not documented their behavioural models. The results indicate that most banks have more work to do in order to improve the quality of their behavioural model documentation.

The Standards require that senior management has a good understanding of IRRBB and associated modelling practices.

Detailed model documentation is one mechanism that helps to demonstrate that this requirement is met. Leading practice is for behavioural models to be documented to a sufficient standard and level of detail that would allow an independent and knowledgeable third party to rebuild the model using the documentation.

Frequency of review and update of models

Over two-thirds of respondents (67%) reported that they review their behavioural models annually, with another 25% reviewing their models every 2-5 years.

8% responded that they do not review their behavioural models.

The results indicate that, for some banks at least, the frequency of review may need to increase going forwards, depending on the materiality and importance of the behavioural models.
Chapter 2 - Models

Validation of behavioural models

1. Method and approach

Approximately two thirds of respondents reported that validation involves backtesting using historical data (66.7%) and sensitivity analysis on IRRBB indicators (gaps, EVE or NII) (63.9%), with 58% indicating that they use qualitative assessment. The results suggest that around one third of respondents do not use quantitative techniques in their validation and over 40% do not undertake a qualitative assessment. These results, when taken together, indicate that many banks will need to enhance the extent and/or depth of validation undertaken. Good practice with respect to model validation is that models should first be assessed for conceptual soundness, largely through a qualitative assessment, followed by appropriate quantitative tests (where these are possible and sufficient data exists) to determine if the model operates as intended under different scenarios.

2. Responsibility for validation

Most respondents indicate that the Risk department (77.1%) or ALM department (25.7%) are in charge of validating behavioural models, with 17.1% responding that Internal audit is the main department in charge of this activity. Whilst the BCBS Standards are not prescriptive as to who should perform the validation, accepted good practice is for models to be validated independently from the function or team that developed them. The survey results indicate that some banks at least will need to give additional consideration to which independent function(s) should be responsible for performing validation and how appropriate segregation and oversight is ensured where models are validated by the function that developed them.

3. Validation reports

83.3% of respondents reported that the validation is documented, with the remaining 16.7% responding that no documentation is produced following validation. A validation report is essential to demonstrate not only that the validation has taken place, but that it has been performed to appropriate standards and to ensure any findings, limitations or conditions have been documented and made available to the relevant stakeholders. The BCBS requirements are not prescriptive with regard to the level of detail and content of validation reports but as a general rule a validation report for a material model should contain sufficient detail to enable a knowledgeable and independent third party to understand the work that has been carried out and the basis for any conclusions drawn. As only 38.9% of respondents reported that they produced a full validation report, the Survey indicates that this is an area requiring further enhancement for most banks.

4. Reporting of Validation results

The results indicate that the validation reports are provided to ALCO (58.8%), Risk Committee (52.9%) or to other management bodies or stakeholders (35.3%). The BCBS Standards are not prescriptive as to who should receive validation reports, but the principle that senior management should have a good understanding of IRRBB and associated measurement and modelling techniques is set out clearly in the Standards. The documentation of assumptions and limitations within the model documentation, together with thorough and well-documented validation findings that are broadly circulated to relevant stakeholders and management, provide an important mechanism in helping the bank to demonstrate that senior management understand the potential limitations of behavioural models. Senior decision-making and oversight bodies such as ALCO and Risk Committee should be informed of model limitations, whether self-identified by model developers or through the validation.
Chapter 3 - Limit Framework & Capital Adequacy

Limit framework

The renewed IRRBB principles require banks to implement policy limits that keep IRRBB exposures within their risk appetite. This limit framework is a control mechanism and lays the groundwork for IRRBB exposures. The main finding from the survey is that almost 50% of respondents have a limit framework in place, but indicate that it should be significantly improved to comply with new regulations.

Most importantly, a bank must determine policy limits based on its nature, size, complexity and capital adequacy, as well as its ability to measure and manage its risk. Deloitte asked banks how limits are calibrated. Most banks (71.9%) argued that they determine risk limits based on their risk appetite statement. Another significant part (53.1%) express limits as a percentage of their capital. Only a few banks base their limits on historical utilisation (see Figure 1).

Furthermore, the BCBS requires that risk limits must be applied on a consolidated basis and at the level of individual affiliates. The survey shows that 60% of all respondents apply their set of limits on a consolidated level, roughly 65% on an entity level and 12.5% on a business unit level. Depending on the nature of a bank’s activities and business model, sub-limits may also be identified for individual business units, portfolios, instrument types or specific instruments. The level of detail of risk limits should reflect the characteristics of the bank’s holdings, including the various sources of the bank’s IRRBB exposures.

