

# Financial Risk & Regulation

## Banking book interest rate risk – increasing supervisory attention, the importance of risk management

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Recently experienced high volatility in the interbank interest rates and government security yields, which is also expected in the future, drew attention to the importance of managing banking book interest risk. Regulators such as the MNB, the EBA, and European lawmakers also released the importance of this aspect of risk management. This newsletter will summarize the recent MNB article, the current state of EBA tasks, and the modeling challenges for the banks.

### The MNB draws attention to the importance of interest rate risk

In recent years MNB focused significantly on supervisory examination of the banking book interest rate risk. The 2020 ICAAP handbook introduced the non-maturing deposit benchmark model, which we presented in the [2020 February Newsletter](#), and in the 2021 update introduced its recommendations for the benchmark capital adequacy calculations, we covered this in the [2021 February Newsletter](#).

In this topic fits well the article recently published on [portfolio.hu](#) and the [MNB website](#), which highlights the recent supervisory experiences. The current importance of this topic is increased by the jump in the volatility of government security yields during the economic recession caused by the COVID-19 pandemic. A change in monetary policy is increasingly likely.

The amendments to EU Directive CRD (CRD5) were implemented on the 26th of December in 2020 in the law concerning credit institutions (Hpt.). Regarding the banking book interest rate risk, the new regulation (Hpt. 177. § (12)) draws stricter rules for credit institutions. Furthermore, supervisory authorities, including MNB will have more room for intervention.

The MNB expects banks to regularly calculate the sensitivity of the economic value of equity-based on the EBA guidelines and the ICAAP handbook. If this exceeds the 15% of tier one capital (T1), banks must notify the MNB, which can intervene in the banks' management of interest rate risk.

In practice, we can observe several methods for interest rate management. The desire for a closed position is widespread, but in this current interest rate environment, many banks follow a different strategy. On the liability side, banks do not have room to decrease interest rates on deposits – since they cannot or hardly can utilize negative interest rates – they prefer investing in long-term fix interest government bonds to realize a larger interest rate profit. This tendency increases the open interest rate positions, which can endanger banks' liquidity and capital position if it is not hedged. The MNB survey further shows that because of the long-term repricing position, Hungarian banks are most sensitive to the parallel upward shocks from the 6 prescribed shocks (Figure 1). Furthermore, because of the low interest rate environment banks have to prepare for a possible increase in interest rates, which is increasingly likely with the surging inflation (5,1% in April 2021).

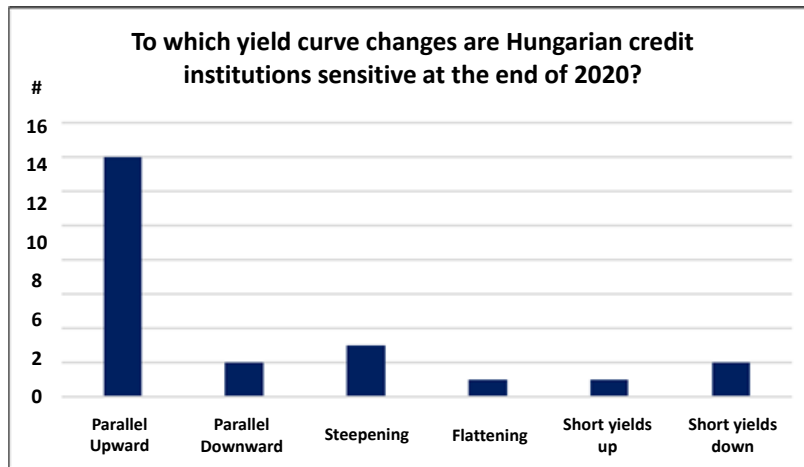


Figure 1 (Source: MNB)

Regarding the interest rate shocks mentioned above, no bank exceeded the old limit. However, 3 credit institutions exceeded the new one (Figure 2.)

