THE SHORT & LONG TERM IMPACTS OF INTEREST RATE RISK IN THE BANKING BOOK

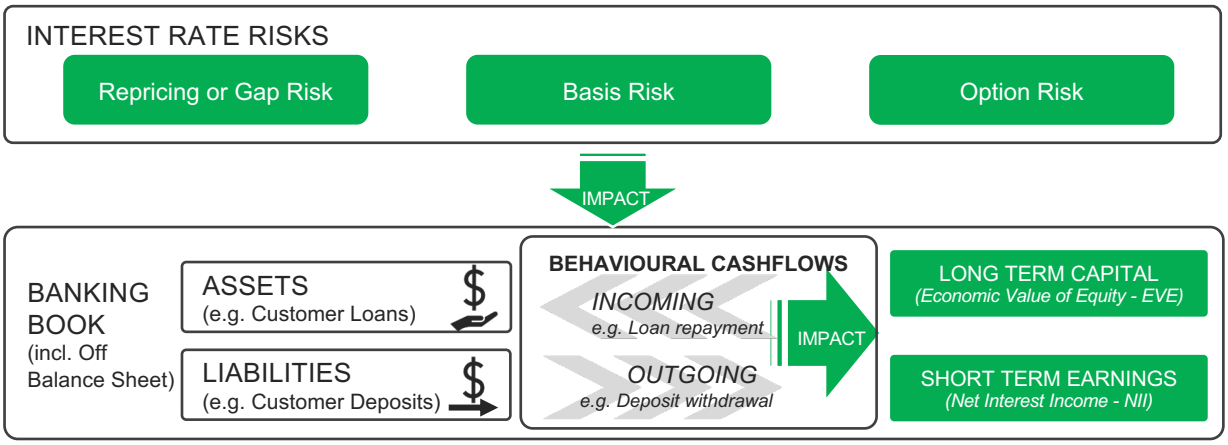
REGCENTRIC

Importance of managing Interest Rate Risk

With historically low interest rates and radically uncertain times during and after the COVID19 crisis, which in turn is leading to unpredictable customer behaviours, it is increasingly prudent for ADIs to proactively monitor their business risks associated with lending and borrowing that depend on interest rate movements and customer behavioural changes. Similar to other risks associated with the banking business such as Credit/Market/Liquidity/Operational risks, ADIs should be simulating the impact on their interest rate related risk profile by considering macro-economic outlook into their scenarios and take appropriate actions to mitigate any short term or long-term impacts that is beyond the risk appetite of the bank. This paper discusses interest rate risk in the banking book (IRRBB) and highlights the need for ADI's to strategically consider the process, tools and methodologies applied in assessing, monitoring and managing this risk efficiently and in a timely manner during the current environment.

What is IRRBB?

IRRBB is a risk that pertains to the "Banking Book" in the balance sheet due to adverse interest rate movements which in turn affect the future cashflows (both incoming and outgoing) of the bank thereby directly impacting the short term earnings of the company as well as long term ability to accumulate capital.



Interest Rate Risk is one of the many types of risks faced by financial institutions that need to be prudently monitored and managed. BASEL standards outline key principles and measures for monitoring and managing this risk. Under the Basel Committee on Banking Supervision's Interest rate risk in the banking book standard issued in April 2016, banks must report the findings of placing their banking book through various interest rate shock scenarios. This risk, like other risks stipulated in BASEL standards, is enacted and supervised by a local regulator in the jurisdiction the regulated entity operates in. BASEL imposes a regulatory capital requirement for IRRBB through the supervisory review process, rather than a minimum capital requirement.

There are 3 key types of Interest Rate Risks :

- Repricing or Gap Risk
- Basis Risk
- Option Risk

In addition to the above 3 risks, BASEL also outlines the need for banks to actively monitor Credit Spread Risk in the Banking Book (CSRBB) which is a risk emerging due to changes in credit spreads on credit risky instruments that is not already explained by IRRBB or due to expected credit / jump to default risk.

Types of Interest Rate Risks

REPRICING OR GAP RISK

Repricing or Gap Risk is the risk arising due to mismatch in the maturity or repricing profile of assets and liabilities which impacts banks earnings and capital when interest rate curves change. There are 2 types of movements in the yield curve.