Lastly, banks should have systems in place to ensure that breaches of limits receive instant management attention and be escalated without delay. It should be clear who will be informed and how communication will take place. More than 75% of survey respondents have a formal escalation and remediation process to the head of Treasury or ALM department and to the ALCO. Only 9.1% of respondents state that they have no formal escalation process and handle limit breaches on a case-by-case basis.

How are the limits calibrated?

- Defined from the Risk Appetite: 71.9%
- Expressed as a % of the capital: 53.1%
- Based on historical utilization: 15.6%
- Based on historical utilization & business growth forecasts: 21.9%

At which level are the set of limits applied?

- Consolidated Level: 58.80%
- Entity Level: 64.70%
- Business Level: 11.80%
Capital adequacy

Capital adequacy for IRRBB must be specifically considered as part of the Internal Capital Adequacy Assessment Process (ICAAP), in line with the bank’s risk appetite on IRRBB. The capital adequacy assessment should take the bank’s limit framework of IRRBB exposures into account, as well as whether these limits are reached at the point of capital calculation.

Deloitte asked European banks what the status of a bank’s ICAAP process is for the quantification of internal capital for IRRBB risks. Out of all respondents 81.8% indicated they have a well-structured capital adequacy framework, but some enhancements are necessary (i.e. including additional shocks). 12.1% argued that they have a fully compliant capital adequacy framework. The remaining 6.1% of banks indicated that their capital framework is not adequate and not in line with expectations for IRRBB management.

How is expected to evolve in your bank the ICAAP process for the quantification of internal capital for IRRBB risks?

According to the IRRBB guidelines a bank’s capital adequacy should be determined in relation to the risks to economic value. Banks should also consider capital buffers in relation to future earnings. Banks were asked which types of measures are used to quantify capital impacts. Figure 2 illustrates that most banks already implemented multiple interest rate scenarios in capital calculations. Furthermore, the majority of banks use EVE sensitivity (58.8%) to quantify capital, while fewer banks use NII sensitivity (47.1%).

The IRRBB guidelines prescribe that the outcomes of the capital adequacy for IRRBB should be considered in a bank’s ICAAP and flow through to assessments of capital associated with business lines. The survey results showed that almost all banks (96.8%) include the IRRBB internal capital in the ICAAP report. Also, 22.6% of banks use it for capital allocation per entity or business line. 61.3% use internal capital to define their risk appetite statement relation to IRRBB.

Which types of measures are used to quantify Capital Impacts?

Multiple answers allowed
Chapter 4 - Governance

Changes in the governance structure include mainly a stronger involvement of the management and stricter definitions of responsibilities

The IRRBB framework requires changes for the financial institution’s quantitative and qualitative risk management. On the one hand, the improved requirements of the IRRBB will have a major impact on systems (Chapter XIV), processes (Chapter XIV) and models (Chapter XIV) for determining the interest rate risks in the banking book. On the other hand, the IRRBB framework renders more precisely the requirements for the governance structure of the interest rate risk management and liquidity steering. These requirements mainly include a stronger involvement of the governing body, ALCO, Treasury and IRRBB steering operating units in their oversight function, a stricter designation of responsibilities and an enhanced definition of the "lines of defence".

Deloitte’s EMEA ALM & IRRBB survey addressed these requirements to their participants and analysis the expected efforts in adopting them to the current governance structure. The majority of Deloitte’s EMEA ALM & IRRBB survey participants said that the changes of the IRRBB framework would hardly affect them or even not at all. 70.2% of participants explained that their current situation is already consistent with the upcoming changes and 9.3% said that they already have a partial alignment. Nevertheless 2.2% explained that they are facing relevant gaps and 12.0% said they have some gaps concerning their current governance structure.

Figure 19 - Impacts on governance

Distribution of responses regarding impact on governance

Most of the identified gaps between the current situation and future requirements focus on an extended responsibility of the management. One main finding is that the role of ALCO should be more active in the business steering and decision-making. Furthermore ALCO’s duties should be stronger linked to the monitoring of limits and validation of the behavioural models which will extend the responsibility of the committee further.

Figure 20 - Operating model for cross-department cooperation

Does the Bank expect more cooperation with the management control in setting up dynamic approaches?

