

Financial Risk & Regulation

Interest rate risk in the banking book – plans for regulatory reforms

Newsletter – February 2022

The recent high volatility in interbank interest rates and government bond yields is expected to continue in the future, as central banks began to tighten monetary policy in the autumn of 2021 as a result of inflationary pressures. In light of this, the regulation of interest rate risk in the banking book is of paramount importance in the work of the European legislature to catch up with their long-overdue task. In this newsletter, we summarize the draft guidelines and RTSs issued by the EBA on methodologies, processes and supervisory requirements. Please note that EBA materials are still in consultative phase and the adopted versions may differ significantly.

The importance of interest rate risk

In our previous newsletters, we presented MNB's requirements regarding interest rate risk in the banking book on several occasions. Of these, it is worth highlighting the sight deposit benchmark model presented in the 2020 ICAAP Manual ([February 2020 newsletter](#)) and the recommendations on the benchmark capital requirement calculation presented in the 2021 Manual ([February 2021 newsletter](#)). In addition, in our [June 2021 newsletter](#), we described the main points of the analysis that summarizes supervisory experience and was published by the MNB in May. Interest rate risk has traditionally been the focus of ICAAP investigations, and the 9R supervisory reporting package was renewed effective from this year, which we presented in our [January 2022 newsletter](#).

The topic is becoming particularly relevant in the light of the turnaround in monetary policy and the rising inflation and interest rate environment. At the beginning of the corona virus crisis, central banks tried to stimulate consumption among economic agents

through monetary easing and liquidity injections, but since the second half of 2021 onwards, there has been a strong inflationary pressure due to rising energy prices and a sharp increase in consumer demand, which monetary policies intend to counterbalance by increasing key interest rates. The rising interest rate environment is presented by the 3-month BUBOR and the 5 and 10-year BIRS in Figure 1.

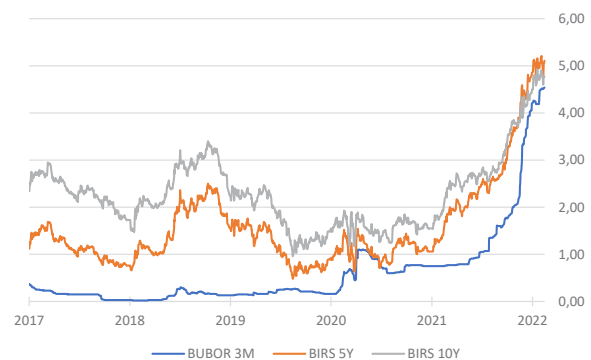


Figure 1 Development of interbank interest rates (%)

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Draft RTS on standardised methods

Interest rate sensitive positions in the repricing table

The draft requires institutions to fill a repricing gap table for positions relevant to interest rate risk for each shock scenario and currency. In the table, automatic interest rate options have to be separated, while behavioral options have to be considered together with the underlying product. For fixed rate instruments, cash flows should be slotted according to their actual maturity, while for floating rate products, the spread and the reference rate components of the interest cash flow should be shown separately in the table according to the repricing date.

Institutions must separate demand deposits into stable and non-stable segments, which must be estimated on the basis of a historical data set of at least 10 years. Within the stable portfolio, the core deposit portfolio must be determined, which will not be repriced even in the event of a significant change in interest rates. The core segment must be adjusted by a scenario-dependent multiplier, as well. In addition, the draft RTS sets upper limits on the ratio of core deposits to total deposits and their maturity slotting.

As for the prepayment of fixed-rate loans, the conditional annual prepayment rates in the baseline scenario for each product segment shall be estimated on the basis of the current yield curve, based on a historical method, and the corresponding multiplier shall be applied to the estimated rates. Based on the estimated annual prepayment rates, the expected prepaid and contractual cash flows can be slotted into the appropriate repricing buckets. A similar approach should be followed for retail time deposits with a fixed interest rate risk subject to redemption risk.

As a simplification, banks may classify products with behavioral options in the overnight bucket if these exposures do not reach 2% of the total interest-sensitive assets. Such instruments, which are not mentioned above, may be non-performing loans or credit facilities providing a fixed interest rate loan.

