The Internal Capital Adequacy Assessment Process (ICAAP),

the Internal Liquidity Adequacy Assessment Process

(ILAAP)

and their supervisory review process

GUIDELINES FOR SUPERVISED INSTITUTIONS

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**Acronyms**

|  |  |  |
| --- | --- | --- |
| AIRB | Advanced Internal Ratings Based Approach  | belső minősítésen alapuló módszer fejlett változata (PD, LGD, CCF becslés) |
| AMA | Advanced Measurement Approach | fejlett mérési módszer (működési kockázat) |
| ALCO | Asset Liability Committee  | Eszköz-Forrás bizottság a likviditási kockázat menedzselésére |
| ASA | Alternative Standardised Approach | alternatív sztenderd módszer (működési kockázat) |
| AVA | Additional Valuation Adjustments | kiegészítő értékelési korrekció |
| BCM | Business Continuity Management | üzletmenet-folytonosság menedzsment |
| BIA | Basic Indicator Approach | alapmutató módszer (működési kockázat) |
| BSZT |  | 2007. évi CXXXVIII. törvény a befektetési vállalkozásokról és az árutőzsdei szolgáltatókról, valamint az általuk végezhető tevékenységek szabályairól |
| CCF | Credit Conversion Factor | (hitel) egyenértékesítési (konverziós) tényező |
| CEBS | Committee of European Banking Supervisors | Európai Bankfelügyeleti Bizottság |
| CET1 | Common Equity Tier 1 | elsődleges alapvető tőke (részletesen lsd. CRR Második rész: Szavatoló tőke fejezet) |
| CCP | Central Counterpary | elszámolóház |
| CRCU | Credit Risk Control Unit | hitelkockázati kontroll egység |
| CRD | Capital Requirement Directives | 2006/48/EC (amending Directive 2000/12) and 2006/49/EC (amending Directive 93/6) |
| CRD IV |  | Directive 2013/36/EU of the European Parliament and of the Council on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC |
| CRR | Capital Requirement Regulation | Regulation (EU) No 575/2013 of the European Parliament and of the Council on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012 |
| CRO | Chief Risk Officer | kockázati vezető |
| CVA | Credit Valuation Adjustment | hitelértékelési korrekció |
| DMM |  | devizafinanszírozás megfelelési mutató |
| DVP | Delivery Versus Payment  | szállítás fizetés ellenében |
| EAD | Exposure At Default | nemteljesítés bekövetkezésekor a kockázati kitettség értéke |
| EBA | European Banking Authority | Európai Bankfelügyeleti Hatóság |
| EL | Expected Loss | várt veszteség |
| EGT |  | Európai Gazdasági Térség |
| FIRB | Foundation Internal Ratings Based Approach | belső minősítésen alapuló módszer alap változata (PD becslés) |
| HPT |  | 2013. évi CCXXXVII. törvény a hitelintézetekről és a pénzügyi vállalkozásokról |
| ICAAP  | Internal Capital Adequacy Assessment Process | a tőkemegfelelés belső értékelési folyamata |
| IG | Intergiro |  |
| ILAAP | Internal Liquidity Adequacy Assessment Process | likviditás megfelelőségének belső értékelési folyamata |
| IRB | Internal Rating Based Approach | belső minősítésen alapuló módszer |
| IRRBB | Interest Rate In The Banking Book | banki könyv kamatlábkockázat |
| JRAD | Joint Risk Assessment and Decision | közös kockázatértékelés és együttes döntés |
| KRI | Key Risk Indicator | kulcskockázati mutató |
| LCP | Liquidity Contingency Plan | likviditási üzletfolytonossági terv |
| LCR | Liquidity Coverage Ratio | likviditás fedezeti követelmény |
| LGD | Loss Given Default | nemteljesítés esetén a veszteség átlagos mértéke |
| LTV | Loan To Value | hitel-fedezet arány |
| MNB |  | Magyar Nemzeti Bank |
| NFSR | Net Stabil Funding Ratio | nettó stabil forrás ellátottsági mutató  |
| OCR | Overall Capital Requirement | teljes tőkekövetelményt |
| OTC | Over The Counter | másodlagos, más néven tőzsdén kívüli vagy származtatott értékpapírpiac |
| PD | Probability of Default | a nemteljesítés valószínűsége |
| PIT | Point-In-Time | PD modell típus, amely a gazdasági ciklus pillanatnyi helyzetét figyelembe véve ad előrejelzést a PD-re |
| SD | Settlement Day | teljesítési határidő |
| SL | Specialized Lending | speciális hitelezés |
| SREP | Supervisory Review and Evaluation Process | Felügyeleti felülvizsgálati és értékelési folyamat |
| RVP | Receive versus Payment | kézhez vétel fizetés ellenében |
| T1 | Tier 1 | alapvető tőke (részletesen lsd. CRR Második rész: Szavatoló tőke fejezet) |
| T2 | Tier 2 | járulékos tőke (részletesen lsd. CRR Második rész: Szavatoló tőke fejezet) |
| TSA | Standardised Approach | sztenderd módszer (működési kockázat) |
| TREA | Total Risk Exposure Amount | teljes kockázati kitettség érték |
| TSCR | Total SREP Capital Requirement | SREP tőkekövetelmény |
| TSCR ratio |  | teljes SREP tőkemutató |
| TTC | Through-The-Cycle | PD modell típus, amelynél a PD a hosszú távú trendeket ragadja meg, egy gazdasági ciklusra jellemző átlagos értéket ad vissza |
| UL | Unexpected Loss | nem várt veszteség |
| VAR | Value at Risk | kockáztatott érték |
| VIR |  | vezetői információs rendszer |

# Introduction

The supervisory authority first published its methodological guidelines on the Internal Capital Adequacy Assessment Process (ICAAP) and its Supervisory Review Process (SREP) for institutions governed by the CRD in 2008, which were subsequently regularly reviewed in accordance with legislative changes and practical experience. The European-level regulations serving as the basis of the guidelines were substantially amended in 2014 with the introduction of CRD IV and CRR, therefore we radically transformed the structure of our guidelines and have compiled a guide encompassing both ICAAP, ILAAP[[1]](#footnote-1) and their supervisory review process. The presentation of the supervisory review process was taken from the earlier SREP Guidelines, and unified ICAAP-ILAAP-SREP Guidelines are now being published. A key criterion in the course of the transformation was to ensure that the supervisory requirement and guidance continued to effectively support the work of institutions.

The Guidelines contain the material and temporal scope of the review process, present the fundamental review principles and address the levels of the supervisory review process. It discusses the elements of the ICAAP and ILAAP and provides guidance on the interpretation of provisions. Furthermore, the document sets out the principles and methods that the Magyar Nemzeti Bank (hereinafter: the MNB or the Supervisory Authority), proceeding within its supervisory function, intends to apply for assessing the capital and liquidity adequacy calculations of institutions.[[2]](#footnote-2)

These Guidelines primarily set out basic principles, as the regulatory requirements regarding internal capital and liquidity adequacy calculation depend on the type, size and service complexity of the institution concerned. As no standardised method equally applicable to all institutions can be provided, the MNB has developed requirements for specific institutions with a view to the principle of proportionality.

## The internal capital adequacy assessment process (ICAAP)

Effective domestic and EU regulations on capital adequacy assessment require all credit institutions and investment firms (hereinafter: institutions) to develop an internal capital adequacy assessment procedure. The purpose of this procedure is to assess, based on the institution’s own calculations, the adequate capital which institutions consider necessary to cover the risks they take and which they are exposed to.[[3]](#footnote-3)Thus the internal capital adequacy assessment process is designed to ensure that the institution

* operates a sufficiently sophisticated risk management system that adequately identifies, measures, summarizes and monitors all materials risks
* has a sufficient amount of capital to cover these exposures as calculated based on the institution’s internal rules.

The internal capital adequacy assessment process **applies to all institutions that are subject to the CRD**. The ICAAP has been mandatory since the launch of minimum capital requirement calculation as per the CRD, i.e. since 1 January 2008. The primary responsibility for the proper implementation and quality of the internal capital adequacy assessment process rests with the top management of the institution. This responsibility is also there if the ICAAP is determined at group level.

The internal capital adequacy assessment process includes the following areas[[4]](#footnote-4):

* **comprehensive risk analysis** which identifies and assesses the material risks of the institution;
* **a valid capital analysis** which quantifies the extent of risks and determines the required level of risk capital;
* adequate oversight and governance by the board of directors and top management and their involvement in capital adequacy processes;
* **establishment of an adequate monitoring and reporting structure** by which the institution is able to present regularly its risk profile and capital position;
* elaboration of adequate **internal audit mechanisms**, provision for independent review.

Two pivotal terms related to ICAAP in the guidelines are **capital** and **risk**. Existing regulations basically require capital adequacy at institutions for covering unexpected losses, with adequate capital also functioning as permanent collateral that enables the institution to operate prudently in any regular business and economic situation.[[5]](#footnote-5) Accordingly, capital requirement refers to adequate capital that corresponds to the risks quantified by a particular method and the size of potential losses that may result from these risks.

Under the ICAAP in Pillar 2, the amount of economically needed capital is determined. Economically needed capital captures the risks deriving from the institution’s business activities through the statistical and/or probability estimate of potential future losses at a level of likelihood determined by the institution and for a certain period (usually one year).

When calculating capital adequacy, institutions could formerly also compare the aggregate economically needed capital that covered all risk types to resource elements (e.g. available capital) that were not part of regulatory (Pillar 1) capital by definition (such as future earnings). This will no longer be taken into account in the supervisory review processes conducted from 2015 based on the EBA's guidelines on the uniform supervisory review process. **From 1 January 2015 onwards, the MNB will only accept regulatory (Pillar 1) capital as capital used for covering risks when calculating SREP capital adequacy.** In accordance with the referenced guidelines, another key change is that **diversification among risks will no longer be taken into account** when defining the Pillar 2 capital requirement.

Beyond the regulatory capital requirements captured in Pillar 1, credit institutions and investment enterprises (hereinafter institutions) are also required to calculate the adequate capital under the framework of Pillar 2 along their internal procedures. Due to the differences in approach, the two calculation methodologies usually deviate from each other. As Pillar 2 requires institutions to calculate the capital requirement for all relevant risks, the figure resulting from internal capital calculation usually exceeds the regulatory minimum capital, presenting and additional capital requirement in Pillar 2. Institutions are expected to define the allocated capital requirement amount for each risk within Pillar 2. The internal capital requirement calculation may yield a lower capital requirement in Pillar 2 for Pillar 1 risks; in this case, the regulatory capital corresponds to the minimum Pillar 2 capital requirement. The MNB assesses the need for additional capital requirement in Pillar 2 for each risk in the context of the supervisory review process.

However, the purpose of Pillar 2 capital requirement calculations is not only to make the institution set up additional capital on top of the regulatory minimum level. What the MNB considers more important is the motivating effect which spurs the institution to apply more effective risk management techniques and internal procedures for better detecting, measuring and managing its exposures. Therefore, embedded into day-to-day processes, the internal capital adequacy assessment process can greatly contribute to the prudent operation of the institution.

## Supervisory requirements for devising the ICAAP

### Fundamental principles

Below we present the general ICAAP principles elaborated in CEBS recommendation GL 03[[6]](#footnote-6), which must serve as a guideline for all institutions for establishing their own ICAAP. Some of the fundamental principles were supplemented based on the experience drawn on by the MNB.

ICAAP 1: Every institution must have a process for assessing its capital adequacy relative to its risk profile (an ICAAP).

Every institution must have adequate corporate governance and risk management procedures, including a strategy and processes aiming to achieve and sustain a capital level that is adequate to the nature of the institution’s business activities and risks. The fulfilment of this principle can be examined both at group and individual company level.

ICAAP 2: The ICAAP is the responsibility of the institution.

The institution is responsible for devising an adequate ICAAP consistent with its risk profile and operating environment, and for internally defining its capital targets. The ICAAP should be tailored to the institution’s circumstances and needs, and it should use the inputs and definitions that the institution uses for internal purposes. The ICAAP shall meet supervisory requirements and the institution should be able to demonstrate that it does so. The outsourcing of any portion of the ICAAP must meet CEBS standards on outsourcing.[[7]](#footnote-7)Institutions retain full responsibility for their ICAAP regardless of the degree of outsourcing, as it expresses the specific position and risk profile of the institution[[8]](#footnote-8).

If the institution is a group member and applies the parent company’s methods models, then the institution is responsible for adapting these methods and models to local circumstances and conditions, for implementing and applying them according to its own risk profile, and must certify the group methodology’s adequacy in terms of its risk profile to the MNB. Furthermore, the institution must be familiar, both comprehensively and in detail, with the group’s methodology, and must examine and annually verify the model’s feasibility prior to application.

ICAAP 3: The applied internal capital requirement calculation methods’ design should be fully specified and fully documented. The management body (both supervisory and management functions) should take responsibility for the ICAAP.

The responsibility for initiating and designing the ICAAP rests with the management body (both supervisory and management functions). The supervisory function within the management body should approve the conceptual design (at a minimum, the scope, general methodology and objectives) of the ICAAP. The details of the design (i.e. the technical concepts) are the responsibility of the management function.

The management body (both supervisory and management functions) is also responsible for integrating capital planning and capital management into the institution’s overall risk management culture and approach. The institution's ICAAP (i.e. the methodologies, assumptions and procedures) and capital policy should be formally documented, and it should be reviewed and approved at the top level (management body in the sense of both functions) of the institution

The results of the ICAAP should be reported to the management body.

**ICAAP 4: The ICAAP should form an integral part of the management process and decision-making culture of the institution.**

The ICAAP should be an integral part of institutions' management processes so as to enable the management body to assess, on an ongoing basis, the risks that are inherent in their activities and material to the institution. Depending on the complexity of activities, this could range from using the ICAAP to allocate capital to business lines, to generate expansion plans and even to having it play a role in the individual credit decision process. Yet it is also important at smaller institutions that ICAAP considerations should already appear in decision-preparation both in their business and banking operations.

**ICAAP 5: As the ICAAP is based on processes and procedures, the appropriateness of its operation should be reviewed regularly, at least once a year.**

The ICAAP should be reviewed by the institution as often as deemed necessary (but at least once a year) to ensure that risks are covered adequately and that capital coverage reflects the actual risk profile of the institution. The annual review should also cover completion of the tasks defined during the previous year’s MNB audit. The review should be essentially completed before the next supervisory review.

The ICAAP and its internal assessment process should be subject to independent internal review.

Any changes in the institution's strategic focus, business plan, operating environment or other factors that materially affect assumptions or methodologies used in the ICAAP should initiate appropriate adjustments thereto. New risks that occur in the business of the institution should be identified and incorporated into the ICAAP.

**ICAAP 6: The ICAAP should be risk-based.**

The adequacy of an institution’s capital is a function of its risk profile. Institutions should set capital targets which are consistent with their risk profile and operating environment, and this should be evidenced to the MNB. Furthermore, institutions may take other considerations into account in deciding how much capital to hold, such as external rating targets, market reputation and strategic goals.

The institution should clearly establish for which risks a quantitative measurement is warranted, and for which risks qualitative factors are dominant. In the latter case, the emphasis is on risk management and the use of risk mitigation tools.

Even institutions who apply simpler methods to measure Pillar 1 risks (credit, operational and market risks) are required to base their ICAAP and the related governance and supervisory functions on their actual risks.

**ICAAP 7: The ILAAP should be comprehensive, covering every detail.**

In the ICAAP, the institution should capture all material risks to which it is exposed to, albeit that there is no standard categorisation of risk types and definition of materiality. The institution is free to use its own terminology and definitions. The MNB requires the institution to be able to present in detail the approaches and terminology definitions it apples under the ICAAP (along with the differences compared to regulatory capital calculation methods) during the dialogue between the institution and the MNB.

The ICAAP should be comprehensive and should take into consideration all relevant risks, in particular the following:

* + Credit, operational and market risks captured under Pillar 1, including their handling in the ICAAP which is different from Pillar 1.
	+ Pillar 1 risks not sufficiently covered with simpler methods (e.g. residual risk stemming from the limited collectability of collaterals),
	+ Pillar 2 risks (interest rate risk in the banking book, concentration risk, strategic and reputation risk),
	+ Risks of external factors (regulatory, economic, business environment).

**ICAAP 8: The ICAAP should be forward-looking.**

The ICAAP should take into account the institution's strategic plans and how they relate to macroeconomic factors. The institution should develop an internal strategy for maintaining capital levels which can incorporate factors such as the expected growth of borrowings, potential sources of future capital raise, dividend policy, and any procyclical effects which can occur upon the measurement of Pillar 1 risks.

The institution should have an explicit, approved capital plan which states the institution's objectives and the time horizon for achieving those objectives, and in broad terms the capital planning process and the specification of individuals who are responsible for that process. The plan should also lay out how the institution will handle situations that call for immediate action (for example, the raising of additional capital, restriction of business, or the use of risk mitigation techniques).

**ICAAP 9: The ICAAP should be based on adequate measurement and assessment processes.**

The ICAAP should be based on the adequate measurement and assessment of risks, but there is no single correct ICAAP method. As institutions are free to choose the method they wish to apply, the MNB considers several approaches acceptable and does not necessarily require the use of complex capital calculation models. Nevertheless, based on the principle of proportionality, the MNB requires institutions pursuing complex and diverse activities to apply sufficiently advanced quantitative techniques in line with their unique and systemic. Pursuant to Section 124.§ (3) of the Credit Institutions Act and Article 77 of CRD IV, the MNB shall foster the use of internal methods among credit institutions. Large, complex institutions with extensive clientele are particularly expected by the MNB to switch to the application of the internal model when calculating the capital requirement. As the risks inherent to the institution’s operation are better reflected in the capital requirement culture related based on the internal model as compared to the standard method, if the institution uses the former in the context of its ICAAP, the MNB can also better rely on it when reviewing the ICAAP.