- No, dynamic approaches are already set up and the new production figures are based on the control management / planning forecasts
- No, dynamic approaches will be developed and implemented independently from management control department
- Yes, the implementation of dynamic analyses requires to use the control management forecasts and then more interactions with the control management team
- Yes, the implementation of dynamic analyses requires to use the control management forecasts and then more interactions with the control management team. In addition, ALM will review and challenge the forecasts made by the control management in order to check their consistency with regards to the Interest Rates scenario or the bank’s Balance Sheet structure
Chapter 4 - Governance

The comprehensive function of the governance structure will lead to many interrelations by the ongoing implementation of the IRRBB framework

Although the survey has shown that the majority of participating financial institutions are already aligned to the future requirements the ongoing process of implementing the IRRBB framework will continue having an impact on the governance structure. These efforts are mainly stemming from the strong interrelations between the governance framework and other changes. As a result, an enhancement of processes & systems or ALM & IRRBB models will automatically lead to an adjustment of responsibilities.

In addition, interrelations will also result from the closure of existing gaps of requirements for the future governance structure. As revealed by the Deloitte ALM & IRRBB survey the extension of the key role of ALCO is also likely to lead to those additional interactions. For example, a more active business steering by the management (e.g. ALCO) is only possible if the relevant information is transported to the relevant committee on a regular basis. Therefore, the reporting and disclosure must comprise required addresses.

Furthermore, a stronger linkage of the management to the monitoring of limits will also lead to an additional participation within the limit framework. Finally, for including the ALCO to the validation of behavioural models a closer interaction between ALCO and ALM & IRRBB models must be established.

Adopting the governance structure to the new IRRBB framework will be an continuous challenge while implementing the relevant changes

Overall, Deloitte’s ALM & IRRBB survey showed that most financial institutions are not required to include major changes to their current governance structure. Still, the ongoing process of implementing the IRRBB framework will also lead to an ongoing adjustment of the governance structure as a result of the close interrelation of governance with other major requirements within the IRRBB framework.

Nevertheless, the extension of the responsibility of governing body, ALCO, Treasury and IRRBB steering operating units will include further requirements for improving existing reporting and establishing detailed plans and documentation regarding integration in the internal control system as well as IR-RBB management practices, models used and risk control. Furthermore, the governance structure must be considered and extended by aligning the required rate shock scenarios (dynamic modelling) with business model and planning in a comprehensive framework.
Chapter 5 - Internal & external reporting

Pillar 3 public disclosure requirements mandate that banks disclose information on their capital position and risk exposures to enable external stakeholders to compare risk profiles across different banks. In light of this, the BCBS has extended disclosure requirements for IRRBB as part of the revised Standard to promote greater consistency, transparency and comparability in the measurement and management of IRRBB. The disclosure requirements for IRRBB were also confirmed and finalised in BCBS Standard entitled Pillar 3 disclosure requirements – consolidated and enhanced framework, as published in March 2017.

Extensive quantitative and qualitative public disclosures are required. In short, the new quantitative disclosures require EVE stress results for the six scenarios and NII stress results for the two parallel scenarios. EVE results can be based on either the bank’s internal model or the standardised framework, and should be based on a run-off balance sheet and instantaneous shocks. NII results should be based on the bank’s internal model, a constant balance sheet over a one year horizon and instantaneous shocks. National supervisors may also specify additional scenarios for which they require regulatory reporting or public disclosure. In addition, the average and longest repricing maturity assigned to NMDs must be disclosed.

The qualitative disclosure requirements include the bank’s definition of IRRBB, a description of the bank’s IRRBB measurement and reporting approach, IRRBB management and mitigation strategies as well as the associated accounting treatment. The bank must also describe the assumptions on which its internal model and quantitative disclosures are based and explain the methodologies or analyses supporting such assumptions.

In addition to meeting new public disclosure requirements, banks will also need to meet revised local regulatory reporting requirements. National supervisors need to ensure they collect sufficient information so as to monitor banks’ IRRBB trends, assess the soundness of banks’ IRRBB management, identify outlier banks and mandate appropriate remediation measures. The revised Standard encourages national supervisors to look at a long list of factors when assessing quality of the bank’s IRRBB management - it is therefore of paramount importance that the banks have the capability to provide granular information that accurately and adequately describes its IRRBB exposures, drivers, assumptions and practices.

In addition to more stringent prescribed IRRBB public disclosures, Principle 7 of the new standard also dictates enhancements to internal reporting practices. Banks are still required to report aspects such as risk metrics, risk drivers and limit utilisation, but there is a stronger focus on the level of granularity that these results need to be provided at (e.g. per currency, per legal entity, etc.). Furthermore, there is also still a requirement to report on governance aspects such as audit issues as well as compliance with policies and procedures, but under the new Standard, there is an additional focus on model assessment results, such as sensitivity testing of assumptions and testing of forecasts vs. actuals. There is also a stronger emphasis on highlighting the sensitivity of fair value portfolios to changes in market conditions.