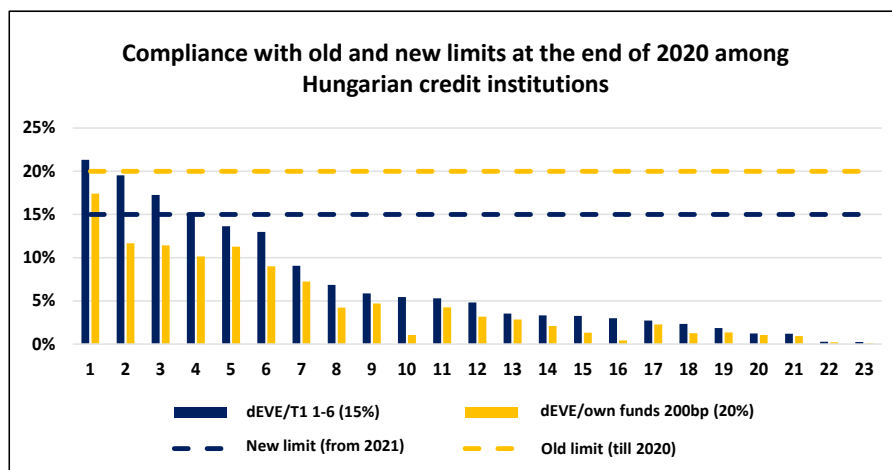


Figure 2 (Source: MNB)

## A bit late, but the EBA is working on the detailed regulations regarding interest rate risk

The CRD V (EU directive 2019/878) gave three mandates to the EBA to work out the interest rate risk regulations, which we mentioned in the [August 2019 Newsletter](#). The original deadline for the submission of the EBA deliveries according to CRD, was the 28th of June 2020, however, the [EBA communication on 12 June 2020](#) specified that the expected release date will be March 2022.

Based on current information the EBA is working on the implementation regarding the main topics mandated by CRD. Aside from the highlighted topics, the EBA works have to clarify the commercial profit margins regarding own capital, dynamic or static balance sheet assumptions.

## NII standard approach

The basis for the approach is the Basel consultation material. However, it is not clarified yet whether it would include the effect on impairments and market price changes, aside from the sensitivity of the income-based indicator, the Net Interest Income (NII). According to market participants, overlap with the present value calculations may arise, and the shocked market interest rate calculation methodology is not clarified yet. The planned QIS will have an important role in the design and calibration of the standard approach. Market participants highlighted that the criticism made during the Basel consultation regarding the NII methodology is still relevant, and the Basel Committee only published pure present value-based guidelines, without the income-based methodology.

## Supervisory income sensitivity test

The EBA is working on the design of the supervisory income sensitivity tests, which is hindered by the fact that no such statutory tests have previously been used in any country. The approach during the design must be thorough to cover the sub-risks, such as basis risk, gap risk, and optional risk. It is important from both the supervisory and banking sides that the test could be calculated with the already existing methodology. This includes the NII standard approach which is under design, and the already existing internal methodologies and practices.

## Design of credit spread risk guidelines

The credit spread risk (Credit Spread Risk in the Banking Book; CSRBB) appeared as a new element in the regulation, and the current EBA guideline (EBA/GL/2018/02) only covered it superficially. During the design, it is very important to define the affected positions and risks accurately. The covered risks cannot be overlapped with other IRRBB sub-risks or with elements handled in the credit risk regime. Based on this, idiosyncratic credit spread, credit spread, and market liquidity spread seem to be key concepts, however, the clarification is still in progress.

Banks highlighted that currently there are a lot of risk measurement approaches in practice, and it is important to preserve methodological freedom. There are multiple approaches regarding risk management solutions in practice too. Regarding the affected positions, multiple banks highlighted that positions with only a market price should be placed under CSRBB. Furthermore, positions held till maturity should be filtered out from this so that risk management and business contents could be in line with each other.

As of the nature of the positions, risks and, market practices the QIS designed by the EBA will have an important role not only through the quantitative effects, but also through the qualitative aspects because of the examination of the sectoral practices. This information must be taken into account by the EBA during the design of the guidelines.

## Design of impact studies

Due to the reason mentioned in the previous points, the EBA plans to examine the effect of planned measures as part of an impact study (Quantitative Impact Study, QIS). The impact study is both outstandingly important and resource-intensive for all participants as there were no such European-level impact studies before in these areas. Due to this, there will be challenges regarding the quality and format of the data provided by the institutions and the processing of the data by the EBA.