Certain risk elements and thus the related capital requirements may be difficult to calculate. Nevertheless, the MNB requires that these risk capital figures be determined by way of expert estimates.

It is important that institutions not rely on quantitative methods alone in the course of the ICAAP, but apply qualitative considerations and prudent management estimates regarding model inputs and outputs.

**ICAAP 10: The ICAAP should produce a reasonable outcome.**

Once the capital requirement of specific risk types has been identified, the ICAAP should produce the total economic capital requirement of the institution. This figure must be reasonable, i.e. it must be proportionate to the actual risks of the institution and it must be adequately reconcilable with the level of regulatory capital. In case a significant difference is found during the supervisory review process between the supervisor’s expectations and the institutions own capital requirement calculation, the institution should be able to justify the adequacy and comprehensive nature of the method it applied.

## The Internal Liquidity Adequacy Assessment Process (ILAAP)

CRD IV, the CRR and the Credit Institutions Act define detailed rules for managing liquidity risk. Pursuant to the requirements of the Credit Institutions Act, the credit institution must elaborate its liquidity risk profile consistently with the nature, size and complexity of its activities and must have effective rules of procedure and regulations set out in writing:

* + for measuring and managing all key sources and impacts of market risk and for managing liquidity shortages arising from short position due dates preceding long positions,
	+ the identification, measurement, management and monitoring of liquidity risk over an appropriate set of time horizons, including intra-day, tailored to business lines, currencies and legal entities of the group, including adequate allocation mechanisms of liquidity costs, benefits and risks.

With a view to fulfilling the above, the credit institution’s executive body with governing powers must, among other things, devise an adequate strategy and defined risk-bearing levels for every business line. Alternative scenarios on liquidity positions and on risk mitigating factors must be considered and the assumptions underlying decisions concerning the funding position shall be reviewed regularly by the credit institution’s executive body, where, for these purposes, alternative scenarios shall address, in particular, off-balance sheet items and other contingent liabilities, including those of other special purpose entities, in relation to which the credit institution acts as sponsor or provides material liquidity support.

Credit institutions must develop internal regulations for the identification, measurement, management and monitoring of funding positions, covering the current and projected material cash-flows in and arising from assets, liabilities, off-balance-sheet items, including contingent liabilities and the possible impact of reputational risk Credit institutions must consider different liquidity risk mitigation tools, including a system of limits and liquidity buffers in order to be able to withstand a range of different stress events and an adequately diversified funding structure and access to funding sources; these arrangements must be reviewed regularly, at least once a year. In order to deal with liquidity crises, credit institutions shall have in place contingency plans setting out adequate strategies and proper implementation measures in order to address possible liquidity shortfalls; these plans (also applied by branches established in other EEA member states) must be endorsed by the executive body with governing powers and be regularly tested and updated on the basis of the outcome of the alternative scenarios, at least annually.

The requirement set out in the Credit Institutions Act applies to all affected institutions, but the MNB, in keeping with the principle of proportionality, expects systemically important financial institutions to devise an ILAAP. The requirements of CRD IV and the CRR also apply to investment enterprises, but the MNB applies the principle of proportionality in their regard, and expects the elaboration of processes are suited to their level of complexity.

The internal liquidity adequacy assessment process includes the following areas:

* **internal analysis of the adequacy and reliability** of the indicators and key indicators pertaining to the institution’s liquidity risk management system;
* **comprehensive risk analysis** which identifies and assesses the liquidity and funding risks of the institution;
* **a valid liquidity coverage analysis** which quantifies the extent of risks and determines the required level of coverage based on the institution’s own calculations;
* adequate **oversight** and **governance** by the board of directors and **top management and** their involvement in liquidity adequacy processes;
* **establishment of an adequate monitoring and reporting structure** by which the institution is able to present regularly its liquidity risk profile and coverage;
* elaboration of adequate **internal audit mechanisms**, provision for independent review.

## Supervisory requirements for devising the ILAAP

Institutions required to carry out an ILAAP must take into account the following fundamental principles when devising their ILAAP. These fundamental principles coincide in many areas with those defined for the ICAAP.

### Fundamental principles

ILAAP 1: The ILAAP is the responsibility of the institution

ILAAP 2: The applied methods’ design should be fully specified and fully documented, and the management body (both supervisory and management functions) should take responsibility for the ILAAP.

ILAAP 3: The ILAAP should form an integral part of the management process and decision-making culture of the institution.

ILAAP 4: As the ILAAP is based on processes and procedures, the appropriateness of its operation should be reviewed regularly, at least once a year.

ILAAP 5: The ILAAP should be risk-based.

ILAAP 6: The ILAAP should be comprehensive, covering every detail.

ILAAP 7: The ILAAP is forward-looking and future-oriented.

ILAAP 8: The ILAAP should be based on adequate measurement and assessment processes.

ILAAP 9: The ILAAP should produce an acceptable outcome.

## Supervisory review and evaluation of the ICAAP and the ILAAP

According to international and Hungarian regulations, the supervisory review process (SREP – Supervisory Review and Evaluation Process) in a broad interpretation represents the control and evaluation by the MNB of the business model, corporate governance, risk profile and capital and liquidity position of institutions under Pillar 2.

The CRD IV includes provisions on the supervisory review of capital positions[[9]](#footnote-9), under the framework of which the MNB assesses whether the institution has sufficient capital based on its strategy, regulations, established processes and internal procedures to cover the risks it is taking. Furthermore, the MNB reviews the business model and material risks of the institution, examines internal governance and the compliance and reliability of and internal capital and liquidity adequacy assessment processes and checks the fulfilment of minimum requirements set out in legal provisions. Clearly the supervisory review process can only be successful if the institution presents the risk models and the internal capital calculation and internal liquidity adequacy methodology it applies both comprehensively and in detail.

In recent years the supervisory community has gradually re-evaluated the significance of Pillar 2 processes, and recognised the fact that the long-term prudent and predictable operation of institutions can be exclusively safeguarded by high-quality and extensive risk measurement and management procedures, because a high level of available own funds in itself does not guarantee total security. By offering the present Guidelines and in line with the above, the MNB wishes to emphasise that the Pillar 2 ICAAP/ILAAP review (indicated with the red dotted line on the chart below) is not an independent process, but rather an integral and exceedingly important part of institution supervision. Since the prudential approach is expected to gain further prominence, in addition to compliance with specific legal provisions, reviews concentrating on the spirit of regulation are likely to become increasingly dominant elements of supervision.

 

Drawing on the experience of past reviews, the MNB has developed rules of procedure, a consistent methodology and a well-established standpoint concerning some components of the review. In accordance with the above, the Guidelines formulate itemised requirements – among other things – for a wide range of risk types, for the consideration of external factors, for the calculation of solvency capital and for compliance with Pillar 1 minimum requirements. The more precise and more detailed formulation of expectations is hoped to improve the information and risk awareness of supervised institutions and is expected to contribute to smooth reviews.

## Internationally accepted fundamental principles and criteria to be enforced in the context of the supervisory review process

The internationally accepted principles of the supervisory review process are as follow:

* **Institutions measure their risk exposures on their own and ensure that the required levels of liquidity and capital are sustained.** Institutions must have capital calculation procedures in place that correspond with their risk profile and a strategy for maintaining their capital and liquidity levels.
* **The internal procedures of institutions are reviewed by the supervisory authority.** The MNB examines and evaluates institutions' internal capital adequacy assessment processes, risk strategy, capital plan, liquidity adequacy processes and risk management framework to determine whether they will be able to provide for the level of capital and liquidity required for prudent operations. If the institution’s capital or liquidity adequacy processes are deemed inadequate, the MNB takes measures.
* **The available capital of the institution exceeds the regulatory minimum.** The supervisory authority expects and requires institutions to operate with a capital level that exceeds the regulatory minimum. **The supervisory authority examines LCR adequacy separately, alongside the availability of sufficient, well-founded and effective liquidity coverage in accordance with the institution’s business model.**
* **The supervisory authority takes action if needed.** The MNB intervenes or takes corrective action in a timely manner if the capital adequacy, capital supply or liquidity adequacy of the institution is not deemed as being guaranteed.

Since the review extends to the overall operation and all risks of the supervised institutions – in line with the complexity of the activities conducted by financial institutions – it is a considerably complex and multifaceted review process. In an effort to unify the practice and methodology of the review on a European scale, the EBA has devised its SREP guidelines, in consultation phase until 7 October 2014. These guidelines have been drawn up based on the common European methodology defined in the document, and addresses the elements of the ICAAP and ILAAP review in the context of the SREP covering a substantial part of supervisory activities. The context of the supervisory review process — taking into consideration institutions' individual features and supervisory experiences —, the MNB will issue individual supervisory expert decisions in warranted cases. In the context of its ICAAP and ILAAP assessment, the MNB follows a holistic approach, paying heed to the presence of controls needed for managing risks and sufficient capital for covering such risks at all institutions.

## Additional general fundamental principles applied in the context of the MNB’s review processes

The abovespecified elements of the review process make up a well-founded and balanced system, built on additional general principles over and above the internationally accepted fundamental principles. These principles apply to the review process as a whole and exert a palpable impact on supervisory procedures in most areas of institution supervision.

**The principle of proportionality**

Based on the requirements and definitions of the CDR IV and the CRR, the principle of proportionality applies to the review process as a whole and to all institutions falling under its scope. It means that the extent and depth of supervisory expectations must be proportionate to the type, business model, size, activities and risk exposure of the given institution. Since a very large circle of institutions fall under the scope of CRD, both the supervised institutions and the supervisors must exhibit flexibility and discretion when applying the relevant legal provisions. In the framework of the supervisory review process — as a rule of thumb — it is the institutions that are obliged to demonstrate to the supervisors that the methodology chosen by them covers all material risks and captures them in an appropriately sophisticated way.

The practical application of the principle of proportionality means that there may be significant differences from institution to institution in the depth and horizon of the supervisory review process and in the nature of the dialogue conducted with the institution as well as in its form and intensity. In the case of institutions which pursue simple business activities and exert a weak impact on the market system, and which are characterised by a limited international and market presence, the supervisory review process can be performed simply by using a uniform method of questionnaires, case-by-case management consultations or by a supervisory review process conducted within the framework of comprehensive inspections. On the other hand, in the case of groups of institutions which have a significant market share and conduct complex activities, it is justified to carry out an independent review process that covers individual characteristic features and to maintain an intensive ICAAP-SREP dialogue.

**The primacy of risk management over capital generation and the creation of a liquidity buffer**

The main function of the Pillar 2 review process is to become fully aware of institutions’ risk processes and to identify their material risk exposures as accurately as possible. Based on the above factors, it is possible to define the capital level that can assure solvent operation and assess the institution’s liquidity position. As a result of the process, both the supervised institutions and the supervisors can acquire a precise picture about the risk profile of institutions which is unquestionably the token for well-established and efficient business and regulatory decisions.

As a consequence of the above, the main objective of the review process is to raise risk awareness and to consolidate process regulation rather than to make an additional increase in the capital requirement under Pillar 2 or the creation of an extra liquidity buffer. In the course of the review, the MNB intends to firmly apply the above principle: the prescription, alongside the requirements aimed at enhancing the standard of risk management, of additional capital coverage which is higher than the ICAAP capital requirement is considered as a consequential and involuntary measure which counterbalances the institutions’ deficiencies in risk measurement and risk management on the one hand, and also provides an incentive to the affected institution for elaborating better internal capital adequacy processes — and more generally, a better risk management framework — in the future.

**Tracking the continuous improvement of risk methods and expectations**

It is the MNB’s firm opinion that under the constantly changing financial, economic and risk conditions, the applied business processes and risk methods need continuous improvement in order to ensure the prudent operation of institutions. The supervised institutions consequently need to regularly reconsider the appropriateness of their risk management processes and capital and liquidity calculation methods. This need is highlighted by the fact that even the most advanced sectoral and regulatory methods have undergone further improvement in the recent past and are likely to follow suit in the foreseeable future as well, a tendency as a result of which supervisory expectations will also continue to become deeper and more extensive.

In the field of internal capital and liquidity adequacy procedures, the MNB expects institutions to make two adjustments: on the one hand, adjustment to the prevailing market and risk conditions, and continuous improvements in line with industry standards and regulatory expectations on the other hand. This means that the appropriateness of approaches and levels judged adequate in previous reviews is not automatically relevant in the present.

**The equality and complementary nature of the two pillars of the review**

The method of capital requirement calculation and the size of the capital necessary for prudent operation are defined by the legal regulations concerning Pillar 1 in a cogent manner, based on uniform methodology. Due to the diversity of institutions, the capital required cannot necessarily be adjusted to the actual risk exposure in the regulatory pillar[[10]](#footnote-10), therefore supervisory activity cannot be limited to examining compliance with regulatory minimum requirements. The Pillar 2 review process – among others – is aimed at ensuring that, in addition to formal legal compliance, the risk profile and capital adequacy of institutions may also be assessed from economic point of view in order to guarantee prudent operation.

The equality and complementary nature of the two pillars of capital calculation derive directly from the regulatory concept according to which the management of risks covered under Pillars 1 and 2 bear the same importance. Nevertheless, while in Pillar 1 mandatory risk measurement solutions are prescribed for a well-defined group of risks, in Pillar 2 the risk-based approach can be used by institutions for all material risks in a free or dispositive way. As a result, in Pillar 1 the MNB places emphasis on compliance with legal requirements, whereas in the course of Pillar 2 review the MNB principally focuses on the quality, reliability and completeness of internal capital calculation processes.

It is exactly the above differences that justify the independent nature of the two pillars, but they also shed light on their mutual interdependence. Risk management experience collected and methods developed in one of the two pillars (e.g. rating systems applied for credit risk models, parameter estimates) can be utilised almost without exception in the other pillar, too. Partly due to such considerations, the MNB believes that the inspection of certain Pillar 1 areas which require sophisticated methodology (e.g. validated advanced methods or the annual review of the elements of solvency capital) need to be carried out in Pillar 2 as a part of the SREP.

#  Scope of the ICAAP, the ILAAP and their supervisory review process[[11]](#footnote-11)

Articles 6-17 of the CRR defined the levels of application of compliance with capital and liquidity requirements. The stipulations laid down in the CRR with respect to compliance with liquidity requirements currently apply to a provisional period only, therefore newly issued requirements must be continuously monitored.

Articles 108-109 of the CRD define the application requirements of the ICAAP, while no statutory requirements have yet been defined for the ILAAP. Pursuant to the provisions of the Credit Institutions Act and the Investment Services Act, the supervisory review process and assessment must be conducted in accordance with Title II of Regulation (EU) No 575/2013, with the scope of the supervisory review process adapted to the level of application of the fulfilment of prudential requirements.

The ICAAP and ILAAP can take place at the level of individual institutions or at group level, in consolidated or sub-consolidated form.

The capital adequacy assessment review process of international banking groups is conducted in the form of a joint risk assessment with the participation of the competent supervisors. The central institutions of the joint assessment are the so-called supervisory colleges, in which the competent authorities performing the supervision of the given banking group jointly assess the risk exposure and control of the group members headed by the consolidating supervisor. The joint assessment is concluded by a so-called joint decision in which the supervisory college makes a decision concerning Pillar 2 capital adequacy, and at the same time, specifies the volume of regulatory capital necessary to maintain at consolidated and individual levels. As of 1 January 2014, the joint decision process includes a decision on liquidity adequacy passed by the college with common consent, making the institution’s liquidity and funding risk assessment and liquidity adequacy assessment an individual component of the review process. Section 173 of the Credit Institutions Act and Section 173/A of the Investment Services Act define the rules of the multilateral procedure.

## ICAAP and ILAAP compliance and the supervisory review process on an individual level

***Evaluating the capital requirement***

Pursuant to Article 108(1) of the CRD, the ICAAP supervisory review process must individually apply to every institution under the scope of the CRR that is required to conduct an individual ICAAP and which has not been granted exemption by the MNB from complying with the CRR’s requirements pertaining to capital.

Individual exemption from meeting capital adequacy requirements (pursuant to the supervisory authority’s decision) may be granted of the following cases:

* the institution is the subsidiary of another institution, where both the subsidiary and the institution are subject to authorisation and supervision by the member state concerned, and all the additional conditions set out in Article 7(1) of the CRR are satisfied;
* the institution is the subsidiary of a financial holding corporation or mixed financial holding corporation and the conditions set out in Article 11(1) of the CRR are satisfied;
* the institution is a parent institution in a member state where that institution is subject to authorisation and supervision by the member state concerned, and it is included in the supervision on a consolidated basis, and all the additional conditions set out in Article 7(3) of the CRR are satisfied;
* the institution is permanently affiliated to a central body and the conditions defined in Article 10 of the CRR are met.

Exemption from trying up an individual ICAAP may also be granted on the basis of Article 10 of the CRR (decision on integration).

Exemption from the consolidated application of capital requirements for groups of investment enterprises may be granted on the basis of Article 15 of the CRR.

***Assessing liquidity adequacy***

The point of departure for complying with liquidity requirements on the basis of the CRR is individual compliance. Exemption could only be provided to investment enterprises and institutions belonging to liquidity subgroups and cooperative integration. However, the MNB chose not no apply the discretion with regard to liquidity requirements granted under Article 6(4) and Articles 8 and 10 of the CRR until 1 January 2015; meeting data reporting requirement on liquidity individually is mandatory in all cases. Until the entry into force of any contrary legislative requirement, the MNB does not see the conduct of an individual ILAAP supervisory review process as necessary.