EVE sensitivity calculation

When calculating EVE impacts, cash flows should be discounted based on yield curves under different scenarios, assuming a run-off portfolio. In the calculation of EVE, commercial margins can be filtered out for interest rates, but the methodology must be consistent, the risk-free interest rate must be identified in each case and the decision must be reported to the supervisor.

When discounting, the mid-point of the repricing buckets must be taken into account and the discount factors must be calculated using continuously compounded interest rates. The EVE impact is the difference between the EVE calculated in each scenario and the baseline scenario, plus the change in EVE for the automatic interest rate options. To calculate the latter, a 25% increase is assumed in the implied volatility of the option.

Calculation of NII sensitivity

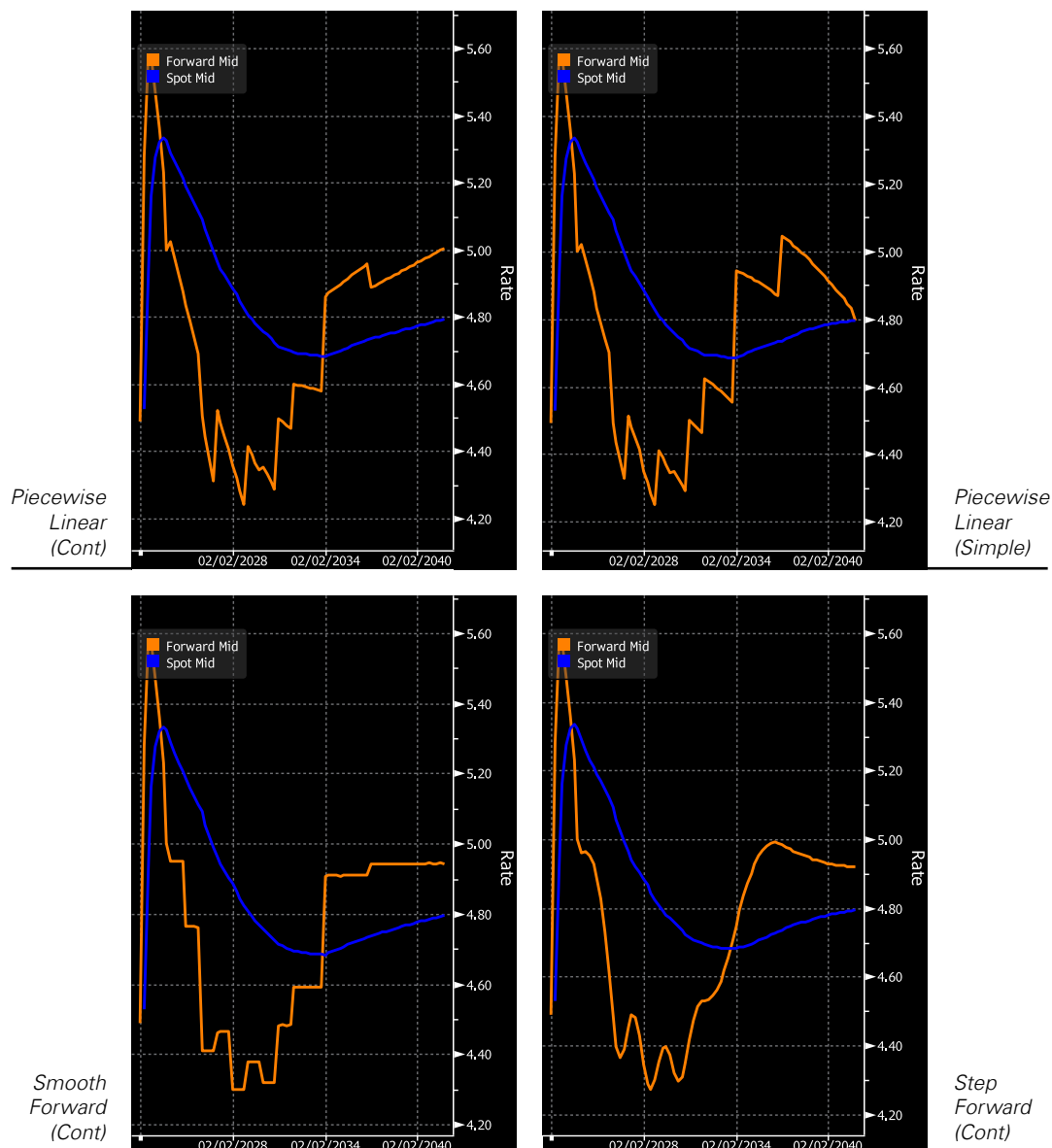
In the case of the calculation of NII, unlike EVE, the components of the commercial margin and other spreads of interest must also be included in the repricing table. In calculating the NII effect, a breakdown based on the maturity of the reference yield on floating rate instruments is added to the gap table classification.