## Sectoral Challenges

### Data quality, computing capacity

The review of the interest rate positions and calculations of sensitivity requires several inputs from the banks. The prerequisite for this is the ability of banks to get the relevant information from databases, however, this could be time- and resource-intensive for banks which do not have reliable data warehouses and data quality. After a certain size, simple calculations are not sufficient for IRRBB calculations, such as the usage of duration and repricing gaps. In this case, the simulation of cashflows is required, where optional effects can be taken into account, such as early repayment or special interest rates.

### Loans with an interest rate floor

Several loans with variable interest rates have an inbuilt interest rate floor, this protects the banks because even in a low-interest environment there are limited opportunities for acquiring liabilities with negative interest rates. However, from a modeling perspective, these products pose a challenge, as in a low interest rate environment or in case of downwards shocks these loans behave as fixed interest rate loans, and during upward shocks behave as variable interest rate loans. This requires a scenario-dependent interest rate modeling approach.

### Non-maturing deposits models

The supervisory authorities also drew attention to modeling risk, especially regarding non-maturing deposits (NMD). In the case of NMDs banks have to model the conditional cashflows, which can be done if they also integrate the behavior of clients in their models. A challenge is to calculate how specific interest rate shocks affect the behavior of clients.

In the most recent EBA guidelines core deposits must be identified, whose pricing would not change after an interest rate shock. Furthermore, during the modeling small and big depositors have to be differentiated, and it must be taken into account whether the deposit serves a transactional purpose, thus whether the level of interest rate affects the behavior of the client.

The [2017 ECB stress test](#) shows, that during interest rate increases retail deposits are “sticky”, meaning the depositors will not break their deposits. However, this assumption must be reevaluated. According to the ECB, most banks in the EU only assume negative interest rate shocks and do not model the effects of increasing interest rates in the models in which they integrate the behavior of depositors.

## Early repayment models

Modeling early repayments especially relevant in the case of fixed interest rate loans during decreasing interest rates, since the debtor can acquire new loans with lower interest rates in the market. It is also important to model early repayments caused by other reasons such as inheritance or change in personal circumstances. In these cases, the bank will lose the remaining interest income in return for the early repayment fee. Increasing interest rates in the case of variable interest rate loans could cause early repayment. The [2017 ECB stress test](#) shows that in the case of loans for which banks apply the early repayment model, the proportion of fixed interest rate mortgages are the largest (54%), while the variable interest loans have a proportion of 18%.

## Credit spread risk management

The credit spread risk management on the Hungarian market mostly relevant in case of mortgages and bonds issued as part of the Bond Funding for Growth Scheme (BGS). The increase in credit spread during a stress period is possible because of the increase in credit risk for banks and corporations, and because of the decrease in market liquidity.

Mortgage bonds in the Hungarian market are issued by the mortgage banks of retail banks, for which mortgages are the collateral. Banks manage their interest rate risks through interest rate swaps and by issuing mortgage bonds. The holding of mortgage bonds is important due to regulatory requirements. The Mortgage Funding Adequacy Ratio (JMM) must exceed 25%, which means that 25% of the mortgage loan portfolio must be covered by mortgage bonds.

The Basel IRRBB standard refers to the change in market credit and liquidity spreads under the credit spread risks, which it places in the system shown in Figure 3.

Items at Amortised Cost		Items at Fair Value (Mark-to-Market)		
		Sector	Geography	Instrument
Administered rate	Credit margin	Idiosyncratic Credit Spread		
Funding interest rate	Funding margin	Market Credit spread		
	Reference interest rate	Market Liquidity Spread		
		Market Duration Spread		
		"Risk-free" Rate		
e.g. Consumer loans	e.g. Corporate loans	e.g. Bonds/Interest-earning Securities		

■ General interest Rate RBB  
■ Credit Spread RBB

Figure 3: (Source: [BCBS 368 standard](#))

## Interest rate risk modeling of non-performing exposures

If the non-performing loans reach 2% in the bank's portfolio, then the exposures must be modelled separately from the interest rate risk point of view, based on the relevant EBA guideline. It may be worthwhile for banks to link and apply this to existing IFRS 9 impairment models.

## Determination of commercial margins

Taking commercial margins and other margins on interest payments into account in cash flow modeling is the bank's decision. However, it is conditional on that banks notify the supervisor and the interest rate management in the banks is in line with this. If the bank excludes the margins from the calculations, then it must identify the risk-free interest rate. This could be a challenge in the case of fixed interest rate products and in the case of products that have an interest rate determined by the bank only.

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