## ICAAP and ILAAP compliance and the supervisory review process on a group level

***Evaluating the capital requirement***

The internal capital requirement defined in the CRR should be applied at a consolidated level if:

* the institution is a parent undertaking in the country where it is authorised or supervised;
* the institution is subject to authorisation and consolidated supervision by a parent financial holding company or parent mixed financial holding company;
* Article 22 of the CRR (other sub-consolidated compliance) applies,
* the institution is a central body, along with its affiliated institutions.

Pursuant to Article 108 of the CRD — for groups not exempted from complying with the CRR’s capital adequacy requirements — ICAAP must also be carried out on the subconsolidated and EU-wide level of consolidation.

**Group-level ICAAP compliance and types of supervisory review process**

1. **The group’s EU-level parent undertaking has a seat in Hungary**

If the group’s EU-level credit institution parent undertaking, EU-level financial holding company and EU-level parent mixed financial holding company has a seat in Hungary, then consolidated compliance with the ICAAP represent a single consolidation level.

The supervisory review process of the ICAAP is performed by the MNB, with or without a joint decision procedure. Article 20 of the CRR must be followed in the event of joint decision-making on capital.

1. **The group’s EU-level parent undertaking has a seat in another member state**

If the group’s EU-level credit institution parent undertaking, EU-level financial holding company and EU-level parent mixed financial holding company has a seat in a country other than Hungary, then the MNB expects, in accordance with Article 108 of the CRD, that ICAAP requirements be complied with at member state level, that is, an ICAAP be conducted in consolidated form in respect of the institutions that belong to the consolidated supervision of the domestic subsidiary. The management of the domestic group shall be responsible for the quality of the ICAAP, even if the domestic group’s ICAAP is designed at EU level. In this case, the strategy, the processes and the systems elaborated at EU level should be suitable for assessing the risks of institutions that belong to the consolidated supervision of the domestic group leader. Furthermore, they should also be suitable for measuring the risks against the capital requirement that matches the risk profile and for demonstrating all this to the MNB as the host supervisor in an acceptable manner.

Domestic institution groups typically fall in this category as they have a foreign (EU-level) parent undertaking. Therefore, the ICAAP has to be applied both at EU level (consolidated for the overall group of the EU-level parent undertaking) and at member state level (for the institutions that belong to the consolidated supervision of the domestic subsidiary).

In this case, the MNB plays a dual role. On the one hand, it conducts the subconsolidated ICAAP supervisory review process, typically with no joint decision procedure, and on the other hand, ties in to the EU-level joint decision procedures in accordance with legislative requirements.

1. **Other sub-consolidated level reviews**

Still, if a subsidiary credit institution with a domestic parent undertaking has a credit institution, investment firm, financial enterprise of investment fund manager subsidiary or affiliate with a seat in a third country, the domestic subsidiary credit institution has to meet ICAAP requirements at subconsolidated level as well (without prejudice to the mandatory group-level compliance of the domestic parent undertaking), that is in consolidated form in respect of the institutions that belong the subsidiary’s consolidated supervision. The supervisory review process must therefore apply to this scenario.

1. **Credit institution linked to the central body**

The central body must fulfil the CRR’s capital requirements together with its affiliated institutions on a group level, or each institution must fulfil them individually. Pursuant to Article 108(1) of the CRD, the application level of the ICAAP must also be adjusted to the decision passed on the basis of Article 10 of the CRR. In case of central bodies with a seat in Hungary, the MNB is in charge of conducting the supervisory review process, in accordance with the abovespecified decisions.

***Assessing liquidity adequacy***

The liquidity requirements defined by the CRR must be satisfied in the aggregate in respect of the parent institution, financial holding corporation or mixed financial holding corporation for institutions supervised by an EU-level parent institution, institutions supervised by an EU-level parent financial holding company and institutions supervised by an EU-level parent mixed financial holding company.[[12]](#footnote-12)Member state-level subconsolidated application is not yet a requirement, except in the cases defined in Article 8 of the CRR, i.e. if a liquidity subgroup was established or the central integration body complies with liquidity requirement on a consolidated level.

The MNB, as the supervisory authority, deems the conduct of group-level ILAAP warranted for institutions subject to complex SREP on both the subconsolidated and EU-level, but not the conduct of individual ILAAP for the abovespecified reasons, only requiring individual liquidity adequacy. The supervisory review process of liquidity can be performed with or without a joint decision procedure. Article 21 of the CRR must be followed in the event of joint decision-making on liquidity.

# SREP grades and categories of supervised institutions

The frequency, extent, the level of details of the review and evaluation are defined by the MNB based on the size, the importance of activity, nature, the order of magnitude and complexity, business model and risks of credit institutions and investments firms with the stipulation that the review and evaluation must be performed at least once a year.

When the review methods are chosen, essentially two different categories of institutions are distinguished: large institutions and institutional groups subject to complex SREP[[13]](#footnote-13), and other — typically smaller — institutions. Three supervisory review process grades are differentiated according to the depth of the review process and to the intensity of the dialogue conducted with the institution:

* complex ICAAP and ILAAP review among institutions subject to complex SREP;
* standard ICAAP and ILAAP review for small and medium-sized institutions conducted in the course of mandatory comprehensive inspections performed every 3-5 years;
* simplified ICAAP and ILAAP review for small and medium-sized institutions conducted in the years when no mandatory comprehensive inspection is performed.

## Complex ICAAP and ILAAP review for institutions subject to complex SREP

As a main rule, the MNB regards institutions or institutional groups holding a market share of at least 5% based on their balance sheet total or with a strong or stronger than medium risk impact rating as being subject to complex SREP. These institutions are characterised by complex financial activities, significant market share, active international relations as well as the application of advanced risk management and risk measurement methods. Due to their central role which they play in financial mediation, their solvent and prudent operation may be of crucial importance from the aspect of the Hungarian financial system as a whole.

Due to the size and importance of financial institutions subject to complex SREP and because of the information asymmetries arising from their complexity and advanced institutional procedures, the MNB regards the Pillar 2 review an indispensable element of prudential supervisory policy in this particular circle of institutions. In accordance with the above, the MNB expects economic capital calculations to be carried out by using the most advanced industry standards and by applying highly sophisticated methods. Owing to the complexity of the risk profile and to the sophisticated risk measurement techniques, the uncertainty of risk exposure cannot be substantially reduced in this particular circle of institutions even if supervisory control calculations are carried out within the framework of the supervisory review process. This may result in a significant additional increase of the capital and liquidity requirement.

The activity of these institutions is evaluated within a complex review, which typically relies on an intensive dialogue, on-site presence of several weeks and regular top management and expert consultations. The participation in the review process of national supervisory authorities of other EU member states is now almost always a common practice. Their presence in the on-site inspection phase is somewhat less frequent, whereas their presence in the international supervisory colleges is now quite general in the course of joint risk assessment and decision-making.

The timing of the complex ICAAP and ILAAP review is accommodated to the home supervisory authority’s procedures, it is carried out annually with the same intensity, consequently, in this group of institutions it is conducted separately from the comprehensive inspections.

## Standard ICAAP and ILAAP review for small and medium-sized institutions

If in a given round of supervisory review an on-site comprehensive inspection is carried out, as stipulated by law, at certain members of this institutional group, then within the above process the MNB, in each and every case, also carries out the Pillar 2 review.

Due to the nature of the on-site review conducted within the framework of a comprehensive inspection, it offers a more in-depth and more detailed review than the review conducted annually by questionnaires, and it also offers an opportunity to examine information provided by questionnaires in previous years as well as to directly judge the practice of risk management and the extent of risks. Comprehensive inspections of the affected institutions are conducted every 3-5 years pursuant to the MNB Act[[14]](#footnote-14), and simplified questionnaire-based reviews are conducted annually in the interim period between comprehensive inspections.

## Simplified ICAAP and ILAAP review for small and medium-sized institutions

A simplified review using questionnaires is conducted by the MNB in institutions which are characterised by a simple structure of activity, which have a small market share and do not have a significant international activity. The risk profile of such institutions is transparent, they have a weak impact on systemic risk, and do not apply advanced methods for measuring their risks. They are typically investment firms, specialised credit institutions and co-operative credit institutions. Some smaller banks also belong to this institutional category.

In the case of small and medium-sized institutions, compliance with the requirements of the CRR and domestic laws are ensured by the MNB in Pillar 2 within the scope of a simplified process. Because of the large number of such institutions, the simplified ICAAP and ILAAP review is primarily made up of a questionnaire survey whose results are typically processed based on the information provided by the institution via mandatory date report to the MNB and on lessons drawn from past inspections. Because of the diverse structure of activities and relevant regulation, a separate questionnaire is available for credit institutions and investment firms. The questionnaires are shown in the annex.

# Steps of the ICAAP and the ILAAP

In this chapter the most important element of Pillar 2 review, namely, the process and form of complex supervisory evaluation on the internal capital and liquidity adequacy procedures, is presented in a detailed way. Procedures for standard ICAAP review described in this chapter are to be interpreted with a view to proportionality considerations, and whenever there is a difference between the practices of context and standard SREP, it is separately indicated. The simplified supervisory review process is discussed in a separate chapter.

The MNB reserves the right to make use of the opportunity to conduct a supervisory review process partially, for specific risk(s), in one or in a number of institutions at any time over and above the annual supervisory review process. In harmony with the supervisory review process principles, the annual review does not necessary mean that a comprehensive review process is carried out. In the course of the review, the impact of significant changes is to be evaluated based on talks, on-site and off-site inspections in the subject period as well as information gathered from other sources. Nevertheless, it may also occur that in the course of continuous supervision, the MNB becomes aware of a change whose nature and magnitude warrant the launch of a comprehensive review process in the given institution despite the fact that it was not planned in advance (it may even take place in between two annual SREP reviews).

The review process is to be developed and carried out prudently in coordination with the partner supervisors and with the supervised institutions in order to ensure that the stipulation of European Union and Hungarian legislation and European Union recommendations are implemented in practice.

In the following sections, the supervisory review process is presented with a special emphasis on the above-mentioned new forms of the review process and information provision by the MNB.

## Preparing the supervisory review

The relevant Hungarian and European laws stipulate that the supervisory review process is to be carried out annually. The MNB, in consultation with partner supervisors, establishes and publishes in advance the annual timetable of the supervisory evaluation for complex supervisory review processes at the end of the year preceding the year under review in order to ensure the successful and efficient implementation of the process. The ICAAP and ILAAP Review Timetable (hereinafter: Timetable) is a new element of the Pillar 2 supervisory practice, it serves the purpose of describing the supervisory expectations vis-à-vis institutions in a uniform framework for the given review round (i.e. for all the reviews of the given year). The Timetable specifies the minimum methodological requirements for the upcoming period any other special supervisory expectations valid for the given review round. The general supervisory expectations for the internal capital adequacy assessment process are defined in these Guidelines, whereas the Timetable exclusively applies to the review for the year at issue and contains period-specific characteristics and focal points. The disclosure of the Timetable enables institutions to possess proper knowledge and foresight about the MNB’s expectations and to prepare themselves for the supervisory dialogue and to carry out their internal capital calculation procedures at an appropriately high quality level.

## Requesting ICAAP/ILAAP documentation

The MNB expects institutions to submit official ICAAP and ILAAP documentation endorsed by the top management in each review round.[[15]](#footnote-15)The contents of the documentation shall be compiled based on the requirements set out in the supervisory Guidelines. The MNB expects the following with regard to the ICAAP and ILAAP documentation:

* it must contain the ICAAP and ILAAP guidelines of the institution concerned, in which the implemented approaches are presented with precise references to each and every element of the ICAAP and ILAAP documentation;
* it must contain the mandatory elements defined in the ICAAP and ILAAP Review Timetable;
* the ICAAP documentation must contain the so-called the SREP Review Form, containing the results of capital calculation according to risk types;
* the available information and documents must clearly indicate what the institution concerned considers as the elements of the ICAAP and ILAAP;
* all data and calculations annexed to the documentation must apply to the reference period specified in the ICAAP and ILAAP Review Timetable.

In the case of standard and complex supervisory review process, with regard to the on-site inspection phase as well as the bespoke nature and the intensity of the dialogue conducted with the institution may warrant the necessity to provide the MNB with further information.

## Supervisory evaluation of internal capital and liquidity adequacy

The internal and supervisory evaluations of Pillar 2 capital adequacy are closely linked together, because the MNB conducts a dialogue with each and every supervised institution in a formal manner on the extent of the economic capital requirements. The first step is to submit the ICAAP and ILAAP documentation to the MNB, whereas most of this work covers the processing and discussing of internal capital and liquidity adequacy procedures with the involvement of institutions. The work is concluded by the MNB’s formulating its final standpoint on the ICAAP and ILAAP of institutions. The intensity of the dialogue primarily depends on the complexity of the given institution’s activity and on the extent of differences between the two parties’ assessment. In actual practice it means that in the case of complex institutions with strong effect the collection and processing of the ICAAP and ILAAP documentation are followed by a customised on-site coordination of several weeks conducted by the MNB. In the case of standard ICAAP, the ICAAP carried out in the framework of a comprehensive inspection is adjusted in its extent and intensity to the procedures of comprehensive inspections.

The ICAAP-SREP dialogue is aimed at ensuring the full implementation of general supervisory expectations when economic capital is calculated. In the spirit of methodological freedom, the MNB accepts all consistent, well-founded and sufficiently conservative internal capital calculation approaches, however, in order to guarantee the consistency of the review process, it acts in line with the previously elaborated methodology. The structure of the dialogue is based on the “building blocks” approach, i.e. certain elements of the capital calculation interpreted in the broad sense (e.g. risk types, capital elements, external factors, business processes, etc.) are relatively well-defined and are mostly assessed separately from each other. Certain elements of the methodology have been established in the guidelines published by the supervisory and institution protection systems, other elements are crystallised only during the gradual development of relations among institutions as a result of practical solutions and in procedural traditions.

Procedures has not yet been defined for the ILAAP-SREP dialogue and will be devised later on as the outcome of the mutual learning process between the MNB and institutions.

## Risk mitigation measures and the determination of economic capital and liquidity excess reserve requirements

In the course of the review, parallel with the ICAAP and ILAAP evaluation, the MNB also fulfils other prudential tasks specified as parts of the supervisory review process. These tasks primarily include the following: periodically checking the advanced capital calculation methods based on validated internal qualification of Pillar 1 capital requirement calculations, carrying out inspections that are deemed outstandingly important in the review round (e.g. risky portfolios, supervisory stress tests), reviewing business operation areas to be evaluated in Pillar 2 (e.g. internal governance, remuneration policy). The expectations in relation to the above elements are specified in the Guidelines issued for supervised institutions and in the annual Timetable already mentioned above.

When the content element of the supervisory review process is completed – in each and every case during complex supervisory review processes, and performed as part of the comprehensive inspection for small and medium-sized institutions in the case of standard review – the MNB draws up an evaluation report (in the case of a standard supervisory review process it is part of a comprehensive inspection report[[16]](#footnote-16)). The evaluation report contains in detail the MNB’s findings concerning the economic capital calculation and internal capital and liquidity adequacy of the supervised institution, the required risk mitigation measures as well as the SREP capital and liquidity requirements which the MNB deems justified. The inspection report is forwarded by the MNB to the supervised institution which has the opportunity to give opinion on it with a short, agreed timeframe. The MNB takes into consideration the opinion of the institution when it formulates its final report and takes a decision on the related supervisory measures. It is, however, not in a position to take into consideration the newly proposed methodological changes and possible initiatives aimed at a partial repeated implementation of the ICAAP or ILAAP.

## Joint risk assessment and decision procedure

In the case of international banking groups which fall under the jurisdiction of several EU supervisory authorities, which are registered and operate in the European Economic Area, the final assessment of risks, the discussion of the applied methods and the concept of capital, as well as the determination of economic capital requirements and liquidity adequacy assessment are done within the framework of the international supervisory colleges. The institutional frames of international supervisory co-operation are regulated by Article 129 of the CRD and by Directive 2009/111/EC of the European Parliament and of the Council, whereas the operational functioning of supervisory colleges together with joint risk assessment and decision are set out in detail in the EBA guidelines.

In the first step of the joint risk assessment and decision (JRAD), when the evaluation phase of the ICAAP and ILAAP review is concluded, the competent national supervisors interpret the results of risk assessment, the conclusions of the reviews as well as the fulfilment of the CRD minimum requirements in a uniform structure elaborated by the international supervisory community, and then they forward such to the consolidating supervisor. In templates that serve as a basis of joint assessment the individual risk types and the individual ICAAP processes are evaluated on a scale of 1 through 4, whereas compliance with CRD requirements is presented in a descriptive manner.

As the second main step of the JRAD the content of the uniform evaluation templates are summarised and synthesised by the consolidating supervisor on the level of the total group, and based on the above, the college dialogue is led and moderated by the consolidating supervisor with the participation of each and every competent supervisor. In the course of this dialogue, every important aspect of risk assessment, ICAAP and ILAAP methodologies and CRD minimum requirements are addressed and discussed, as a result of which the risk characteristics and capital adequacy of each group member and the group as a whole are jointly assessed by the college members based on a uniform methodology in a comparative manner.

If there is full consensus among the college member, JRAD is concluded by an evaluation report produced by the consolidating supervisor with the consent of partner supervisors, a report that contains also the joint decisions on capital and liquidity adequacy. The reports prepared are then forwarded by the consolidating supervisor to all partner supervisors concerned and to the group leader institution.

If no decision is passed by the authorities within four months of the availability of the joint risk assessment in respect of the capital requirements and within one month for the liquidity buffer requirements, EBA mediation shall be sought in accordance with the relevant requirements. If mediation yields no result, the decision on the adequacy of the group’s solvency capital and additional capital requirement, and its liquidity adequacy and additional liquidity assets holding obligation (in view of the risk analysis of associated companies and opinion of partner supervisors) is taken by the consolidating supervisor, whereas in the case of local institutions decision is taken by the host supervisors.