Based on our survey, the area of IRRBB reporting requiring the most enhancement for the majority of banks is the quantitative reporting of detailed analyses reflecting changes in IRRBB exposures between different periods at a granular level (e.g. breakdowns per risk type, currency or entity / business line; underlying IRRBB drivers i.e. assets, liabilities and cash flows; behavioural assumptions; etc.). The primary limitations here are banks’ existing IRRBB measurement and management systems, processes and data. 40% of participating banks state that the reporting capabilities in their current IRRBB systems are deficient and the majority (55%) raised data quality concerns. Only 50% currently utilise comprehensive datasets (on a transactional basis) in their IRRBB systems, pointing to potential deficiencies (in the other 50% of banks) in the granularity of data required to meet new reporting requirements. It is clear that many banks may either need to modify their existing IRRBB systems infrastructure, or upgrade to new systems altogether. Computational engines possessing a greater degree of flexibility will be required to efficiently calibrate required parameters, run analyses on multiple interest rate risk scenarios and handle more granular data. Comprehensive data quality and data governance frameworks will also need to be introduced and embedded within IRRBB management to ensure that the data feeding the IRRBB measurement process meets accuracy and consistency standards.

On the bright side however, not all enhancements required to comply with new internal reporting requirement will be very significant, as the majority of respondent banks already providing their respective ALCOs (or equivalent) with reporting information that includes a combination of:

- Summary of aggregated IRRBB exposures (91%)
- Quantitative detailed analyses on changes in the IRRBB exposures: per type of risk, breakdown by currency or entity / business line (56%)
- Insightful commentary on significant changes in IRRBB exposures or hedging strategies (78%)
- Changes in behavioural models and model audit results (63%)
- Limits usage / breaches (88%)
- Internal capital / ICAAP figures (59%)
- Stress tests results (63%)
- Proposed hedging strategies (63%)

Furthermore, in terms of public disclosures, a large majority of the participating banks in our survey already provide quantitative and qualitative disclosures on IRRBB on an annual, semi-annual or quarterly basis, but these banks also indicate that under the new Standard, the amount of quantitative and qualitative disclosures they make in future is expected to significantly increase.
Chapter 5 - Internal & external reporting

Table 22 – Observed practices related Pillar 3 public disclosure
Based on “tier 1” banks annual Pillar 3 reports as of December 31, 2016

<table>
<thead>
<tr>
<th>Banks</th>
<th>IRRBB policies</th>
<th>Financial communication (Pillar 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>EVE sensitivity</td>
</tr>
<tr>
<td>#1</td>
<td>Monitoring balance sheet / own funds exposures as well as budgeted financial margin</td>
<td>+/ - 100 bp</td>
</tr>
<tr>
<td>#2</td>
<td>Mainly by examining the sensitivity of market Value of the various positions in the banking book to parallel shift in the interest rate curve</td>
<td>+/ - 100 bp</td>
</tr>
<tr>
<td>#3</td>
<td>Three types of indicators: EVE sensitivity, NII sensitivity &amp; VAR</td>
<td>+/ - 100 bp</td>
</tr>
<tr>
<td>#4</td>
<td>Stabilize Net Interest Margin</td>
<td>+/ - 100 bp</td>
</tr>
<tr>
<td>#5</td>
<td>Measured through sensitivities to revenues and limits on gaps</td>
<td>Only for regulatory purposes;</td>
</tr>
<tr>
<td>#6</td>
<td>Structural fixed rate position values and interest rate margin sensitivity analysis (three years rolling period)</td>
<td>+/ - 100 bp</td>
</tr>
<tr>
<td>#7</td>
<td>Indicators used are threefold: Equity At Risk, Basis Point Value or the delta of Equity, Income at Risk</td>
<td>+/ - 100 bp</td>
</tr>
<tr>
<td>#8</td>
<td>Earning Sensitivity, NPV at Risk and Basis Point Value</td>
<td>+ 100 bp</td>
</tr>
<tr>
<td>#9</td>
<td>Bank’s economic value as well as Bank’s Earnings</td>
<td>+ 200 bp</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+ 200 bp (floor)</td>
</tr>
<tr>
<td>#10</td>
<td>IRRBB is measured and monitored using three metrics: non traded VAR, net interest income sensitivity, economic value of equity</td>
<td>+ 200 bp</td>
</tr>
<tr>
<td>#11</td>
<td>IRRBB exposure is monitored monthly using market value sensitivity, interest income sensitivity, market value limit and structural hedge limits</td>
<td>Steepening Flattening</td>
</tr>
</tbody>
</table>
Despite considering almost adequate their current IT systems, most banks in the sample (62% of the respondents) consider the need of some relevant evolutions in order to achieve the compliance with the new regulatory recommendations (i.e. scenarios & shocks, dynamic perspective, risk types granularity).