- **Parallel Risk** – Parallel is the simple increase or decrease of the yield curve profile e.g. Funding loans via overnight deposits available in money market being susceptible to reserve bank cash rate changes.
- **Non-Parallel Risk** – Nonparallel movement is referred to changes that affect the shape or slope of the yield curve e.g. flattening of the curve due to short term / long term rates coinciding. E.g. borrowing short and lending long strategy of banks are affected by shift of yield curve profile.

BASIS RISK

Basis Risk arises due to the relative difference in the interest rates on financial instruments across assets and liabilities and its associated effects on future cashflows. E.g. Floating rate loans based on market rates such as EURIBOR being funded by liabilities with a different market rate e.g. LIBOR could result in negative earnings / capital impact if LIBOR rates increase.

OPTION RISK

Option Risk arises due to the options embedded in the asset or liability that can change the profile of incoming / outgoing cashflows and in turn affect earnings and long-term capital position. This is one of the most complex risks to monitor especially during crisis or shock scenarios. Some examples of behavioural options triggered by customers are 1) Prepayment of loans during low interest rates as part of refinancing; 2) Increased Withdrawal on term and non maturing deposits during crisis. This risk is quite complex for banks to assess as it is built on several assumptions and simulations are generally complicated as well.

Interest Rate Building Blocks

Every interest earnt by a bank on its assets, or paid on its liabilities, is a composite of several price components – some more easily identified than others. Theoretically, all rates contain five elements.

The Risk Free Rate	This is the fundamental building block for an interest rate, representing the theoretical rate of interest an investor would expect from a risk-free investment for a given maturity.
Market Duration Spread	The prices/valuations of instruments with long durations are more vulnerable to market interest rate changes than those with short durations. To reflect the uncertainty of both cash flows and the prevailing interest rate environment, and consequent price volatility, the market requires a premium or spread over the risk-free rate to cover duration risk.
Market Liquidity Spread	Even if the underlying instrument were risk-free, the interest rate may contain a premium to represent the risk associated with ability to easily trade the instrument in the market especially during crisis. Instrument volume, size and type could be determining factors here.
General Market Credit Spread	This is distinct from idiosyncratic credit spread and represents the credit risk premium required by market participants for a given credit quality (e.g. the additional yield that a debt instrument issued by an AA-rated entity must produce over a risk-free alternative).
Idiosyncratic Credit Spread	This reflects the specific credit risk associated with the credit quality of the individual borrower (which will also reflect assessments of risks arising from the sector and geographical/currency location of the borrower) and the specifics of the credit instrument (e.g. whether a bond or a derivative).

How is IRRBB assessed?

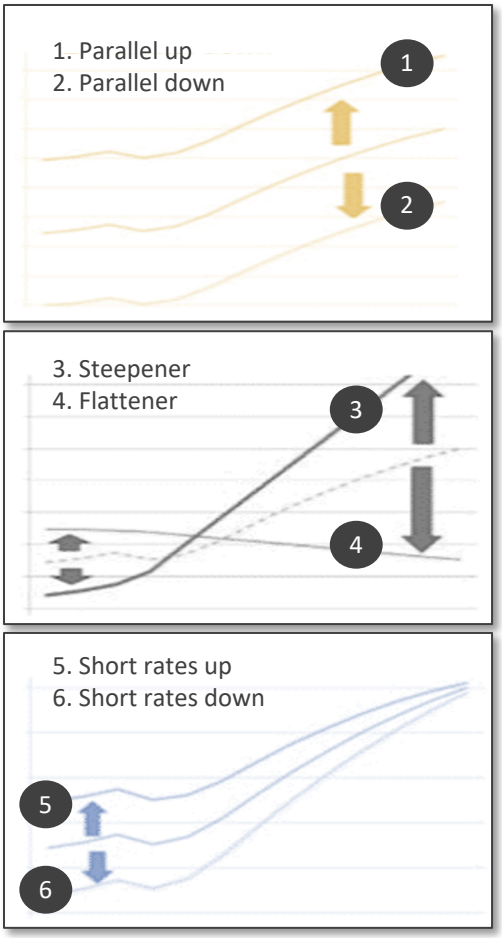
BASEL standard outlines 12 key principles for managing IRRBB. These principles also cover the approach to be taken while assessing the Risk both qualitatively as well as quantitively. Quantitatively any measures identified for assessment must enable monitoring of the impact on short term earnings as well as long term economic value. The principles also highlight the need for banks to apply appropriate stress and shock scenarios on the interest rate in the assessment and measurement process.