## Conclusion of the ICAAP and ILAAP supervisory reviews, supervisory measures

As a general rule, the Pillar 2 review process is closed with a review report, SREP Review Form produced for the institution, or by the forwarding of a so-called prudential letter (if the participating parties have a consensus or an agreement). [[17]](#footnote-17)

The prudential letter is a unique tool of the MNB which states the minimum level of Pillar 2 capital adequacy relying on and referring to the content of the evaluation report.

The prudential letter contains the following:

* executive summary,
* risk assessment for the main risk categories,
* the capital deemed necessary based on the ICAAP,
* The liquidity requirement deemed necessary based on the ILAAP,
* summary on the expected risk mitigating measures, highlighting the key supervisory requirements.

Following the supervisory review process, the MNB defines the total SREP capital requirement (TSCR), the total SREP ratio (TSCR ratio) and the overall capital requirement (OCR) for the institution. Under the new regulation, the MNB also defines the type of capital that institutions must use to meet these capital requirement obligations.

The results of the ICAAP supervisory review process must be documented in the SREP Review Form. A resolution is issued if in the course of a review a condition warranting the use of supervisory measures arises (in particular, if the institution fails to meet the supervisory expectations).

The introduction of supervisory measures is justified, in particular, by the following conditions:

* the supervised institution does not accept either the risk mitigating measures deemed necessary by the MNB or the specified level of the SREP capital requirement
* the MNB believes that the capital adequacy is not guaranteed according to the legal provisions,
* the credit institution has supplied implicit support within the meaning of Article 248 of Regulation (EU) No. 575/2013 more than once, without attaining any significant risk transfer,
* the MNB establishes that the credit institution’s economic value (assets and liabilities, off-balance-sheet items, net cash flow at current value) declines by more than twenty percent of its own funds as a result of a sudden and unexpected change in interest rates as specified by it relative to its economic value calculated without the effects of the interest rate changes as a result of a sudden, unexpected 200 basis point change or the degree of change defined by the EBA.
* based on the evaluation, the recovery plan drawn up by the institution is deficient or may face obstacles in the course of implementation,
* the MNB discovers any severe deficiency in the risk identification of the institution’s internal methodology,
* the MNB finds that the internal methodology applied by the institution no longer complies with the requirements pertaining to it,
* when applying the internal model, there is a risk of the institution being unable to satisfy the requirements within the specified deadline and being unable to certify that the consequences of such non-compliance are not significant,
* the number of overruns when applying the internal model applied by the institution is indicative of the internal model’s lacking or no longer sufficient accuracy in terms of market risk.

### Cases warranting the application of measures against credit institutions

|  |  |
| --- | --- |
| **The legal grounds for the measures** | **Potential measures** |
| **Case types subject to the MNB’s discretion** |
| The financial institution or its top executive violates the Credit Institutions Act, legislation on prudent operation or other legislation governing its activities, or it fails to carry out its activities with due care, and in particular, if its own funds fail to reach the capital requirements specified in Section 79(2) for credit institutions. *(Section 184(1) of the Credit Institutions Act)* |  Each and every measure specified in Section 185(1) of the Credit Institutions Actcan be applied, and in particular, the MNB may oblige the financial institution to elaborate and execute a contingency plan as well as to prescribe an extraordinary data reporting obligation. *(Section 185(1)(a)-(h)of the Credit Institutions Act)* |
| The MNB may impose additional capital requirements for the credit institution in the following scenarios:- the credit institution fails to comply with the requirements in terms of its ICAAP, recovery plan or large exposure,- the credit institution’s capital requirement does not cover certain risks,- the measures that have already been applied are likely to fail in sufficiently improving the credit institution’s systems, procedures or strategies,- failure to meet the requirements pertaining to the method applied by the credit institution lead to an inadequate capital requirement,- the credit institution has probably underestimated its risks,- the credit institution notifies the MNB that the outcomes of its stress tests significantly exceed its capital requirement for the correlation trading portfolio.*(Section 186(1) of the Credit Institutions Act)* | The MNB may impose additional capital requirements for credit institutions. Guiding criteria for defining additional capital requirements:- the qualitative and quantitative aspects of the credit institution’s internal capital adequacy assessment process,- the adequacy of the credit institution’s governance and risk management systems, and- the findings of the supervisory review carried out at the credit institution, and- the credit institution’s systemic risk.The additional capital requirement of the credit institution may not be higher than one-and-a-half times the capital requirement specified in Section 79(2)(a). |
| **Cases calling for the mandatory application of supervisory measures** |
| The own funds of the financial institution are less than 80 percent of the capital requirement specified in Section 79(2). | All the measures defined in Section 185(1)-(3) and the exceptional measures defined in Section 189 of the Credit Institutions Act may be applied. |
| The own funds held by the credit institution are insufficient to ensure sound management and coverage of its risks, or- its governance system, corporate governance system and risk management system, ICAAP or large exposure management framework does not comply with the requirements defined in this Act or in other legislation governing prudent operation.[[18]](#footnote-18) (Section 184(7) of the Credit Institutions Act) | All the measures defined in Section 185(1)-(3) and the exceptional measures defined in Section 189 of the Credit Institutions Act may be applied. |
| The credit institution has supplied implicit support within the meaning of Article 248 of Regulation (EU) No. 575/2013 more than once, without attaining any significant risk transfer. (Section 177(10) of the Credit Institutions Act) | All the measures defined in Section 185(1)-(3) of the Credit Institutions Act. |
|  The MNB establishes, pursuant to Section 177(5)(h) of the Credit Institutions Act that the credit institution’s economic value (assets and liabilities, off-balance-sheet items, net cash flow at current value) declines by more than twenty percent of its own funds as a result of the change in interest rates as specified in Paragraph (5)(h) relative to its economic value calculated without the effects of the interest rate changes as a result of a sudden, unexpected 200 basis point change or the degree of change defined by the EBA. (Section 177(12) of the Credit Institutions Act) | All the measures defined in Section 185(1)-(3) of the Credit Institutions Act. |
| Following a review, the MNB deems that the credit institution’s recovery plan is deficient or there may be obstacles to its implementation. | Pursuant to Section 177(16) of the Credit Institutions Act, the MNB requires the credit institution to rework its recovery plan within three months. |
| The MNB discovers any severe deficiency in the risk identification of the credit institution’s internal methodology.[[19]](#footnote-19) | Pursuant to Section 179(3) of the Credit Institutions Act, the MNB- requires the credit institution to correct its methodology, or- imposes measure(s) for mitigating the consequences of the shortcoming, for instance by applying higher multiplying factors, prescribing an additional capital requirement or using any other suitable and effective tools. |
| The MNB finds that the internal methodology applied by the credit institution no longer complies with the requirements pertaining to it. | Pursuant to Section 179(4) of the Credit Institutions Act, the MNB requires the credit institution to- prove that the consequences of such non-compliance are not significant, or- draw up a plan for restoring compliance, specifying a deadline. (In this case, the credit institution amends its plan if the MNB deems that the relevant requirements can in all likelihood not be fully complied with based on the original plan, or the set deadline is not acceptable.) |
| There is a substantiated risk of the credit institution being unable to satisfy the requirements within the specified deadline and being unable to certify that the consequences of such non-compliance are not significant,  | Pursuant to Section 179(6) of the Credit Institutions Act, the MNB:- revokes the licence on the application of the internal method, - limits the licence to areas complying with the requirements or complying with the requirements within a specified deadline. |
| The number of overruns when applying the internal model applied by the credit institution is indicative of the internal model’s lacking or no longer sufficient accuracy in terms of market risk. | Pursuant to Section 179(7) of the Credit Institutions Act, the MNB:- revokes the licence on the application of the internal model, - imposes adequate measures to immediately adjust the internal model. |

### Cases warranting the application of measures against investment enterprises

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| **The legal grounds for the measures** | **Potential measures** |
| **Case types subject to the MNB’s discretion** |
| Violation of the obligations defined in the Investment Services Act. | The MNB may require the investment enterprise to satisfy an additional capital requirement. Guiding criteria for defining additional capital requirements:- the qualitative and quantitative aspects of the internal capital adequacy assessment process of the investment firm,- the adequacy of the governance and risk management systems of the investment firm, and- the results of the supervisory review carried out at the investment firm. (Section 162(10) of the Investment Services Act) |
| **Cases calling for the mandatory application of supervisory measures** |
| The investment enterprise has supplied implicit support within the meaning of Article 248 of Regulation (EU) No. 575/2013 more than once, without attaining any significant risk transfer. *(Section 162(10) of the Investment Services Act)* | The measures defined in Section 164 of the Investment Services Act. |
| If, according to the findings of the MNB’s supervisory review and evaluation, the economic value of an investment enterprise (assets and liabilities, off-balance-sheet items, net cash flow at current value) declines by more than twenty percent of its own funds as a result of the change in interest rates as specified in Paragraph (5)(h) relative to its economic value calculated without the effects of the interest rate changes as a result of a sudden, unexpected 200 basis point change or the degree of change defined by the EBA. (Section 162(12) of the Investment Services Act) | The measures defined in Section 164 of the Investment Services Act. |
| Following a review, the MNB deems that the investment enterprise’s recovery plan is deficient or there may be obstacles to its implementation. | Pursuant to Section 162(17) of the Credit Institutions Act, the MNB requires the investment enterprise to rework its recovery plan within three months. |
| The MNB discovers any severe deficiency in the risk identification of the investment enterprise’s internal methodology, | The MNB performs any of the following on the basis of Section 163/A(2) of the Investment Services Act:- requires the investment enterprise to correct its methodology, or- imposes measure(s) for mitigating the consequences of the shortcoming, for instance by applying higher multiplying factors, prescribing an additional capital requirement or using any other suitable and effective tools. |
| The MNB finds that the internal methodology applied by the investment enterprise no longer complies with the requirements pertaining to it. | The MNB requires the investment enterprise to perform the following on the basis of Section 163/A(4) of the Investment Services Act:- prove that the consequences of such non-compliance are not significant, or- draw up a plan for restoring compliance, specifying a deadline. (In this case, the investment enterprise amends its plan if the MNB deems that the relevant requirements can in all likelihood not be fully complied with based on the original plan, or the set deadline is not acceptable.) |
| There is a substantiated risk of the investment enterprise being unable to satisfy the requirements within the specified deadline and being unable to certify that the consequences of such non-compliance are not significant. | The MNB performs any of the following on the basis of Section 163/A(6) of the Investment Services Act:- revokes the licence on the application of the internal method, - limits the licence to areas complying with the requirements or complying with the requirements within a specified deadline. |
| The number of overruns when applying the internal model applied by the investment enterprise is indicative of the internal model’s lacking or no longer sufficient accuracy in terms of market risk. | The MNB performs any of the following on the basis of Section 163/A(7) of the Investment Services Act:- revokes the licence on the application of the internal model, - imposes adequate measures to immediately adjust the internal model. |

In the case of the joint risk assessment and decision which regulates the review of international groups of institutions, the ICAAP and ILAAP reviews are concluded by a joint decision on Pillar 2 capital adequacy by the consolidating supervisor issued with the consensus of the college members. The joint decision comes into force directly in the form accepted under the legal system of the given “home” supervisory country under the jurisdiction of the national supervisory authorities affected provided the joint decision is taken within four months of submitting to the supervisors the report which was drawn up by the consolidating supervisor and which contains group level risk assessment.[[20]](#footnote-20)Additionally, a prudential letter is sent by the consolidating supervisor to the top management of the banking group and by the partner supervisors concerned to the associated companies under their competence in which letter information is provided about the results of the joint risk assessment, about the prescribed minimum level of regulatory capital and about the relevant risk mitigating measures.

The delivery of a prudential letter or the issuance of a resolution represents in all cases the closing of the SREP. Nevertheless, there are two reasons which may lead to the continuations of the supervisory dialogue for the institution in the given review round. On the one hand, the ICAAP and ILAAP review report may typically describe a number of risk management and methodological expectations whose deadline for implementation may precede the commencement of the following review. Checking their implementations requires in many cases continuous communication between the MNB and the institutions in Pillar 2. On the other hand, in especially justified and exceptional cases, the institutions themselves may initiate the interim review of the prescribed capital ratio. One such typical case is when profound changes take place in the institution’s market position, business activity, risk profile or risk management system that result in considerable changes in the extent of its economic capital requirement in relation to its regulatory capital requirement.

The supervisory measure is monitored by the MNB following the closing of the annual supervisory review process, i.e. the implementation of the prescribed tasks, the maintenance of additional capital levels, the actual implementation of possible adds-on, as well as compliance with the deadlines. The monitoring of capital levels is carried out based on data provision, whereas in the implementation of other prescribed tasks is reviewed either within the next the ICAAP or ILAAP review or at a specific date set during the closing of the SREP.

## Annual assessment of the findings of the ICAAP supervisory review processes among institutions subject to complex SREP

In order to provide a more detailed information and more efficient orientation for institutions and in order to strengthen the consistency of the SREP among institutions, the MNB produces and publishes a summary report on the findings of complex ICAAP reviews following every review round. This so-called ICAAP Evaluation presents, in a general and summarising way, the results of review processes for the last year according to risk types for institutions subject to complex SREP, and also presents the relationship of Pillars 1 and 2 ICAAP and SREP capital requirements, the results of supervisory stress test, the structure of risky portfolios, the main problems experienced during the reviews as well as the general methodological considerations aimed at improving internal capital calculation processes.

# The elements of the ICAAP and their supervisory review

## Internal governance and control systems — risk management

In the course of the ICAAP supervisory review process, the MNB will evaluate the institution’s internal governance and control functions. If they are deemed poor, the MNB may deem it necessary to have the institution raise additional capital for covering its reported risks and improve its risk management standard. The following fundamental principles must be adhered to when elaborating and operating the governance and control functions; detailed regulations are set out in the Credit Institutions Act, the Investment Services Act and the MNB recommendation on the establishment and operation of internal safeguards, and the governance and control functions of financial organisations.

### Internal governance and control systems — fundamental principles

Institutions shall set up and operate internal safeguards that promote:

* the prudent, reliable and efficient operation of the organisation in compliance with legislation and internal regulations;
* the protection of the organisation’s assets and social goals, the economic interests of the clients and owners linked to the institution;
* and, thereby, the smooth and successful operation of the organisation, preserving trust in the institution.

The most important function of the internal safeguards of financial organisations is to contribute to meeting these goals in a preventive and proactive manner by identifying and managing potential problems arising in the course of operation in the earliest possible phase, already at the time of occurrence or even earlier, if possible, thereby guaranteeing their expedient and effective resolution. The internal safeguards also act as a primary filter in the protective network guaranteeing the safe operation of the system of financial intermediaries.

The internal safeguards of financial organisations consist of internal governance and internal control functions.

Internal governance is guaranteed by the financial organisation by way of setting up and operating an adequate organisational structure, organisation and system of corporate bodies and by exercising management and supervisory functions. The supervisory function includes monitoring, control and accountability tasks. Internal governance shall be interpreted as part of corporate governance the former is narrower to the extent that it does not extend to relationships with owners and other stakeholders of an institution.

Internal control functions include the risk control function, the compliance function and the internal audit function.

The internal safeguards of the financial organisation and the individual elements that form part thereof shall be set up and operated in light of the relevant statutory requirements, furthermore proportional to the particular features — including features related to organisational form —, complexities and risks of the service activities carried out by the institution.

In case of financial groups, internal safeguards must be established and operated at group-level as well. When doing so, attention shall be paid to the particular features of the provision of service and operation by groups in all sub-areas that constitute the internal safeguards (internal governance and internal control functions), and the risks inherent to the group and its institutions.

When outsourcing an activity/service or function in the context of outsourcing policy, the financial organisation shall take into account the governance and control considerations that make up the internal safeguards and treat the outsourced activity/service or function accordingly. If any activity/service or function is outsourced — in accordance with the law — it shall be ensured that the responsibility for the given area remain with the management of the financial institution.

The management of the financial institution shall regularly review the functioning of the internal safeguards and its individual subsystems and make certain that, when necessary, corrective action is taken.

### Remuneration policy

In respect of employees whose professional activities have a material impact on the institution’s risk profile, institutions must establish remuneration policies and practices that foster effective risk management. In accordance with the legal and supervisory requirements in connection with the remuneration policy, the remuneration policy must be in harmony with the business strategy, objectives, values and long-term interests of the institution. The scope of the remuneration policy extends to the executive officials of the institution, as well as to employees fulfilling the risk assumption and control functions specified in the internal regulation, and to those employees that belong to the same remuneration category as the previously mentioned employees, and whose activities has a significant effect on risk assumption by the institution. The remuneration policy must strive for harmonising the personal interests of employees with the long-term interests of the institution. In addition, the remuneration policy must also be consistent with effective and efficient risk management, foster the application thereof and it must not encourage the taking of risks that exceed the risk tolerance of the institution.

If the institution has devised its remuneration policy in line with the principle of proportionality pursuant to the Credit Institutions Act and the Investment Services Act, it must be able to dully document and justify this fact to the MNB.

### Recovery plan

The institutions must have a plan pursuant to Section 6(1)(39) of the Credit Institutions Act and Section 4(2)(94) of the Investment Services Act drawn up by them and defining the available measures to stabilise their financial position in the event of severe distress threatening their liquidity or solvency, without requiring extraordinary financial support from the state or an extraordinary liquidity loan extended by the MNB proceeding within its central bank functions. The recovery plan must be reviewed and amended as necessary following any significant change, but at least add an annual frequency. The MNB’s methodological manual specifies the requirements for drawing up and the substantive elements of the recovery plan.