This can be seen, for instance, from the answers given by banks when asked to evaluate the readiness, flexibility and completeness of their IRRBB systems: only 5.4% of the financial institutions states that their systems is already capable to manage all evolutions required by the IRRBB framework.

Main findings from the survey on IRRBB systems and processes are that

1. SYSTEM INTEGRATION & INTERFACES
   A relevant part of banks (46%) highlighted that current IRRBB analyses are performed in a unique system, but the system is not yet integrated with other relevant systems

2. DATA QUALITY AND RECONCILIATION
   Data quality and reconciliation processes on IRRBB data with other risks data are key issues to be addressed to improve operating processes and procedures on this side

3. CALCULATION ENGINES
   New IRRBB principles related to methodological aspects (shock scenarios, dynamic view, behavioural models) are expected to require more powerful and sophisticated ALM & IRRBB calculation engines

4. REPORTING FUNCTIONALITIES
   Flexibility and granularity are two key elements to deal with for the improvement of expected internal and external reporting functionalities and processes

Figure 23 – Summary table on IT systems and processes

<table>
<thead>
<tr>
<th>What are the functionalities for which the IRRBB system do not answer to the business needs?</th>
<th>100%</th>
<th>80%</th>
<th>60%</th>
<th>40%</th>
<th>20%</th>
<th>0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data quality</td>
<td>55.20%</td>
<td>37.90%</td>
<td>34.50%</td>
<td>27.60%</td>
<td>20.70%</td>
<td>17.20%</td>
</tr>
<tr>
<td>Reporting capabilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioural / Financial Modelling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calculation functionalities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance in calculating the IRRBB indicators</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to use high volumes of data</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A relevant part of banks (46%) highlighted that the current IRRBB analyses are performed in a unique system, but for the large majority the system is not yet integrated with other relevant systems.

From an IT architecture point of view, the introduction of a dynamic approach will imply to be able to capture the new production assumptions in the ALM system and to perform all related calculations on this new production at the required level of granularity (for example, on a contract basis for lending).

Most of the ALM software vendors are currently improving their capabilities to support the simulation of the new business production (ALM dynamic) and the integration with other tools or system modules which can provide these kinds of input data.

Also on banking practice perspective, some financial institutions are activating specific transformation programs, taking this opportunity to:

1. **rationalize their IT architecture** by migrating their functionalities into only one system both for ALM and Planning & Controls (especially for a dynamic perspective)
2. **enable the integration of Finance & Risk data**
   - Integration between IRRBB systems with front & position keeping systems will guarantee coherence between IRRBB monitoring (risk) and hedging execution (ALM/Finance)
   - Construction of a common risk Datawarehouse will assure consistency in risk monitoring activities (for example among IRRBB, Liquidity and Market Risk)

**Figure 24 – Level of IRRBB systems integration with other systems**

- **10.8%** IRRBB analyses are performed in multiple systems and a relevant effort of reconciliation among different data is required. No integration between IRRBB systems and other systems is available
- **45.9%** IRRBB analyses are performed in a unique system that is not directly integrated with other relevant systems, but assure the overall coherence of the IRRBB management (risk measurement, limit monitoring, execution/hedging practice)
- **43.2%** IRRBB analyses are performed in a unique system that is not directly integrated with other relevant systems, but assure the overall coherence of the IRRBB management and the reconciliation of data and perimeter with other relevant areas (performance measurement, fund transfer pricing, planning, liquidity and market risk management)
Chapter 6 - Process and IT systems

DATA QUALITY AND RECONCILIATION

A large majority of participating banks (55.2% of the sample – Figure 23, Page 27) highlights the need to develop an adequate Data Quality process, able to ensure reliability and coherent of the input data and information among different bank’s departments (i.e. ALM vs other specific functions focus) in order to enable IRRBB systems to work properly (accordingly with BCBS’s IRRBB Principle 6).

In most of the cases (67.7% of participants - Figure 25), internal control framework is poor and limited and only high-level reviews are conducted to ensure accuracy (data accessibility and usability) and minimize operative risks.

Given the absence or limited coverage of the internal control framework, business users are facing more and more problems related to multi-contribution of data, where it is not clear which source system provides the most reliable information and are often forced to conduct manual reconciliation in order to identify the cases of multi-contributions, the underlying reasons and the evidences that show which information is the correct one.

Reconciliation represents another critical and time consuming issue to be addressed to improve operating practices and processes.