The Stress and Shock Scenarios are essentially "WHAT IF" scenarios that must be accommodated in the quantitative measurement of IRRBB. These scenarios must consider:

- The banks business model (e.g. concentration in certain markets), overall risk profile and sensitivity to certain types of interest rate risks
- Historical and hypothetical interest rate stress scenarios which tend to be more severe than shock scenarios
- 6 prescribed interest rate shock scenarios set out in the BASEL standard (applied to each currency the ADI is exposed to)

    1. parallel shock up
    2. parallel shock down
    3. steepener shock
    4. flattener shock
    5. short rates shock up;
    6. short rates shock down

- Any additional scenarios identified by local Regulator



The 2 key aspects of quantitatively measuring the IRRBB is around identifying the impact on short term earnings and the long term capital position of the bank when subject to different stress / shock scenarios. BASEL has identified 2 measures in relation to them.

- **Net Interest Income (NII) :** NII is used as the measure to determine the impact on the short-term earnings of the bank due to Interest rate shocks. NII is simply the portion of the bank's profit attributed to interest income from the banking book. NII must be disclosed as the difference in the future interest income over a fixed time horizon (typically between 1-5 years) on a constant balance sheet assumption i.e. a maturing contract within the time horizon is rolled over for calculation purposes.

- **Economic Value of Equity (EVE) :** EVE takes into account the longer term impact of IRRBB on the banks balance sheet position. EVE is calculated by assessing the net present value of the assets and liabilities in banking book by discounting all future cashflows computed on the assumption of a runoff balance sheet i.e. all existing contracts can run off to maturity with no rollover.

Also the above doesn't consider the Bank's assumed balanced sheet position due to introduction of new products, change in business model etc. It is important for banks to consider the assumed dynamic balance sheet position in their scenarios as well in addition to run off or constant balance sheet assumption.

Both EVE and NII are equally important measures for IRRBB. For example, if a Bank's primary funding model is based on "buy short lend long" strategy, steepening of the yield curve may have minimal short-term impact however, may significantly impact long term capital due to a more severe affect on future cashflows.

IRRBB implementation in Australia

In Australia, APRA has outlined the revised DRAFT Australian version of IRRBB standards in APS117 that considers the finalised BASEL III norms for IRRBB as well as the local nuances in the Industry and regulations.

APRA initiated its consultation process on IRRBB back in Feb 2018 as part of the overall BASEL related revisions to the capital regulatory framework. Subsequently APRA provided a formal response to the feedbacks received through the consultation on 4 September 2019. APRA intends to finalise the consultation process in 2020 and publish the revised prudential practice guide and reporting standards.

Due to COVID19, APRA has delayed the implementation of these standards in Australia to 1 January 2023. While this is a welcome move, the changes proposed under these regulations will need to be carefully evaluated by all ADIs to assess business readiness to adopt these standards from process, technology and people point of view. In summary, the key proposals are to:

- standardise aspects of the internal modelling approach including placing constraints on the repricing assumptions an ADI can use for non-maturity deposits according to whether or not it is a core deposit and the calculations for optionality risk;
- remove the basis risk capital add-on; and
- extend the application of risk management requirements to all ADIs. Standardised ADIs will not be subject to an IRRBB capital charge unless APRA determines otherwise.

According to APRA, the above proposed changes are unlikely to materially impact capital allocations for ADIs. However, the key consideration for ADIs here is the operational readiness and cost considerations to fulfil this obligation. In particular for smaller ADIs and foreign bank branches who are also now required to apply the risk management requirements.

> "IRRBB requirements will be applicable to all ADI's. Branches of foreign banks and smaller ADI's in particular may find the IRRBB requirements challenging to implement."
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> Subu Hebbar - RegCentric

RegCentric is a leading Australian consulting company, specialised in transformation in Data Management, Finance, Risk Management and Regulatory Reporting in the financial services industry. The RegCentric team consists of highly experienced business and technology consultants who are passionate about assisting Australian financial services companies leverage technology to drive efficiencies, deliver insight and ensure regulatory compliance.

How RegCentric can assist

Please get in touch with us if you would like to know further about IRRBB. We can assist by providing :

- **Advisory Services** : Preparedness for IRRBB regulation APS117, Process and Tools review
- **Implementation Services** : Take advantage of next gen streaming technology (used by tech giants like Netflix, LinkedIn) to quickly and cost effectively implement IRRBB and/or other BASEL and IFRS standards delivering high performance & agility.

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