In the context of the review, the MNB assesses the recovery plan based on the following criteria:

* completeness: is the plan up-to-date, have the various stress scenarios been tested, do the indicators accurately define intervention points;
* quality: straightforwardness, clarity, consistency, relevant information;
* credibility: realistic and probable scenarios, time horizon, feasibility of multiple measures.

### Risk culture

Risk is an organic part of the activities of financial organisations. Accordingly, financial organisations are expected to develop an integrated risk culture encompassing the entire institution/group, which ensures the identification, assessment and management of the arising risks in accordance with the risk appetite and risk tolerance level of the institution/group.

The primary tools for the establishment of the risk culture are the internal policies, regulations and guidelines, communication as well as employee training.

Within the organisation risk management is not exclusively the task of risk experts or the organisational unit responsible for risk management. All employees must be aware of their respective roles in connection with the management of risks arising at the institution.

The MNB finds it important to have a daily risk management practice corresponding to the risk policies, procedures and controls.

The MNB recommends the implementation of a comprehensive risk management practice that:

* covers the entire institution/group, as well as all organisational units, business areas, institutions and activities of the institution/group,
* starts out from the internal economic content of the risks,
* manages all risks relevant for the institution in addition to the credit, market, liquidity and operational risks, e.g. it covers concentration, reputation, compliance and strategic risks as well,
* allows for the summing up and breakdown of the risks bottom up, and top bottom across business areas and reporting lines, as well as for the assessment and maintenance of the risks within identical frameworks in terms of contents and methodology.

Risk management must enable the institution to make well-founded decisions based on the identification, assessment or evaluation and monitoring of the risks.

### Risk strategy

When designing its internal capital requirement calculation mechanisms, the institution should establish its approach to risks and risk management. This approach should then be summarised in a risk strategy elaborated by top management and approved by the management bodies. The scope and extent of the document should match the size and the activities of the institution.[[21]](#footnote-21)

The risk strategy must include the parent institution’s ICAAP-related requirements. Accordingly, the risk strategy must set out at group level the main risk factors, the types and tolerable extent of risks that can be taken. Furthermore, it is necessary to break down the group risk strategy consistently for the individual subsidiaries.

**The steps involved in preparing the risk strategy**

#### Risk-taking policy

1. Identification of group members and the scope of the ICAAP

As the first step in developing a risk strategy, the institution must specify the group of institutions that the ICAAP covers, define what is meant by “group level” and “institution-specific” along with the relation between the two.

1. Setting of risk management guidelines/principles

As a precondition to standardised and prudent risk management, the institution defines its risk management principles which it sets out as requirements throughout the entire organisation (e.g. independent control, increase of risk awareness, etc.). When defining the risk management principles, special attention must be paid to the fact that according to Hungarian regulations, credit institutions subject to consolidated supervision must fulfil the requirements regarding the governance system and risk management together with its credit institution and investment enterprise subsidiaries in which it holds a controlling stake. The establishment and enforcement of a risk culture throughout the institution (group) is the basis of implementing effective risk management.

1. Identification of risk/return trade-off

The institution must specify the extent of risk/return trade-off which it still considers acceptable at strategic level. This calls for defining the expectations that the institution will take into account, for instance shareholder expectations, customer expectations, supervisory expectations, etc., and taking into account of the following factors:

* + types and extent of risks that the institution intends to take and the expected returns;
	+ whether the institution has comparative advantages in any area;
	+ capital requirement of actual risks.

The weighing of the above factors enables the creation of a strategic framework which contains the target market, the targeted segments and the range of key products and services. The development of the strategic framework also includes the specification of key target variables and indicators and the linking of an appropriate measurement system to the targets based on the risk-taking principles of the institution.

1. Backtesting

It is important put the risk-taking policy in a dynamic environment. The operation of existing risk management systems and models must be monitored on an ongoing basis. Results must be backtested and the models must be improved based on the experiences.

#### Setting risk appetite and the willingness to take risks

Risk appetite refers to the amount of risk which an organisation is ready to take and is able to tolerate. Risk appetite may differ from group member to group member. If so, risk appetites need to be presented separately.

Institutions must identify (at group level) the relevant internal and external risk factors and draw up an accurate risk map of the exposures that apply to them. (Keeping in mind the risk definitions provided in the ICAAP guidelines.) Each institution (or group) must have a detailed view of the ratio, concentration and significance of specific risk types within the portfolio.

The institution’s management body and senior management are responsible for setting risk appetite and risk tolerance at levels that serve the business and risk strategy of the institution (group). When setting risk appetite and tolerance, all risks taken by the institution must be considered, including the exposures conveyed by off-balance sheet activities.

The process of setting risk appetite and risk tolerance must encompass the review and modification thereof in case newly obtained environmental, business and risk information and analyses call for it.

Risk appetite and risk tolerance levels can be expressed in different forms, either as qualitative or quantitative requirements (e.g. profitability, key risk indicators [KRIs], limits). They can also address areas where the institution’s risk tolerance is minimal (e.g. not preferred sectors and products).

The fulfilment of targets and requirements specified in conjunction with risk appetite and tolerance must be measured on a regular basis. This approach ensures that the set limits, risk indicators, limit frameworks, etc. are consistent with the institution’s risk appetite and risk tolerance even in a stressed environment. In the course of budgeting, the institution must determine the percentage of risk capital and the way of allocating it to specific portfolios based on its risk appetite

#### Attainable risk structure

The risk preference developed in accordance with the risk appetite must be checked against business strategies. The prevalence of risk/return trade-off rules determined at strategic level must be verified. The toolset for all this might be a properly designed system of limits and indicators. In this respect, the following steps are needed:

* The system of limits and indicators must be assigned to additional levels. (Assignment of aggregate limits to risk types and deeper levels.)
* Elaboration of detailed requirements or methods, or reference to the thorough regulation thereof. Institutions must be able to show on their risk map how the internal capital requirement is determined for specific risk elements, what internal processes are employed for managing risks (four eye principles, incorporation of KRIs and triggers) and how these items are monitored (monitoring).

The changes in risk appetite and the extent of risks taken can be monitored and checked using the indicators that represent specific dimensions. This approach ensures the permanent control of the desirable risk structure and its comparison to the actual one.

#### Risk management organisation

In addition to the purposes outlined above, the role of risk strategy is to define the organisational framework for the process that enables the identification of risk appetite along with the ongoing monitoring and maintenance of risks taken. The presentation of the organisational separation, structure, independence, decision-making competences and supervisory function of risk management must receive adequate emphasis in the risk strategy.

The management of risks should not be confined to the risk management function. In an institution that has a risk-aware culture, the governing body, senior management and employees are equally responsible for managing the institution’s risks. The organisation dedicated to risk management at the institution is the risk management function.

The risk management function should be sufficiently wide in scope (covering all activities and members) and independent (of all areas that it controls from a risk standpoint). It should be managed by a Chief Risk Officer (CRO) (or a sufficiently high-ranking executive with regards to the size of the institution). The responsibilities of the Chief Risk Officer extend to the entire organisation and its risk management. The Chief Risk Officer must have sufficient independence within the organisation (subordination and superiority, reporting obligation, decision-making) to enable him to form and maintain a contrary opinion (veto) in the risk-related decision-making process.

Within the institution’s management body, the Chief Risk Officer has a key role in establishing the risk culture, strategy, policy, appetite and in performing day-to-day risk management tasks accordingly.

The Chief Risk Officer and the employees working at the risk management function must have adequate expertise and practical experience (consistent to the complexity of the institution’s activities) so that they can handle and manage the identification and measurement of the institution’s risks, the internal rating systems, analysing tools and the risks associated with new products. It is the responsibility of the management body and the senior management of the institution to provide for the necessary resources (in adequate quantity and quality) and IT support.

Internal audit is responsible for reviewing if the Risk Control functions enjoy sufficient independence within the organisation.

The responsibilities of the Credit Risk Control Unit (CRCU) include the following among others:

* establishment of risk measurement and risk assessment systems,
* ongoing revision of risk rating criteria and model development,
* checking the adequacy of risk rating grades,
* assessment of concentration per sector, portfolio and geographical region,
* evaluation of model application,
* evaluation of overrides and exceptions,
* review and revision of the quantification process,
* gaps between current and expected ratings,
* benchmarking to external data sources

The following items are required in the risk management organisation chapter of the institution’s ICAAP:

* clear definition and separation of responsibilities and mandates, avoiding conflicts and overlaps,
* presentation of risk management processes, ,
* with a view to the principle of proportionality, subdivision of risk management to sub-classes (define and present the transparency and functionality of the organisational structure, the level of segregation, separation of business areas, back office risk and risk management),
* presentation of internal audit, control and compliance function (define and present the independence of internal control functions from supervised and controlled activities and from each other),
* presentation of the MIS, controlling and internal information system,
* definition of the nature, scope and frequency of reporting at specific levels,
* presentation of how the risk strategy is communicated and how risk awareness is developed within the organisation (information, training),
* application and presentation of group-level risk management and coordination,
* application and presentation of a remuneration policy that harmonises with the risk management system.

Credit institutions with a market share of at least 5% in terms of their balance sheet total Credit Institutions Act shall establish and operate, pursuant to the relevant provisions of the Credit Institutions Act

* a risk-taking and risk management committee to continuously monitor the credit institution’s risk-taking strategy willingness to take risks;
* an organisational unit tasked with the effective, comprehensive and independent risk control functions of all key risks facing the credit institution in charge of identifying, measuring and reporting risks; participating in the elaboration of risk management strategy and risk management decisions; and providing comprehensive insight on the credit institution’s risks.

### Risk management system, monitoring and control

#### Risk management system

One indispensable prerequisite of the operation of the ICAAP is that the institution should have an appropriate risk management structure in place and should provide for its development and review.

The process of risk management integrated into the ICAAP consists of five stages. These stages constitute a control cycle which also involves feedback and feedforward loops.

#### Stages of risk management

1. **Comprehensive risk identification**

This stage involves the revealing, definition and recording of all potential risks. Its importance derives from the fact that it sets the course of downstream risk management stages, for the institution can control and manage only the risks which it is aware of. The institution can estimate the risks which it considers relevant. The range of these risks may differ depending on the size, profile, and complexity of the activities of individual institutions. The institution is required to record and document the risks revealed during the identification process (e.g. under the framework of its Rules of Risk Management).

The next step is to find and define suitable systems for measuring the identified risks and to define and retrieve the necessary data from available systems and databases. The risk identification process should be flexible enough so that it can take into account any newly revealed risks in the future.

1. **Risk quantification (quantification of risks and coverage capital)**

Risk quantification is essential to provide an objective benchmark for decision-making both for the risk control function and the entire institution. Risk quantification is also important because it helps the institution identify the limits of its risk-bearing capacity. Furthermore, it is also needed for assessing the performance of the independent control function.

Besides and in relation to risk quantification, the institution also has to quantify existing and potential liabilities (capital and quasi-capital elements) which can serve as risk coverage as approved by the institution. In this effort, the institution should observe processes which impact the value of calculation elements (e.g. stability of results considered by the institution, hidden reserves, etc.).

During the identification and assessment of the risks the institution must use forward looking (e.g. stress tests) and back-looking tools with which it can detect risk concentrations as well. Forward-looking tools can be used for the identification of risks that may arise in crisis situations. Back-looking tools are suitable for the comparison of the risk profile and the risk appetite/risk toleration ability of the institution.

During the evaluation of the risks it is advised to take quality considerations (e.g. expert evaluations, presumptions and limitations of the risk assessment models) into account in addition to the quantitative information and data.

It is expected that the institution should possess a well-defined, appropriately documented internal reporting system approved by the management of the institution for the risk management activity. The task of the internal reporting system is to ensure that the management of the institution, as well as persons/organisational units involved in risk management and the implementation of the risk control function should obtain adequate, timely, clear, understandable, relevant and usable information on the identification, assessment or evaluation and monitoring of the risks.

1. **Comparison of risks and risk-mitigating instruments**

Once risks have been quantified, individual risk exposure have to be aggregated. The result of the aggregation will be the institution’s overall risk exposure within the ICAAP. In this step, it is necessary to ensure that no risks have been omitted during the process, that risks have not been recorded redundantly and that individual risk exposures can be aggregated. Moreover, it is also important to review the assumptions on risk correlations.

Decision makers need to have up-to-date information on the findings of the risk management process so that they have a clear and accurate view of the institution’s position and can take the necessary steps to manage risks. Risk management decisions can be made after risks and coverage have been compared. The transparency and clarity of the institution’s risk profile are indispensable for the determination of the institution’s risk-bearing capacity.

Prevention is an effective instrument of risk management. One form of it is the use of pre-defined operational limits. For each independent risk-taking organisational unit, a maximum limit should set under which the unit is allowed to take risks. Ex ante control should also involve the preparation of contingency plans which present extreme, unexpected situations and the stress tests designed for them.

1. **Risk monitoring**

Risk monitoring is the process where the institution is ensuring that its (actual) risk profile is in line with its (planned, expected) risk preferences.[[22]](#footnote-22)During monitoring, the utilisation of pre-defined limits is checked and the exercise should always address the consequences of increasing utilisation or potential limit overruns.

In the case of non-quantifiable risks, process-related expectations or quality requirements are monitored. The institution can summarise monitoring results in an internal (risk) reports. Therefore, a crucial element of effective internal ICAAP reporting is the procurement and preparation of all information (risks and risk-mitigating instruments) regarding the risk positions of individual business lines and overall institution. These reports should be prepared on a regular basis and with a view to the specific needs of recipients (institution management and business line leaders).

1. **Ex post control, feedback**

Internal reports are important starting points of ex post control actions. The purpose of ex post control is to enable the active influencing of risk positions defined earlier, but now with the observation of actual risks. It can be implemented in the following manner:

* risk reduction: measures taken to mitigate risks (e.g. involvement of additional collateral in credit deals, insurance, etc.);
* risk transfer: transfer of receivables to a third party (e.g. selling of receivables, hedge deals);
* Reallocation of risk capital, i.e. a limit raise. It is only possible if other units have not utilised their limits in full, or if the institution can allocate additional capital to cover the transaction. This method can be used due to certain business considerations, depending on the institution’s risk-bearing capability.
* Raising of cover capital: raising of additional capital (e.g. capital increase, capital issue).

Ex post control is the last stage of the risk management process. At the same time, it can serve as a basis of further steps.

In the course of the review of the ICAAP, the MNB assesses the institution’s risk management framework and evaluates the quality of top management’s information on the ICAAP, how the ICAAP is presented in MIS reports and how it integrates into decision-making processes and the bank's day-to-day activities. If the risk management framework is deemed poor, the MNB may deem it necessary to have the institution raise additional capital for covering its reported risks, over and above prescribing tasks to enhance risk management quality.

### Strategic risk

Strategic risk means the current or prospective risk to earnings and capital arising from changes in the business environment and from adverse business decisions, or from the overlooking of changes in the business environment.

Typical sources of strategic risk are e.g. endeavours to achieve a growth rate or market share that does not harmonise with the market environment, lack of timely and proper adherence to environmental changes, assignment of inappropriate means to correctly chosen objectives, poorly timed alignment to changes in the business environment, or specific actions that do not comply with strategic objectives.

If the business plans drawn up by the institution’s management were not realistic or fail to take into account the prevailing economic environment may also be indicative of strategic risk. It may be a strong indication of strategic risk if the institution persistently proceeds against the clearly articulated requirements and trends of the economic environment in matters which exercise a substantial influence on its services and business performance, or if the institution fails to revise its strategy despite clearly identifiable and substantial changes in the environment. (as well)

**ICAAP review**

The MNB regards strategic or business risks as material ones for all institutions. Although the quantification of the risk capital requirement is most frequently done by using the value at risk (VaR) method, which is built on the volatility of factors affecting net results. The MNB considers approaches of such nature ill-suited for determining risk exposure because of the dominance of the statistical approach and due to the absence of a forward-looking philosophy and background narrative. Instead, it expects the institutions themselves to try to identify their own relevant characteristics and their business environment from the perspective of risks while applying the well-known methods of corporate economics and strategic management (e.g. SWOT analysis, Porter’s five forces model, etc.). Institutions are also expected to study the possible consequences of unfavourable strategic and adjustment processes relying on suitable stress scenarios and to quantify the resulting potential losses.

## Evaluation of Material Risks

In this chapter we review the fundamental risks emerging in the operation of institutions in order to provide guidance for the identification and measurement of material risks in the internal capital adequacy calculation process. For each risk, we provide the definition of the risk concerned, its possible elements (risk segments) and the basic requirements for risk management. However, even the supervisory review process should not overlook the main provisions of the directly applicable CRR, as they often offer guidance in respect of the expectations of Pillar 2.

Institutions must strive for aligning each of their material risks to the risks defined herein. Special risk definitions as described in the “Other risks” chapter should only be used if the scope of the underlying risk is truly different from the risk types presented in this chapter.

Furthermore, after the identification of their material risks, institutions must make efforts to apply an integrated risk management approach for generating a standardised, single view of their risks. Individual risks are often difficult to separate, strong interworkings may exist between them and a certain type of risk may transform into a different type as a result of external effects. One example is the impact that the increased exchange rate risk conveyed by foreign exchange based products exercise on credit risk.

Moreover, institutions’ access to reliable and consistent data (adequate data quality) is an essential condition that may contribute to the efficient evaluation and review of their risks.

### Risks captured in Pillar 1

####  Credit risk

Credit risk refers to the threat of losses that impact the institution’s profitability and capital position and arise due to the non-performance of contractual partners (or from performance that is not compliant with contract conditions, i.e. from failures to fulfil (balance sheet or off-balance sheet) liabilities to the institution.