These finding will be a relevant issue to be solved in order to comply with BCBS’s IRRBB Principle 2 which prescribes to:

- set controls on IT systems to prevent data lost or damage
- control the quality of the external information sources
- set appropriate mechanism to verify the quality of aggregation
- have adequate procedures to manage discrepancies and irregularities arising during data elaboration by understanding the underlying “reasons” and setting dedicated reconciliation procedures, where necessary

Figure 25 – Internal Controls and data quality framework

Does the bank have adequate and independent Internal controls in place to control and challenge results and key information?

- Limited review and challenge of IRRBB results prior to submitting regulatory or management reports
- The bank has a basic internal control framework to ensure the integrity of its IRRBB management process. A high-level review of results and commentary takes place to ensure accuracy. Commentary accompanying the results typically only lists the largest movements, and a breakdown of those movements.
- The bank has a full internal control framework to ensure the integrity of its IRRBB management process. The internal controls promote effective and efficient operations, reliable financial and regulatory reporting and compliance with relevant laws, regulations and bank policies. Prior to reporting results to any regulators or governance forums, results are interrogated, reviewed and challenged by senior IRRM team members and an independent internal control function. The quality of commentary is scrutinized to ensure it provides real insight into the market and business drivers behind large movements.
Chapter 6 - Process and IT systems

CALCULATION ENGINES

Although they were considered the 3rd and 4th priorities for IRRBB systems evolution, a relevant part of participating banks recognized the importance to strengthen their ALM & IRRBB management practice through the implementation of more powerful and sophisticated calculation engines, leveraging on new technologies and available IT solutions. In particular, IRRBB systems will have to manage:

1. dynamic view approaches to measure interest rate risk with forward-looking analyses that consider the evolution of bank’s balance sheet, strategic planning forecasts and new business simulations on banking book portfolio
2. quantitative behavioral models (proportional to nature, dimension and complexity of the business) to identify and quantify all interest risk types (i.e. optionality risk, basis risk, repricing risk) related to banking book portfolio
3. extensive range of shock scenarios (both regulatory and internal – i.e. historical volatility of interest rate and option risks, evolution of administrated rates, spread variations) for identifying the different effects on risks factors and applying stress test scenarios for limits definition and capital adequacy self-evaluation

<table>
<thead>
<tr>
<th>10,8%</th>
<th>21,6%</th>
<th>62,2%</th>
<th>5,4%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current IT system won’t be adequate and sufficiently flexible to support the expected evolution on IRRBB. Substantial and relevant interventions will be required.</td>
<td>Current IT system is not adequate for future evolutions of IRRBB framework, but it has the potential and key features to achieve compliance with new standards.</td>
<td>Current IT system is adequate to manage the evolution of IRRBB management practices. However, some changes will be necessary.</td>
<td>Current IT system is already capable and adequate to manage all evolutions of IRRBB framework.</td>
</tr>
</tbody>
</table>

Some banks have already identified main directions to move towards in terms of calculation engine evolution:

1. deployment of synergies with market risk to evaluate specific instruments and the related optionality risk (i.e. adopting full reevaluating models);
2. enhancing the granularity of IR risk quantification by strengthening and splitting calculation phases in order to provide details on different risk types effects (option, basis, yield curve, repricing);
3. creating flexible functionalities for scenario construction by leveraging on a set of risk factors (i.e. interest rates, volatilities, exchange rates, haircuts, credit spreads, rollover factors) to be stressed in different way and directly linked to calculation engine for measurement the effects on NII or EVE.

Also on processes and procedure side, the survey pointed out several weaknesses in banks’ documentation and operating procedures, which require significant efforts to the majority of participant banks. Main gaps were identified on:

- the formalization of operational procedures and processes to generate IRRBB indicators & reports
- the enhancement of the review and validation processes on behavioural models (especially on the formalization of models’ assumptions and validation outcomes)
- the integration and consolidation of the group overall risk position by enhancing system’s reporting processes with:
  - centralized framework, compliant with reporting requirements from Alco or Risk Committees or Authorities
  - dedicated support for quantitative and qualitative public disclosure according to Pillar 3 framework

![Figure 26 – Application of dynamic approaches within IT systems](image)

How will your bank approach the introduction of a dynamic approach into NII and EVE sensitivity analysis?