When calculating NII, at a one-year time horizon, the interest cash flows which are already fixed, must be summed up until the repricing or maturity date. For summing up variable interest cashflows, institutions should take into account the risk-free interest rate projected for the required scenarios and the forecasted commercial margins. If there is a liquid market for the instrument, the observed margins will be relevant, otherwise the weighted average of the observed margins in the previous year will be taken into account according to segmentation criteria.

The cash flows of automatic options must be taken into account as an add-on. Instruments that can be called within the NII calculation period should be valued on the basis of expected payouts for each scenario, assuming rollover. For automatic options maturing beyond the time horizon of the NII calculation with fair value measurement, a 25% increase in implied volatility is assumed, similarly to the EVE calculation.

Basis risk will also be part of the total NII impact, for which, transactions have to be differentiated according to their reference rate (overnight, 1, 3, 6 or 12 months). Institutions will identify two yield curve scenarios in which yields diverge or converge relative to overnight rates ("widening" / "tightening"). Of the two scenarios, the less favorable NII change should be added to the total NII effect.

The calculation of forward interest rates will play an important role in calculating NII sensitivity, especially for positions that include options. Accordingly, institutions should ensure that the calculation methodology is applied appropriately and consistently. Figure 2 presents four possible forward interest calculation method through the example of a yield curve.



The simplified methodology

The simplified method offers less resource-intensive methods for institutions. The ratio of core deposits is set at supervisory values and the slotting of cash flows based on maturity is also prescribed. In the case of automatic interest rate options, instead of increasing implicit volatility, it is sufficient to shock the payouts calculated in the baseline scenario. For the NII calculation, over its time horizon, it is sufficient to use average interest rates by product group to summarize the fixed interest rates, and simplifications can also be used to forecast the floating component of interest rates.

Draft RTS on supervisory outlier test

In another draft RTS issued by the EBA, the details of the supervisory outlier test were elaborated.

In the outlier test, supervisors require banks to calculate the level of interest rate risk on the basis of a uniform methodology and on a regular basis.

If the sensitivity of the economic value of capital (EVE) to any shock scenario exceeds 15% of the tier 1 capital (T1), the supervisory authority must be notified which may apply measures in terms of interest rate risk management. Requirements are not expected to change significantly, but the new requirements of the standard approach need to be taken into account, with the interest rate floor starting at -150 basis points instead of the previous -100 basis points and reaching zero only at 50 years instead of 20 years. Another change is that positive changes in the currencies participating in ERM II can be taken into account with a 80% weight instead of 50% when calculating the total sensitivity.

A novelty is that an outlier test is also expected for NII, but its exact form has not yet been decided. The draft now outlined two options for the threshold. One, like measuring EVE, would tie the change in NII to a certain percentage of the core capital and set the threshold accordingly. The EBA would determine this value in such a way that, according to its impact study, the same proportion of banks would exceed the threshold as in the case of the 15% EVE threshold. According to the impact study, this value would be -2.5%, if the earnings effect of instruments with fair value measurement were taken into account, it would be -3%.