Credit risk in a narrower sense, i.e. the risk of a partner’s non-performance or non-compliant performance of payment obligations deriving from a loan, a deferred payment agreement or some other loan-type relationship is undertaken by credit institutions, financial enterprises and certain investment service providers as part of their regular business.

In the ICAAP, the institution sets out the capital calculation methods for credit risk, the systems of procedures for assessing and monitoring these risks (both inherently and as part of controlling) and the process of verifying that the calculated capital requirement provides, overall, adequate capital for unforeseen/unexpected losses associated with credit risk.

**Inherent risk**

Based on general and typical causes, credit risk can be broken down to the following segments:

* credit risk
	+ the risk of non-payment in relation to a bank loan as mentioned above
	+ the risk of certain investments (typically bonds), where payment is not executed in accordance with the contract
	+ risk of non-payment by other contractual partner or customer
	+ dilution risk
	+ card acceptance risk: payment with bank card or credit card may imply several risks that the credit institutions must manage. International card companies typically specify in their contracts that the acceptor credit institution must undertake a guarantee in the amount of transactions carried out at the card accepting places that are contracted with the credit institution for transactions carried out without the authorisation or knowledge of the card holders, or for unfulfilled services in the amount of the cost of such services. Coverage for such losses is provided only when the amount disputed within the charge-back procedure is available on the cash-flow account of the contracted trader. In other cases the disputed amount shall be the accepting bank’s loss. (Fraud, abuse and data phishing risks related to payments by card must be managed under the operational risk)
* partner risk (credit risk against professional money and capital market players)
* special lending exposures (portfolios in respect of which the MNB expects institutions to act with due care and with sufficient information)
* risk of foreign currency lending
* concentration risk (we consider it a pillar 2 risk, see detailed description in the chapter “Risks covered in Pillar 2”)
* country risk (we consider it a pillar 2 risk, see detailed description in the chapter “Risks covered in Pillar 2”)
* settlement risk (we consider it a pillar 2 risk, see detailed description in the chapter “Risks covered in Pillar 2”)
* residual risk (we consider it a risk not fully covered in Pillar 1, see detailed description in chapter “Risks not fully covered in Pillar 1”)
* securitization risk (we consider it a risk not fully covered in Pillar 1, see detailed description in chapter “Risks not fully covered in Pillar 1”)
* risk of non-payment by insurance company.

**Control**

General rules on credit risk management:

* Credit-granting shall be based on sound and well-defined criteria. The process for approving, amending, renewing, and re-financing credits shall be clearly regulated.
* The ongoing administration and monitoring of various credit risk-bearing portfolios and exposures – including the identification and management of problem credits and the implementation of adequate value adjustments, impairments and provisioning – shall be operated through effective systems.
* The diversification of credit portfolios shall be adequate given the institution's target markets and overall credit strategy.

**Capital calculation**

The CRD and the CRR allow three approaches for calculating the regulatory capital for the credit exposure of risks undertaken in the banking book. The first two are based on internal ratings (basic and advanced) and their application is subject to approval by the MNB[[23]](#footnote-23).

The third, simplest approach is the standardised approach. Institutions applying the standardised approach are expected to ensure that the adequacy of classification according to exposure classes be supported by regulations and documentation. It is especially important to specify the conditions for inclusion in the retail portfolio at regulatory level (in scheme instructions/risk taking regulations, etc.), as well as to define the other characteristics of the products (standardised products). The regulation must also include the definition of granularity[[24]](#footnote-24).

 During the calculation of the capital requirement the MNB accepts the following management solutions in connection with the management of granularity:

* classification of the products into so called “pools”, i.e. identification of products that “behave” in a similar way (identical, standard conditions, limited amount, etc.). It is worth determining a minimum amount of transactions for the individual pools in order to meet the granularity requirement.
* definition of the average size of credit per contract in connection with the exposures in the retail portfolio in accordance with points a) and c) of Article 123 of the CRR and the subparagraphs thereof on the management and capital requirement of credit risks, and the provision of a relevant distribution threshold.

This means that the institutions must determine their retail exposures so that the individual exposure risks should be adequately small proportionately to the entire portfolio. The institutions may use indicators measuring the portfolio concentration to assess this.

Concerning the risk of non-payment, Pillar 1 does not allow the use of “real” credit risk models (i.e. models that also reflect portfolio effects) even in the case of AIRB, whereas Pillar 2 permits their use. Several such models are available in the market (e.g. Creditmetrics, Creditrisk+), which are typically expensive methods that require significant expertise and data which makes their use profitable only for larger institutions usually. Furthermore, these models may convey rather significant model risks, although many of these are not exactly known due to their short usage history[[25]](#footnote-25). In the MNB’s experience, these models – besides their benefits – carry significant (model) risks, stemming, to a large degree, from the difficulty of calibration. Upon judging these models, an important tool of the MNB is the IRB model, which is used – in case of insufficiently granular exposures by way of its simulation – as a benchmark; thus the most important portfolio effects can be captured.

**ICAAP review**

Credit risks represent the most important risks for credit institutions falling under the scope of the CDR and constitute the vast majority of the total risk exposure and capital requirement. Accordingly, the MNB stresses that credit risk factors should be fully identified and adequately taken into account, and the credit risk capital requirement should be defined in a prudent manner.

It can be stated that in recent years there has been a continuous improvement in the institutions’ risk awareness, and credit risk methods applied in Pillar 2 have been considerably developed and fine-tuned. In order to encourage the emergence of such favourable tendencies in an increasingly wide range of institutions, the MNB summarises the lessons of previous reviews in the present Guidelines and – by formulating supervisory expectations in a detailed and precise way – it provides guidance and assistance to each and every institution for successfully conducting the internal credit risk capital calculation based on advanced methods.

With respect to the importance and complexity of credit risks, in parallel with the above, automatic additional capital requirements are prescribed for institutions which fall under the complex ICAAP review and do not use risk sensitive methods based on internal ratings and calculations in Pillar 2. The additional capital requirement is typically warranted by the potential risk(s) stemming from the assessment of risk exposure without sufficient depth and sophistication.

The evaluation methodology followed by the MNB in the course of Pillar 2 reviews cannot be precisely defined because of the complexity of lending processes and capital calculations as well as due to the multitude of possible consistent and prudent approaches. Nevertheless, the general aspects associated with each element and area of credit risk models are clearly identifiable and they represent the necessary preconditions for prudent consideration. Below, these subjects are elaborated in summary.

#####  Assumptions of the credit risk model

Advanced capital calculation models attribute credit quality changes to some underlying factor, whereas the starting point for capital requirement is determined by the stressed loss which is associated with the excessive swing of the above factor and which is subject to portfolio characteristics. The IRB model authorised in the regulatory pillar operates with the systemic risk factor, whereas the sensitivity which expresses changes generated by the default of transactions in this factor is defined by the correlation coefficient set out in legal provisions. Conversely, in the most widely used Pillar 2 credit risk models institutions have the opportunity to identify the risk factors, their number and their parallel movements as well as to select the nature and strength of their impact on credit quality. In the Creditrisk+ model, for instance, the sensitivity to underlying factor(s) is represented by the spread of the probability of default (PD), while in the portfolio models based on the multifactor Merton model, it is defined by factor weights and asset correlations.

In general, the MNB expects institutions using the IRB model in Pillar 2 to meet the minimum requirements set for the IRB method validated by the CRR, while also bearing in mind the principle of the continuous improvement of risk methods and expectations. If the given institution calculates capital requirement by using the Pillar 1 standard method, the MNB expects it to demonstrate the full scale of exposures covered by the IRB model, and also to report the possible discrepancies from the regulatory pillar when exposures are taken into account. If the institution concerned applies the very same IRB method in Pillar 1, then the possible most precise identification of the potential weaknesses and sensitive elements of the applied model is considered by the MNB as the most important Pillar 2 task concerning credit risk.

In the case of institutions applying an approach different from the IRB model in Pillar 2, the MNB has the following expectations:

* With regard to the selected underlying risk factor or factors they should demonstrate the close parallel movement of both the external factors which in reality define the credit quality of the institution’s exposures and the time series of default rates. This is because if factors, largely independent from default processes, are chosen the underestimation of risk exposures cannot be avoided even by the use of higher asset correlations.
* In the absence of a sufficient quantity of data, calibrating the sensitivity of credit quality to the risk factor is a very difficult task, and it is indispensible to use expert estimates. The prudent approach must be followed with a consideration to statistical uncertainties which is especially justified by the instability of asset correlations experienced in stress periods. Since the sensitivity of defaults – e.g. the relative spread of PDs in the Creditrisk+ model or the asset correlation in the Merton portfolio model – can easily be made congruent to the correlation coefficient of the IRB model in the case of single-sector approaches, the MNB expects institutions to carry out such comparisons[[26]](#footnote-26).
* In the case of multi-sector models which operate with more than one systemic risk factor, the definition of relations between factors as well as the sensitivity (factor weights) to certain factors of the transactions often proves to be the delicate task. In the case of selecting observable factors, the capturing of the joint distribution of risk factors in a prudent way can be challenged due to the instability of empirical correlations, whereas in the case of latent factors, it can be challenged due to the modelling difficulties of decomposition. As a result of the above, in the case of applying multifactor models, the MNB has the following expectations from institutions:
	+ on top of the risk characteristics of transactions, institutions should also use some other group formation features (e.g. sectoral rating in the corporate portfolio, exchange rate risk in retail models) in modelling;
	+ they should be able to quantify the diversification impact created by model assumptions, i.e. even in the case of the complete parallel movement of risk factors the extent of stressed loss should be specified.
* Institutions should demonstrate the completeness of exposures covered under the Pillar 2 model, highlighting in detail deviations from the regulatory pillar and their justification. In addition to the above, the MNB has the following expectations from institutions which use the IRB method validated in Pillar 1:
	+ with regard to parameters which do not have an influence on the mechanism of the Pillar 2 credit risk model – exposure at default (EAD), loss given default, (LGD) and credit conversion factor (CCF) – they should quantify the impacts of deviation from Pillar 1;
	+ they should enable the comparison of the parameters used in the two types of methodology (EAD, PD, LGD, maturity factor, etc.) with the capital calculation results (risk-weighted asset value, expected loss, capital requirement) either at transaction level or at least at the level of rating models and/or rating categories.

##### Estimating the probability of default

Most of the credit risk capital models define the possible largest extent of losses in view of the general risk characteristics of portfolio elements. One of the most important risk indicators is the transactions’ probability of default, which can be conditional or unconditional: The first expresses the credit quality status for a given point of time and/or for an environmental condition, while the latter reflects the extent of the transactions’ general or “fundamental” default risk[[27]](#footnote-27). The definition of default is set forth in Article 178 of the CRR.

It may be practical to use conditional PDs for certain applications (e.g. pricing, provisioning), whereas the input variables of well-known capital calculation models represent unconditional probabilities of default, i.e. average PDs of transactions which span over long-term, economic cycles. Accordingly, the estimation of PDs is adequate only if institutions

* define the level of the PD based on a sufficiently long, multiannual time series and on a definition of default in line with the legislative framework;
* conduct not only a simple averaging of historical default data, but ensure that the span over cycles is also taken into account (by applying adequate weighting);
* counterbalance the statistical uncertainty of estimation by means of conservative adjustments and forward-looking approach.

In addition, the MNB expects from institutions that the PD estimation should be conducted based on detailed methodology as laid down in the ICAAP documentation – similarly to annual back-testing and recalibration – rather than based on ad hoc solutions and procedures. If the data used during the estimation do not meet the requirements of the PD definition (e.g. the use of NPL ratios), then the assumptions used in the course of the estimation should be substantiated in detail.

##### Estimating the loss rate

The loss given default is a risk characteristic of identical importance with the probability of default. In the MNB’s view, in LGD estimates – unlike in PD estimates – the use of expected values in unfavourable (so-called downturn) situations represents the logically consistent solution rather than the use of long-term averages. Since in respect of several portfolio segments, the majority of Hungarian institutions do not have sufficient data of losses which would reflect actual returns in order to have reliable statistical estimates for LGD, they must often rely on conservative expert assumptions. In the course of the above, special attention should be paid to the following:

* The observed characteristics and distribution of the status of transactions after they have fallen into the default category must be used for the estimates (e.g. recovery, sale of receivables and collateral, closure). In order to appropriately estimate the downturn it is not sufficient to project past trends, rather the characteristics of the period since the breakout of the crisis as well as the possible changes in the conditions of returns must also be thoroughly considered.
* It does not suffice to deal exclusively with closed transactions since in the numerous portfolios most of the transactions at default at some time in the past are still waiting for closure or sale at present. In the case of unclosed exposures, the estimation should also consider the fact that in transactions that are in default for a long time cannot be expected to yield the rate and outcome of returns which transactions closed with relative speed produce. Therefore, the MNB expects that the default characteristics of closed and unclosed transactions should be compared.
* In the case of the application of non-linear capital functions in the PD (such as the IRB model), the MNB challenges the approach which interprets the recovery or restructuring of non-performing transactions as a recovery which influences LGD. This is underlined by the fact that such transactions represent a high share within the portfolio – due to the non-linearity of the capital function according to PD – which may result in the underestimation of capital requirements. In such cases, the MNB considers it expedient to disregard the impact of the above-mentioned „technical” defaults in the course of LGD estimation[[28]](#footnote-28).
* If the LGD estimation is not based on actual recovery data, it does not suffice to conduct an exclusive overview of coverage levels in a direct way (e.g. an overview which compares exposures with the liquidation value of the collateral). In such situations, the MNB believes that the reliable and expedient method is to jointly and item-by-item take into account collateral values, external environmental impacts (e.g. exchange rate devaluation) and coverage levels (LTV). In the absence of the above, the MNB also accepts simulation methods which utilise empirical distributions characterising the coverage level for the given portfolio.

Similarly to PD estimation, institutions must record in the ICAAP documentation the detailed methodology of LGD estimation and its review timetable which is expected to be carried out with at least an annual regularity. Furthermore, the MNB expects institutions to also analyse the relationship between recoveries expected in the course of LGD estimation and group formation characteristics of the exposure (e.g. the size of the exposure, the extent of delay, the time length of collection or the extent of collection costs).

##### Items in default, expected losses and impairments

Items in default represent an important part of risk exposure. The advanced methods with the point of departure in performing portfolios – from IRB calculations to the models cited above – usually do not assign any capital requirement to such items. According to regulatory logic, coverage for losses generated by items in default – similarly to the expected losses of live portfolios – should be provided through impairments and provisioning[[29]](#footnote-29). If the expected losses on the total portfolio calculated on the basis of risk parameters exceed the level of impairment, the difference between the two is recognised as the factor which increases capital requirements (in case of the standardised approach) or reduces own funds (in case of the IRB approach).

In the framework of the review the MNB expects institutions to assess in Pillar 2 the risks of items in defaults and to demonstrate in their respect the sufficient level of losses recognised and provisioning made.

At the same time, the MNB would welcome if in developing their impairment and provisioning procedures institutions were to take into account the value of credit risk parameters, empirical recovery rates and the expected changes in the economic, market and legal environment. This is underlined by the fact that in Pillar 2 the mutual accounting (netting) of impairment surpluses and deficits shown in the individual portfolio segments is subject to deliberation and is not automatically authorised. In such cases, the MNB deliberates why and to what extent the accounting of impairment surpluses is justified to cover the expected losses of other portfolios.

##### Shareholdings (Equity exposures)

In order to fully take into account exposures, it is also required to assess the risks of shares. This assessment cannot be based solely on their book values, but also the extent of risk corresponding to the characteristics of the given shareholding should also be used. If, for instance, behind shareholdings there is a property portfolio which generates revenue or which is to be sold, its risks should also be included in the economic capital calculation usually applied for such portfolio elements or collateral.

On top of the above, in respect of risk measurement methods applied for shareholdings (equity exposures) the relevant provisions of the CRR (Article 155) may not be disregarded. Especially with regard to simple weighting methods, the MNB emphasises the importance of the following:

* The realisation of the risk weight defined in the CRR and the expected loss value relating to shares traded at the stock exchange and to securities representing shareholdings (investment units) is acceptable only if the application of preferential weighting to exposures is justified by the high ratio of public ownership and by the turnover.
* When the risk parameters of direct investments and shareholdings are chosen, the provisions of Article 165 of the CRR are deemed as guidance, and any deviations from them must be explained by the institutions in each and every case.

##### Special lending exposures

With regard to special lending exposures (SL) – typically project loans – the MNB expects institutions to act with due care and with sufficient information because of the specific characteristics of SLs. Consequently, institutions

* should be aware of the specific characteristics of such exposures and of their risk characteristics in sufficient depth as well as item-by-item,
* should formulate and consistently apply the segmentation principles,
* should – in their internal parameter estimation procedures – pay proper attention to the uncertainties of estimation attributable to the typically small number of such exposures and to their low representation in rating categories.

The MNB deems the slotting method to be the guidance for portfolios with fewer than one-hundred elements, the method which was developed for special lending transactions and which takes into account credit quality by means of simple weighting. The MNB expects the institutions to report any deviation from the above. In case of an appropriate number of exposures and sufficient data provision, the MNB regards as the task of institutions the analysis of the applicability of approaches more sophisticated than the slotting method.

Treating project financing as a priority with respect to credit risk is justified by several reasons. In the case of such lending activities interests and fees are repaid during the term while principal repayment (either the entire amount or a decisive, at least 60% portion of it) falls due upon the expiry of the loan. In project financing risk depends on the profitability of the financed project.

The MNB expects institutions to handle the real property loan portfolio under Pillar 2 in a uniform manner, separated from corporations in respect of segmentation, rating, parameter estimation, capital calculation and reporting alike[[30]](#footnote-30). Upon estimating PD and determining the value applied for the purposes of capital calculation, institutions are expected to consider the size of the sample used for the estimation and the fact that a small sample size increases the uncertainty of the estimation.