- No impact: the bank has already adopted a dynamic approach for IRRBB sensitivity analyses for both EVE and NII measures in coherence with planning assumptions / budget forecasts
- Limited impact: the bank is currently adopting dynamic analyses on both EVE and NII measures, but considering specific risk management assumptions / scenarios. These analyses will have to be aligned with business and planning assumptions
- Significant impact: the bank has not included dynamic approach in its IRRBB framework or the dynamic approach used is not enough robust (only used on occasional basis and specific measures to respond to specific regulatory or managerial requests; the scope is not complete, for example limited to NII measures, and business and planning assumptions are very simple and not reconciled with the budget / control management forecasts. For the future, it will be necessary to better structure the whole methodological framework in order to extend the coverage (i.e. IRRBB measures, assumptions) and approach (i.e. frequency, level of integration/automation) of these analyses
- The bank does not intend to implement dynamic approach advocating the static approach is sufficient considering the nature and scale of its activities
Chapter 6 - Process and IT systems

REPORTING FUNCTIONALITIES

Figure 27 – Data granularity

On reporting side, participating banks highlight the need and direction towards more flexibility and customizable functionalities, able to support the ALM and IRR functions to regularly provide complete information to the management (IRRBB measurement results and hedging strategies effects).

Another 2 important topics to be address on reporting is the granularity (drill-down) and aggregation/consolidation of results at Group, Sub-Group levels

- regarding the granularity, it is shown in Figure 27 that only the 50% of interviewed banks attest to have a complete and comprehensive dataset available on transactional basis
- With respect to level of aggregation, the large majority of banks declare that the consolidation of results at Group or sub-Group level is an activity that still require a relevant effort and manual activities.

It is also worth noting that, although key IRRBB processes seem almost automated, manual adjustments are still and frequently needed (93% of the banks in the sample) especially for data correction/completion and reporting purposes.

With the coming into force of the revised IRRBB principles and the need to provide a much more extensive public disclosure of IRRBB framework, ALM software providers will be required to evolve the usability and flexibility of their solutions in order at least to

a. minimize manual efforts and related operative risks
b. introduce more transparency and with tracking functionalities and audit trail functionalities which will allow ALM specialists to navigate the system and fully manage the underlying data.

Figure 28 – Summary table on Most relevant gaps highlighted on IRRBB systems and processes

INTERFACES
More integration with up and downstream systems
- For dynamic views based on bank’s future business IRRBB system should be aligned and integrated with planning system
- Synergies are expected among IRRBB, liquidity and market risk systems

REPORT
Flexibility and granularity are key prerequisites
- Flexibility and customization of reporting is a key requirement for IRRBB analyses
- In addition, both internal needs and IRRBB principles require for a maximum level of granularity (deal level effects & split of IRR types)

DATA
Data quality to be significantly enhanced
- Manual adjustment on data correction / completion is still a big issue
- Reconciliation processes of IRRBB data perimeter with other areas always require a huge effort

ENGINE
More powerful calculation engines are required
- Dynamic analysis and behavioural models with full revaluation of economic values and earnings will require powerful engines
- More complex scenarios for IRR shocks also demand more calculation phases in IRRBB engines

Interest Rate Risk in the Banking Book: 2017 Deloitte Survey – Taking a closer look to the BCBS Standards 25
Proposed actions and recommendations

Both the new BCBS standards on IRRBB and the banking industry’s view emphasize some interesting paths for the future of Asset and Liability Management and Interest Rates Risk management practices.

Given the short time frame for the alignment of the IRRBB practices with the BCBS revised principles and the underlying challenges, banks are expected to give high priority to this topic in order to be compliant with the BCBS standards by 2018.

The changes required to the IRRBB framework will encompass all the main aspects of the IRRBB framework: the introduction of new methodologies will require more granular data of quality and also more flexible systems; the IRRBB governance and the target operating model will be the key junction point between the IRRBB and ALM specialists, the bank’s top management and its key stakeholders.
1. A revised Target Operating Model to better support the needed changes

Overall, the surveyed banks’ view is that somewhat minor impacts are expected on governance and on processes, since they consider that their level of compliance with the revised BCBS IRRBB standards is already high. Nevertheless, the survey highlights that some strategic interventions are still required in order to more effectively implement and oversee the changes required by the new standards to the methodologies and to the systems.

The key expected actions are to integrate the bank’s target operating model and the related processes with the new roles and enhanced responsibilities. For example, where this is not yet the case, relevant functions and the appropriate related governance framework will need to be implemented for the definition of the relevant IRRBB scenarios, for enhanced internal validation of IRRBB models, for projection analyses and, more broadly, for simulation activities. In a number of cases, the current practices and internal documentations on risk strategy, risk appetite, internal controls, hedging practices, model risk management and model calibration, as well as risk reporting, will need to be improved.

2. IRRBB Methodology – The integration of new perspectives into the IRRBB framework

Dynamic and stressed scenario analyses are expected to be the two most significant areas where changes are needed.