Another possible solution would be for banks to take into account their administrative costs and the quotient of NII and operating income. This would mean that the part of the administrative costs that is associated with net interest income would be deducted from it.

$$\frac{NII_{\text{shock}} - \alpha * \text{Administrative expenses}}{NII_{\text{baseline}} - \alpha * \text{Administrative expenses}} - 1 < \text{Threshold, where } \alpha = \frac{NII_{\text{last year}}}{\text{Operating income}}$$

The threshold would thus be the percentage change in the adjusted NII that is calculated in the shock scenario compared to the value calculated in the baseline scenario. According to the impact study, the recommended threshold would be -30%, which would be -35% if instruments with fair value measurement were taken into account.

As mentioned above, in the sensitivity analysis of net interest income, the final RTS may take into account the results of instruments with fair value measurement, as well as any income, such as the part of the net fee and commission income, that is sensitive to changes in interest rates. It is opposed to the suggestion that different accounting standards would adversely affect certain banks. According to the EBA, commercial interest margins should also be taken into account when measuring NII. In its impact study, the EBA highlights that for measuring NII, a one-year time horizon yields more reliable results due to better data quality and lower computational complexities. The study found that taking fair value into account does not make a significant difference when measuring earnings effects.

Draft ITSs of EBA in relation to IRRBB

The [ITS draft](#) issued by EBA in November 2021, will support uniform European reporting requirements for interest rate risk. Based on the draft, institutions shall disclose the capital and earnings effects of the six yield curve scenarios identified as part of the supervisory benchmark test. In addition, on the basis of the internal measurement system, institutions shall disclose qualitative information about the assumptions underlying their IRRBB exposures, the details of calculations and their applied risk management tools and strategies.

Guidelines on credit spread risk management and internal systems

In addition to the RTSs, the CRD also required the EBA to develop interest rate risk guidelines detailing the criteria for identifying, managing and mitigating interest rate risk and its requirements for internal systems.

The draft largely carries on the general requirements for IRRBBs regarding risk management methods, frameworks and measurement methods. What is new, however, is that, in addition to the IRRBB, the draft guidelines elaborate the topic of Credit Spread Risk in the Banking Book (CSRBB), concerning its definition and the possible measurement methods. Within the CSRBB, its measurement focuses on two components of the interest rate. One is a market credit spread determined by a group of debtors, which does not include their idiosyncratic, i.e. individual risk that depends on their sector, geographical location or the type of the underlying instrument (e.g. bond or derivative). The other component of the CSRBB is the market liquidity spread which is determined by the dynamics of the demand and supply defined by market participants, which may largely depend on maturity, for instance. However, the guidelines would allow the individual risk of debtors to be taken into account when measuring CSRBB, provided that this ensures the risk measurement to be more conservative.

Based on banks' feedbacks to the EBA, the majority of assets exposed to credit spread risk are assets with fair value measurement, such as corporate bonds. A transaction can only be excluded from the scope of the CSRBB if it is documented that it is not subject to such a risk, however, the credit spread risk of instruments with fair value measurement should always be taken into account. Institutions should define CSRBB-related risk appetite as a measure of the tolerable change in EVE and NII.

In addition, the draft specifies what constitutes to be an inadequate internal measurement system, in which case local supervisors may require institutions to use the standard method. An internal measurement system is inadequate if it does not identify and measure all material elements of interest rate risk (gap, basis and option risk) in a sufficiently robust and economically justifiable manner. An internal system should also be considered inadequate if the relevant parameters are not properly calibrated, back-tested, documented, and regularly reviewed.

Summary

The EBA's proposals will bring a number of changes to the current framework that will require a review of current risk management processes and systems. Banks are expected to improve on current solutions in a number of areas. The required computation and data will increase, as it will be necessary to accurately forecast capital and interest cash flows, to properly calculate the forward interest rate projection, and to evaluate embedded options under several scenarios. There is also an increasing emphasis on modeling and parameter estimation, especially for demand deposits, loan prepayments, basis risk scenarios and commercial margins. Validation of methodologies is also becoming more important due to the complexity and significant role of models and calculations. This makes it necessary to get prepared for stricter supervisory controls due to more specific requirements and a higher level of legislation directly effective in the EU.

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