In recent periods, the largest credit losses of the banking sector have derived from special lending exposures and the building up of a highly concentrated, poor quality property loan portfolio. It can be also stated in general, that in the case of non-performing property exposures, banks failed to act with due care when assessing the risks, and accounted for the required impairment spread over a longer period of time. The MNB, therefore, pays special attention to the adequate quantification of the risks associated with non-performing property loan portfolios, and the coverage of risks by capital and impairment. In this regard, the MNB expects institutions to develop risk measurement models that are capable of suitably identifying risks arising in the operation of the portfolio and, in the case of commercial property, primarily with respect to the cashflow generated by the exposures. Besides the calculation of expected losses, these models should be also able to ensure an adequate calculation method for possible unexpected losses incurred during collection and for the capital requirement needed.

In the lack of an appropriate property financing model, as a minimum requirement, the MNB applies an approach that assumes that the portion of the commercial property loan portfolio uncovered by impairment and collateral is a potential loss, to be covered by capital. Given that in case of commercial property exposures the income generated by the property constitutes the primary source of the loan’s repayment, and that the value of the property reflects the earnings potential of the property, if the combined coverage provided by the impairment and the collateral is less than 100% of the exposure, the MNB expects the institution to cover the difference by capital. Since the estimated market value does not generally take into account unexpected adverse circumstances (e.g. a further exchange rate stress, additional declines in the rental fee, a deteriorating property market environment) that may deteriorate the expected return further, the MNB expects institutions to determine a return-based collateral value based on a conservative, stress-tested cashflow trajectory. In the lack of the above, the MNB will take the liquidation value as a basis, irrespective of whether the defaulting project is managed on the basis of a liquidation approach (i.e. where the return will be generated by the sale of the project/project property), or whether it is a going concern, where the bank will realise the return from the project’s cash-flow after the partial write-off of the exposure. If the expected cash-flow that might be taken into account in the impairment originates from a source other than the utilisation of the project property (e.g. sponsor’s payments or guarantees as experienced in the past), its consideration in the calculation of the project’s unexpected loss or risk is only permitted in particularly justified cases.

##### Managing off-balance sheet items

The requirement to fully take into account credit exposures also applies to the proper management of off-balance sheet items. The MNB encourages all institutions to carry out their own internal parameter estimation, whereas in the absence of the above the guiding principle is to use sectoral experience and credit conversion factors included in the original Basel regulation. When the risk sensitive internal method is applied, the expectation is to use an approach which takes into account the empirical experience which indicates that with the growth of default probability the probability of drawdowns against credit facilities is also up. Irrespective of the chosen approach, the MNB finds it necessary to get to know the institutions’ analyses as to what extent off-balance sheet exposures were drawn down until the date of the defaults.

##### Partner risks

Partner risk means potential losses from a partner’s failure to perform its contractual obligation before the conclusion of the specific transaction (i.e. before the final settlement of cashflows). As a type of credit risk, this risk typically affects derivatives, repo and other security financing transactions. Another characteristic feature of partner risks is their bilateral character; in other words, the respective positions can take on an opposing (market) risk profile from the perspective of the partners participating in the given transaction which, among other things, provides an opportunity for netting positions and settlements. For the claimant, potential losses from partner risks may materialise, besides the partner’s non-performance, in a negative change in the market (fair) value of the market instrument involved in the transaction.

The elements of the procedure applied during the quantification of the capital requirement attached to the partner risks are, essentially, identical with the steps of direct lending (default) risk; i.e. the capital requirement is determined in proportion of the exposure weighted with – lending – risk. The main difference lies in the calculation of exposure at default (EAD), pertaining to which the Basel regulation (CRR) permits the application of several methods. Risk weighting is performed after the definition of the exposure. The MNB considers it important and expects institutions to ensure the consistent management of the risk weights used during the calculation of partner risks and direct credit (default) risks; in other words, the same risk weight should be applied for the same customer (partner) for the purposes of both calculations. (For example, it is not permitted to use standard risk weights for partner risk calculations if the institution applies IRB weights for the same partner when calculating direct credit risks). The use of netting in partner risk management is subject to supervisory authorisation.

The regulatory changes adopted as of the beginning of 2014 increased the scope of partner risk exposures to be quantified and the regulatory capital requirement associated with the exposures. The institutions must set aside capital for credit valuation adjustment (hereinafter: CVA) risks; in addition, partner risk exposures vis-à-vis central counterparties (may) also entail a capital requirement. Institutions should design (or develop) and operate the rules, processes, methods, procedures and systems intended to manage partner risks in such a manner that they adequately cover the newly emerging elements of partner risks as well, with special regard to risks related to CVA.

##### Risk of foreign currency lending

In evaluating credit risks, within credit risk, institutions must separately evaluate the foreign currency denominated portfolio. The risk inherent to foreign currency lending is characterised by a non-linear relationship between credit and market risks, as the market risk stemming from the appreciation of the foreign currency exerts a disproportionate impact on the credit risk of the institution’s foreign currency loan portfolio, and occasionally can even impact the institution’s entire risk profile. Foreign currency lending can imply higher residual risk in case the value of the collateral does not follow the rise in the exposure value stemming from the increase in the exchange rate; in addition, institutions may also face the concentration of credit risk if the majority of their loan portfolio is denominated in the same foreign currency or in closely correlated foreign currencies.

##### The calculation of credit risk capital requirements

When internal rating based credit risk models are used, Pillar 2 capital requirements are principally calculated as the unexpected loss (UL) of performing portfolios based on the long-term (TTC) or downturn risk parameters of the exposures, on the exposure characteristics of the credit portfolio and on the underlying assumptions of the capital calculation model. The outcome of the capital calculation model can only be automatically translated into the credit risk capital requirement if the expected loss (EL) of the portfolio is fully covered by setting up impairment or provisioning. Since the extent of justified provisioning is typically quantified by means of conditional, short-term (PIT) PDs and LGDs, the two values usually differ (the difference may also be attributable to other causes). It would be logical to incorporate the difference between impairment and EL (expected loss of the portfolio) in the capital requirement[[31]](#footnote-31), but since the CRD stipulates the appropriate correction of the available capital[[32]](#footnote-32), for IRB banks (where the available capital is ab ovo calculated in Pillar 1) it would be illogical to deviate from it.

#### Operational risk

Operational risk[[33]](#footnote-33) pursuant to Article 4(1)(52) of the CRR, operational risk means the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events, which also includes legal risk.

Under the framework of the ICAAP, the institution lays down the capital calculation methods for operational risks, the systems of procedures for assessing and monitoring these risks (both inherently and as part of controlling) and the process of verifying that the calculated capital requirement and the risk management system are suitable for eliminating the institution’s probable and unexpected losses from operational risks in a prudent manner.

**Inherent risk**

Operational risk events are the materialisation of threats which are classified to segments in applicable laws (Article 324 of the CRR) as follows (risk segments):

* internal fraud,
* external fraud,
* employment practices and workplace safety
* clients, products and business practice,
* damage to physical assets,
* business disruption and system failures,
* execution, delivery and process management.

Possible risk events (scenarios belonging to the event types listed above) relate to specific business activities of the institution and to the way these activities are performed (work processes). Table 2 of Article 317 of the CRR groups these activities into eight business lines (in case the standardised/advanced capital calculation method is selected, a mandatory separation of business lines shall apply). Financial losses resulting from potential risk events may appear in the following forms: write-offs, legal expenses, penalties, unsuccessful recourse, indemnities to customers and other parties, loss/replacement of physical assets). The extent of losses correlate with the actual volume figures of the activities pursued. The estimated sum of losses arising from operational risk for all activities of the institution is the institution’s inherent operational risk.

**Control**

The management of operational risks is targeted at preventing risk events and damages (by in-process and managerial controls, internal safeguards), handling critical situations (contingency plans, business continuity management (BCM)) and mitigating potential losses (collateral). The risk management system and the direction and control thereof must be commensurate to the institution’s operational risks and must rely on relevant internal regulations and procedures. By establishing and operating a system of control procedures commensurate to risks, the institution limits its exposure to an acceptable level that corresponds with its risk-bearing capability/risk appetite. The principle of proportionate risk management calls for the monitoring of operational risks (through process-specific Key Risk Indicators (KRIs), incident registry, analysis and actions). In addition, data collection, the application of scenarios and the incorporation of experiences into business processes play a key role in the management of operational risks. The quality of control affects the extent of probable damages.

**Capital calculation**

Calculated (and accumulated) capital is intended to function as a buffer covering the net risk which is a function of inherent risks as mitigated by controls and is therefore changing over time.

Institutions can apply own model-based Advanced Measurement Approaches (AMA) or simpler methods based on fixed ratios – the so-called Basic Indicator Approach (BIA), as well as standard (TSA) and alternative standard (ASA) methods – may be used to determine the capital required for covering financial losses that are likely to happen under the risk management method applied (the TSA/ASA approaches are subject to supervisory approval, while after its validation, the use of AMA is also subject to supervisory approval).

If advanced measurement approaches (AMA’s) are applied, the impact of other circumstances should be taken into consideration in a comprehensive system during risk qualification and quantification, when the operational risks categorised in the CRD are assessed. This way, the possibility and impact of extreme scenarios (stress situations) should be considered, along with the impact of forced or intentional strategy shifts and changes in the regulatory environment. When assessing specific activities / work processes, the likelihood of the materialisation of risk events, as well as their impact, should also be evaluated.

The comprehensive oversight and reasonable mitigation of risks and thus including operational risks are mandatory and form part of the corporate governance system also when more simplistic methods are applied (BIA, or TSA, ASA). The institution must also have a procedure in place supporting the verification of the adequacy of the capital calculated by the institution, which will be deemed inadequate if it is only based on a comparison with actually incurred losses: it must also include the systemic assessment of risks. As capital requirement calculations render only an approximate result here and sometimes (e.g. in the case of institutions with low profitability) may render a lower capital against actual operational risks, these calculations must be supplemented with further analysis, and the capital requirement must be increased if necessary.

In the case of institution groups, the systems targeted at the identification, measurement, management and analysis of operational risks should be established for the group of institutions that are subject to consolidated supervision. A procedure is to be established for allocating the group-level capital requirement for operational risks as calculated under the AMA. This procedure should adequately reflect the operational risk of individual subsidiaries and their contribution to the consolidated capital requirement.

**ICAAP review**

When measuring operational risks, institutions almost exclusively follow one of the following two simple sectoral practices: they calculate capital requirements (BIA and TSA methods) in the considerably risk-insensitive manner based on the guiding indicator adjusted to the results of operations, or alternatively, they quantify, in a considerably more sophisticated and risk-sensitive way, the extent of capital coverage (AMA) by using the probability distribution of possible losses. The MNB’s experience shows that in the domain of risk awareness and risk management there is a qualitative difference in favour of institutions which use the advanced method primarily because the loss distribution-based approach requires the detailed and comprehensive assessment of the institution’s operation and processes. As a consequence, the MNB expects institutions falling under the complex ICAAP review to carefully assess their operational profile and risks in Pillar 2 and based on the above, to make every effort to meet the regulatory expectations set for advanced methods at least in the fields of loss data collection, scenario analysis, risk control and the definition of loss distribution.

Based on the MNB’s previous experience, institutions should in particular pay attention to the following:

* in the case of group-level capital calculations, the institution should also assess its own (individual) risk exposure, and should be aware of the sensitivity of capital requirements to changes in the input variables of the model;
* if the institution determines the capital requirement based on an internal model used by the parent institution, as part of the capital requirement of the holding company allocated to the local level, the institution must provide evidence to the supervisory authority, by means of qualitative and quantitative tools, that the capital requirement allocated to it adequately covers the operational risk profile of the institution;
* the completeness and representative nature of loss data used in capital calculations as well as the adequacy of the applied scenario parameters and the adequacy of fitted functions should also be demonstrated;
* losses from the operational risks associated with lending must be processed, and their statistical characteristics are to be presented to the MNB;
* the information (loss data, self-assessment results, stress tests, KRI indicators, etc.) for calculating internal capital requirement is used in risk management to mitigate risk exposure;
* in order to reduce operational risk exposure relating to financial market trading activities, institutions should develop appropriate governance and procedural rules, as well as data recoding protocols, assessment characteristics, incentive and control mechanisms.

Since in the advanced methods of operational risks data management, process organisation and control functions are at least as important as the specification of the applied capital calculation model, the MNB accepts the result of the advanced method as the capital requirement only on condition that the institution demonstrated a well-founded and high-quality performance in the areas listed above. In order to accomplish it the following must be ensured:

* the completeness, consistency and closed nature of data collection,
* regularly processing and interpreting the characteristics of internal and external loss data and the results generated by self-assessment and scenario analysis, as well as based on the above, formulating and implementing the appropriate risk mitigating measures, and
* efficiently representing the interests of operational risk management function - in addition to its executive role - in top management decision-making.

##### Reputation risk

Among operational risks, reputation risks should be also evaluated. Reputation risk is the current or prospective indirect risk to liquidity, earnings and capital arising from adverse perception of the image of the financial institution on the part of customers, counterparties, shareholders, investors or regulators. It is manifested in the fact that the external opinion on the institution is less favourable than desired.

Reputation risk may originate in the lack of compliance with industry service standards, failure to deliver on commitments, lack of customer-friendly service and fair market practices, low or inferior service quality, unreasonably high costs, a service style that does not harmonise with market circumstances or customer expectations, inappropriate business conduct or unfavourable authority opinion and actions.

Signs of significant reputation risk include the extensive and repeated voicing of a negative opinion on the institution’s performance and overall quality by external persons or organisations, especially if such negative opinion receives broad publicity along with poor performance by the institution which may lay the grounds for such opinions.

There might be some externalities that give rise to reputation risks despite being independent of the activity of the specific bank (e.g. the reputation of the parent bank, the reputation of the entire sector has been damaged by a different institution, etc.).

**ICAAP review**

As a part of measuring reputation risks, the MNB sets two requirements for institutions. On the one hand, during the supervisory dialogue institutions should give account of their most important institutional characteristics which carry (or alternatively, reduce) potential reputation risks. Such characteristics may, among others, be the following:

* reprehensible and public resolutions, measures issued and sanctions imposed by the MNB, the Hungarian Competition Authority or by the National Tax and Customs Administration,
* the general statistical characteristics of the number, the subject matter and the management of customer complaints received,
* pending and closed criminal and civil litigation proceedings, and
* the institution’s most important social and charity activities.

The MNB also expects institutions to study item-by-item the possible situations (e.g. unfavourable media reaction, etc.) which carry direct reputation risks, their potential consequences and they should also demonstrate, with reference to appropriate institutional processes (e.g. media monitoring) and action plans, the likelihood of efficiently observing and handling them.

According to the MNB, it is more feasible to cover reputation risks by efficient processes than by capital. In the event of questionable institutional practices, the MNB may require provisional additional capital generation until process regulation is established in order to cover losses that originate from the previous practice and can no longer be mitigated.

#### Market risks

Market risk: the current or prospective risk of losses on balance sheet and off-balance sheet positions arising from adverse movements in market prices (changes of bond prices, security or commodity prices, exchange rates or interest rates that impact the positions).

In the course of the ICAAP, institutions keeping a trading book must assess whether the procedures established and the models applied by them properly handle market risks, and whether the capital set aside for market risks provides sufficient coverage for such risks at all times. As the institution has to provide for capital adequacy on an ongoing basis, it is advised to build the ICAAP on internal risk measurement and management processes and thereby it should form an integral part of the institution’s internal governance system. The institution must have a clear strategy that contains guidelines on managing interest and exchange rate risk[[34]](#footnote-34).

**Inherent risk**

The elements of market risk are as follows:

* in respect of the trading book:
	+ position risk (debt securities, securities, shares, the specific risk of securitisation, the specific risk of the correlation trading portfolio);
	+ the taking of large exposures exceeding the limits;
* interest rate risk outside the trading (banking) book (where Pillar 2 is relevant) [[35]](#footnote-35);
* foreign exchange risk conveyed by the activity;
* product risk conveyed by the activity,
* credit valuation adjustment risk.

The elements of the trading book include positions consisting of financial instruments or commodities held by the institution for trading purposes or for covering the elements of the trading book.

**Control**

The management of the institution must review regularly the items and structure of the balance sheet along with the external environment and must respond to external and internal changes in a timely manner. Institutions are advised to set up a dedicated unit for this role, the Assets and Liabilities Committee (ALCO). In addition to the institution’s liquidity risk, the committee must monitor and regularly check stock positions, interest rate and foreign exchange positions, various equilibrium balances (interest rate, foreign exchange and liquidity balances), the changes of key items and various asset groups, the impact of all these on profits and the trading book positions.

The institution must also have a policy in place approved by senior management for managing the risks of stock positions. This policy must define the purpose and reason for holding stock positions for own account, the range of stocks and stock-related derivatives that are allowed to be held as positions, the size and composition of the portfolio for own account, the revenue targets and profitability requirements of speculation activities and the main methods of managing stock position risks.

The institution must draw up a policy for managing foreign exchange risk. This policy must specify how this risk arises and how it is taken, identify deals that generate major foreign exchange risk along with off-balance sheet activities that affect this risk, describe the evaluation of foreign exchange positions (in particular foreign exchange options), set the value of foreign exchange positions that can be taken, specify the related profitability targets and the key methods of managing foreign exchange risk.