Dynamic analyses will require forecasting the future production but also the commercial margin targets, in coherence with the bank’s strategic and business planning. In order to properly analyse all effects of the changes in interest rates and of balance-sheet structure, the granularity of forecasts should be consistent with that of modelling (generally, at product level).

A review of the behavioural models will also be required to ensure their compliance with the prescriptions of the new BCBS IRRBB standards and also to properly capture behaviours in specific market conditions (i.e. low/negative interest rates).

The more mature banks are moving towards the enhancement of their methodological framework by enhancing their approaches to interest-rate risk scenarios (e.g. use of forwards rates and of bespoke scenarios) and by defining more robust methods to allocate their balance-sheet planning forecasts to IRRBB product granularity and aligning behavioural models assumptions with the IRRBB prescriptions.

3. IT systems – Evolution will come from technological opportunities and systems integration

While considering that their IT systems are adequate to manage the changes required in the IRRBB management practices, a majority of banks (62%) confirm the need for some improvements. In addition, 32% of respondents have stated that their IT systems will need to be upgraded since they will not be able to cope with the required functionalities under the new BCBS standards.

Even though, in many cases, the IRRBB analyses and monitoring are performed through a unified platform, the IRRBB IT systems are not yet properly integrated or interconnected, as appropriate, with the other relevant ones (e.g. liquidity risk management systems, ALM systems). Moreover, reconciliations remain a key issue since only 46% of banks are able to comprehensively reconcile their IRRBB data with those of other relevant functions (e.g. accounting, other risks).

The Deloitte IRRBB survey highlights a clear direction, insisting on the implementation of a common and integrated risk data model to reduce reconciliation costs (e.g. IRRBB, liquidity and possibly accounting and credit risk), the deployment of new technologies and systems (e.g. powerful engines and more flexible solutions for scenarios analyses, enabling the handling of more granular data) and the introduction of a complete and sound data quality and data governance framework.

Some banks have also underlined the launch of dedicated transformation programmes that interact with other key initiatives, such as BCBS 239 on risk data aggregation and reporting, Big Data, EBA Stress Tests and FRTB (Fundamental Review of the Trading-Book), in order to benefit from synergies and allow more integration of some key processes.

For more details on the survey

Additional insights and detailed reports related to the Deloitte 2017 ALM & IRRBB survey are available upon request.

The Deloitte’s EMEA ALM & IRRBB group consists of senior professionals and consultants with substantial experience consulting on a variety of ALM and IRRBB issues. This group draws on the Deloitte’s global network of partners and industry and management experts.
How Deloitte can help

Deloitte’s ALM & IRRBB Management solutions evolves along with the concurrent financial markets’ and regulatory challenges for improving interest rates risk identification, measurement, valuation, reporting and monitoring, hedging strategies and management governance. We can help you perform the following interest rate risk management solutions in the banking book activities:

**IRRBB Identification**
- Define banking book boundaries in coherence with the Final Basel Standards on IRRBB and on the Fundamental Review of the Trading Book (FRTB).
- Identify on- and off-balance sheet interest rate risk exposures
- Establish IRRBB rate and risk repositories

**IRRBB Measurement and Mitigation**
- Design IRRBB measurement methodologies (e.g. economic value, maturity gap, duration gap, earning at risk, net interest income and Value at Risk)
- Establish behavioural assumption mechanism and conduct behavioural model validations
- Assess the impacts of Interest rates strategy
- Design and implement IRRBB stress testing methodologies (e.g. parallel yield curve shifts, non-parallel flattened and steepened yield curve shifts, and firm-wide enterprise scenario stress tests)
- Identify hedging strategies to mitigate interest rate risk by identifying appropriate debt and derivative instruments and strategies considering risk appetite, hedging costs and benefits, and liquidity constraints
- Design and validate interest rate derivative valuation and modelling assumptions to help building and assessing interest rate risk or valuation assumptions (considering defined peer results, industry-accepted ranges, or independent projections)

**IRRBB Governance**
- Define IRRBB strategy and design IRRBB risk appetite framework
- Establish, embed and monitor IRRBB risk appetite and tolerance metrics
- Design and consolidate IRRBB reporting and documentation to streamline the oversight of interest rate risk
- Provide accounting assistance in relation to interest rate risk to address derivative accounting issues and compliance requirements, e.g. IFRS9 financial instruments
- Validate IRRBB models and internal controls to address independence and governance controls
- Assist in developing IRRBB policies, processes and procedures
- Evaluate IRRBB capital allocation and monitor capital adequacy
- Provide assistance in the implementation of the interest rate risk management infrastructure, including IT architecture, systems and data quality framework
- Assist in the projection of macro-economic scenarios and the optimization of the interest rate mismatches


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