The institution must use appropriate control mechanisms to keep market risks within the limits allowed in the trading strategy, and operate a proper limit system for controlling foreign exchange and interest rate positions in the trading book and commodity and foreign exchange risks. The tracking of portfolio-specific profits, open positions and limit utilisation enables the measurement and benchmarking of the profits of individual organisational units (desks) at specific limit utilisation and risk levels and at an average open position, facilitating the planning of risk capital allocation.

Market risk management is in charge with monitoring and recording overdrafts. These processes and the applicable sanctions must be regulated in rules.

The volume limits assigned to open positions can be allocated to financial instruments within individual financial portfolios, while limits that are driven by specific loss or risk amounts (e.g. VaR) can only be applied to the total assets of specific portfolios. VaR limits are set based on the probable maximum loss of the portfolio for a specific holding period and range of confidence, assuming regular market conditions.

In a default case, these limits include day trade and overnight limits for traders, currency types and various trading positions. The operation of the limit system must be reported to the senior management on a regular basis. Furthermore, the marketability of positions in the trading portfolio must be analysed regularly based on the availability of relevant market prices, market turnover and size. Institutions with a significant portfolio which regularly expand their product range are expected to have procedures in place also for the management of new products. The contents of the trading strategy and that of the trading book must be cross-checked on a regular basis and results should be reported to senior management. When the institution presents the ICAAP results to the MNB, documents on backtesting must be filed as an attachment.

Upon determining the own funds requirements for credit valuation adjustment (CVA) risk, the MNB shall deem the institution’s CVA exposure arising from securities financing transactions significant if:

* the own funds requirement for the risk exposure of these transactions exceeds 1% of the institution’s regulatory capital, or
* the risk-weighted notional amount of these transactions exceeds 10% of the institution’s regulatory capital.

Besides the accurate and consistent definition of trading book contents, the prudent valuation[[36]](#footnote-36) of recorded positions also plays a key role in the presentation of market risks.

The baseline of determining the prudent value is the fair value, which should be determined on a daily basis. Valuation must be fully separated from trading activities and, whenever possible, it should use market prices as a starting point. If no market price is available, institutions should price their positions conservatively, by means of model-based pricing. According to regulations, institutions should verify the prices set on a market basis or by way of models at least monthly, in an ex-post control exercise, which may also be supplemented with ad-hoc verification. Regular reports should be submitted to top management on the ex-post verification of market and model-based prices and on other reliability checks. The MNB will also review these reports when assessing the ICAAP.

As part of the valuation process, the institution should have procedures in place which set out the rules for setting up valuation reserves. The purpose of these reserves is to have the institution set aside capital for covering the risk of events and phenomena that may derive from the imperfection of markets or internal processes. The regulation declares that within the scope of these procedures, at least the following reserves should be considered: unearned credit spreads, close-out costs, operational risks, early termination, investing and funding costs, future administrative costs and, where relevant, model risk. Furthermore, formal procedures are required for determining the adequate level of reserves for book positions[[37]](#footnote-37) that are becoming illiquid[[38]](#footnote-38).

The output of prudent valuation is the additional valuation adjustment (AVA), which results in the adjustment of the fair value. If prudent valuation yields a value lower than the fair value, the absolute value of the difference must be deducted from the regulatory capital.

**Capital calculation**

Risk measurement and the calculation of the capital requirement allocated to risks actually mean risk assessment using regulatory methods in respect of trading book risks and exchange rate and commodity risks that relate to the entire business and also the calculation of the related overall capital requirement for risks.

Larger institutions with a significant trading portfolio and complex positions are expected to employ more accurate and risk-sensitive methods for measuring market risks. Therefore, regardless of which method these institutions apply to meet supervisory reporting obligations (standard or internal model method), they are expected to develop and employ as part of the ICAAP an advanced methodology that is based on value at risk (VaR). In these cases, it is acceptable if the institution chooses the use parameters[[39]](#footnote-39) with the internal model which (it thinks) better reflect the underlying risks instead of the parameters set out in the regulation. These deviations, however, must always be supported with a valid explanation.

For institutions using internal models, the regular backtesting[[40]](#footnote-40) and evaluation of the model’s performance are fundamental requirements. The senior management body responsible for managing market risks should review the results of backtesting and evaluation on a regular basis. With a view to the limitations of internal models, the institution should run regular stress tests and scenario-analyses of extreme events. The results and conclusions of these exercises should also be reviewed at top management level.

In case the institution also covers other Pillar 2 risks (e.g. interest rate risk of the banking book, market liquidity risk, etc.), as part its market risk management, the MNB requires that the management of these risks is presented in detail in the market risk management policies.

**ICAAP review**

The mapping of market risks within the ICAAP, in an ideal case, is carried out by means of the risk sensitive internal method. This is justified by the principle nature and function of the credit institution’s activity as well as by the complex relationship of market risk factors and their high dimensions. In line with this, the MNB requires within the framework of the ICAAP review that all institutions which have a material trading portfolio should assess their risk exposures proportionately to the complexity of the portfolio by using historical or mathematical-statistical methods with regard to all material risk factors. In the absence of the above, the MNB prescribes an additional capital requirement adjusted to the given exposure profile for institutions falling under the complex ICAAP review to cover market risks recorded in trading and banking books.

In conformity with the philosophy of internal capital calculation, the MNB does not specify the concrete method of implementation, it allows institutions to freely choose from among variance-covariance-based, historical or simulation-based approaches. In addition to enforcing the principle of proportionality, the MNB is ready to fully accept the handling of market risks in Pillar 2 for institutions falling under the complex ICAAP review with the following conditions:

* daily and local level measurements should be complemented with backtestings in which the relationship between the extent of risks generated by the model and the actual historical value changes in the portfolio is subsequently compared;
* internal trading and exposure taking limits should be in line with the institution’s risk appetite and with the sophistication of its risk measurement system;
* daily risk measurement should be complemented with periodic stress testing programs which should extend to the examination of changes in all relevant risk factors;
* the market risk database should be continuously updated and the extent of the shocks applied should be re-evaluated;
* the set of market risk factors used in modelling should extend to the inherent risks of the trading book position, in particular, to
	+ the relevant risk factors,
	+ non-linear characteristics of derivative products,
	+ the credit valuation adjustment risk of derivative products,
	+ characteristics deriving from the structure of the yield curve,
	+ risks deriving from the volatility of foreign exchange rates and asset prices,
	+ sovereign risk factors,
	+ concentration risks;
* in the case of the application of empirical correlations between risk factors, assumption of normality as well as the consideration of the holding period by means of scaling (e.g. by the square root of time), the appropriateness of the applied method is demonstrated;
* if positional exposures are identified by means of economic methods (e.g. NPV method) differing from the accounting approach, the two different types of exposure concepts are compared and elaborated in detail;
* the institution should also have an indicator expressing the „stressed risk value”.

In previous reviews the MNB often found that the group of risk factors, the extent of stress testing and the risk methods applied in market stress tests, which supplemented capital calculations, were insufficient. The MNB believes that it is especially wrong to pursue the stress-testing practice exclusively based on parallel yield curve shifts, the practice which neglects a significant proportion of risks. In such cases, the MNB may require the institutions to quantify the output impact of scenarios which were developed by themselves. In the case of calculations which are non-transparent or inconsistent and difficult to evaluate, the MNB may set additional capital requirements in consideration of risk limits.

### Risks not fully covered in Pillar 1

#### Residual risk

Residual risks are risks associated with the significant devaluation or limited applicability of collateral covering credit exposures. In other words, residual risk is the risk that recognised credit risk mitigation techniques used by the credit institution prove less effective.

The CRR enables institutions to employ risk mitigation techniques to reduce the capital requirement of credit risks. While institutions mitigate these risks by way of collateral, such collateral can pose additional risks (legal, documentation and liquidity risks) which may deteriorate the impact of risk mitigation.

For example,

* the liquidation of the collateral is either problematic or time consuming,
* collateral was valued inappropriately (e.g. overvaluation).

Residual risk must be managed through written procedures and rules. Institutions must be able to prove to the MNB that they have proper risk management procedures in place to control risks that derive from the use of credit-risk mitigating collateral. The institutions should have in place appropriate governing and control systems, valuation procedures, internal regulations and assigned responsible individuals for the prudent handling of risks that occur. These procedures should be subject to regular review.

In case the MNB does not find the procedures and methodologies employed by the institution under Pillar 1 appropriate and comprehensive, it may require the institution to take specific action (e.g. change the haircuts on the volatility of collateral) or raise additional capital for covering residual risks.

**ICAAP review**

Residual risk is closely connected to the approach used in loss rate estimations because in sufficiently conservative LGD estimations the residual risk is already directly reflected in the credit risk capital requirement.

The MNB is capable of assessing the method of considering residual risks and their capital requirements only partly in view of the methodology of LGD estimation. There are, however, other supervisory expectations concerning residual risks which represent an obligation even for institutions which apply highly conservative loss rates. These expectations are the following:

* Institutions should go beyond the statistics-oriented approach of LGD estimation in assessing residual risks, they should also take into account and analyse in detail the risk factors which may be responsible for the possible future devaluation or limited applicability of collateral.
* They should conduct regular analyses about returns on collateral and quantify the potential losses attributable to the devaluation and limited applicability of collateral.
* They should prepare the detailed methodology for the review of collateral value discounts and provisioning rules.

#### Securitisation risk[[41]](#footnote-41)

Risks deriving from securitisation deals for which an institution acts as an investor, originator or sponsor should be evaluated and managed through appropriate procedures to ensure in particular that the actual economic content of the transaction is fully reflected in risk evaluation and management decisions. Institutions which are originators of revolving securitisation transactions involving early amortisation provisions must have in place liquidity plans to address the implications of both scheduled and early amortisation.

**ICAAP review**

The review and the evaluation are also aimed at assessing whether the level of regulatory capital held by the institution in respect of the assets which it has securitised are adequate having regard to the economic substance of the transaction, including the degree of risk transfer achieved.

Institutions are expected to have internal methodologies that enable them to assess the credit risk of exposures to individual obligors, securities or securitisation positions and credit risk at the portfolio level. The internal methods may not rely solely or mechanistically on external credit ratings.

The supervisory evaluation is essentially based on the provisions of the CRR and the relevant EBA guidelines.

It is necessary to assess and manage in Pillar 2 all risks deriving from securitisation transactions undertaken by institutions as the party who assumes risk, as the party who transfers risk or as sponsor.

The MNB expects institutions within the ICAAP review to allow access to all of their securitised positions irrespective of materiality, as well as to demonstrate the regular monitoring of portfolio risks supporting securitisation. In order to establish the relevant risk weights and capital requirements, the MNB acts with consideration to compliance with the provisions laid down in the CRR, the quality of the process, to its results, to the business function of securitised positions and to the identical interests of entities sharing the risk.

#### *Modelling risk*

This is the risk that the institution makes decisions (e.g. in assessment and valuation) that result in financial losses due to model deficiencies. The underlying primary cause of model errors is not necessarily negligence, but knowledge limits, insufficient data or changes which cannot be predicted from historic data, or simply the fact that models are never perfect.

It is rather difficult to quantify model risks. Practically it is next to impossible as quantification calls for an estimation of both model deficiencies and their financial impacts. Model deficiencies can be isolated with sensitivity analyses and stress tests, yet the conversion of their results into economic loss figures is a rather difficult task. Therefore, in the case of this risk, the recommended way of protection is not coverage with capital but risk management. A conservative approach that is based on sensitivity analyses, the use of subjective elements (also required in Pillar 1) and the permanent monitoring of the models’ performance may provide sufficient protection against such unfavourable impacts.

The use of simpler capital calculation methods (underestimation of credit-granting risk when a standard method is used or the underestimation of operational risks in the case of BIA or a standard method) may also lead to a capital adequacy calculation that renders lower results than what the actual risks would call for. The institution should assess the potential deficiencies of the applied methods and should take them into consideration during the ICAAP.

In case the supervisory review finds that the methods and the procedures applied by the institution are not satisfactory or that the minimum capital requirement of the institution is not sufficient to cover its risks, in Pillar 2 during the ICAAP review the MNB may require, with adequate explanation, additional capital coverage.

**ICAAP review**

The MNB regards all risks deriving from the inherent uncertainty of capital calculation procedures or from their negligent application as material risks, including the standard methods, models based on validated internal ratings or widely used sectoral approaches applied by institutions. Thus, in managing model risks the tasks of institutions are the following:

* to be fully aware of the mechanism of the applied and alternative approaches as well as with their general characteristics and characteristics specific to them, and to be able to justify their choice;
* to make every effort to precisely map and support risk exposures by using sensitivity analyses and stress tests,
* to counterbalance the possible capital reducing effect of model errors by using adequately conservative parameters;
* to continuously monitor model outputs, their conformity with reality and to apply immediate adjustments on detecting problems.

Independent model validation (whether it is conducted by internal control or the parent bank) may be a risk mitigating factor. When risk exposure is assessed with an insufficiently supported model, with the lack of prudence or with unjustified simplification – in the absence of the required conservatism and monitoring – the MNB imposes a model risk capital requirement in the context of the supervisory review process by carefully considering the results of alternative approaches.

### Risks covered in Pillar 2

#### Concentration risks

The concentration of risks refers to the exposures that may arise within a single risk category (intra-risk) or across different risk categories (inter-risk) with the potential to produce (1) losses large enough to threaten the institution’s regular business operations (of usual and expectable profitability) or (2) a material change in the institution’s risk profile. While previous efforts to manage concentration risks focused mainly on the concentration of credit risks (market risk concentration was typically managed by market risk models)[[42]](#footnote-42), the crisis highlighted the fact that risk concentrations often make an impact via various risks (credit, market, operational, liquidity risk) and in close interworkings with each other. As their combined impact may exceed the extent that would derive from the separated handling of individual exposures, concentration risks must be managed with an integrated approach.

The concentration of risks may be a source of significant losses and therefore the MNB expects institutions that the handling of concentration risks should always be an integral part of risk measurement and management efforts as supported by written procedures and rules. As a minimum requirement, these documents must address the following:

* Each institution must have a risk-taking policy and procedure approved by senior management in respect of concentration risks. The risk-taking policy must be reviewed regularly, taking into consideration the changes of the institution’s risk appetite and the business environment as well.
* Institutions must elaborate internal systems and methods for identifying and measuring concentration risk which are suitable with regards to the institution’s activities, size and complexity and which are able to reveal the interworkings of concentrations across multiple risk categories.
* Stress tests are an especially useful supplement to measurement indicators. Under normal business conditions, concentration risks rarely cause problems as concentration mostly remain in the background. Therefore, the detection of concentration threats with stress testing is of outstanding importance.
* Institutions must operate limit structures for concentration risks that are consistent with their risk appetite and risk profile.
* Institutions must have adequate action mechanisms in place which enable them to mitigate concentration risks and to monitor, assess and manage the related policies, procedures and limits while also reducing risks.
* Institutions must be able to assess the adequacy of assumptions that served as a basis in the capital allocation process for setting the level of capital for covering concentration risks.

Methods suitable for keeping concentration risks under control:

* Application of limits for concentration indicators. For setting the limits, the institution must have a clear risk-taking policy and must provide for ongoing monitoring. (Regarding credit concentration risk, the requirements in the CRR for large exposures are suitable starting points but it is worth supplementing them industry, country and product/transaction-specific concentration measurements).
* When converting risks to market instruments and “selling” them, the institution buys protection provided by structured securitisation or credit derivatives, collateral, guarantees, etc.
* Many institutions allocate capital beyond the regulatory minimum for covering concentration risks albeit not separately but in relation to the underlying risks.

**ICAAP review**

The concentration of exposures is an important risk factor because the underlying assumptions used in capital calculations for not fully diversified individual and partial risks may often be mistaken leading to the underestimation of risk capital requirements. In the case of even the relatively moderate sectoral concentration or concentration according to product types, the real capital requirement may be underestimated by as much as 20-40 percent by using the IRB method which assumes complete granularity of the portfolio when assessing credit risks.

It is a very complex task to identify and take into account concentration in a prudent way because the concentration of exposures may occur in a number of different dimensions (connected with individual transactions, according to geographical, sectoral or product types, associated with denominations, within or among risks, etc.). A wide range of risk management methods have been developed in the sector; however, each and every one of them can be challenged: the concentration limits, for instance, tend to disregard the parallel movement of underlying risk factors and the widely used concentration indices (e.g. the Herfindahl-Hirschman Index) generally neglect the diverse risk characteristics of the portfolio elements.

The guidelines of the international supervisory community point out that concentration risks cannot solely be interpreted as a derivative element of credit risks, but they need to be assessed and managed in respect of most risk types. Consequently, the MNB expects institutions to assess and manage concentration risks in respect of the widest possible range of risks in line with the above-cited EBA Guidelines by means of the possible broadest set of tools (sound and effective limit system, regular concentration analysis, stress tests and alternative model calculations, and – in justified cases – intervention into the processes, etc.).

The MNB starts with the presumption of materiality for concentration risks in terms of each and every institution, and the burden of proof is imposed on the institution to provide evidence otherwise. The MNB determines the capital requirements of concentration risks with a view to the assumptions of the applied capital calculation models, to the consistent application of the aforementioned methods and to their quantified results. In the absence of the above, the MNB quantifies the reasonable extent of economic capital requirement with regard to the distribution and characteristics of exposures to Pillar 2 risk methods applied and by means of sensitivity analyses and simulation techniques.

##### Concentration risks of lending

The concentration of credit risks is interpreted as a distribution of exposures to customers and trading partners where potential default by a relatively small group of counterparties or large individual counterparties is driven by a common underlying cause and may hazard the “business-as-usual” operation of the institution (uninterrupted operations with the usual and expectable profitability). The term individual customers and trading partners does not only refer to individual counterparties but also to groups of individual customers/partners that are closely connected (through ownership and/or financing) [[43]](#footnote-43).

In practice, the expression large exposure is used as a reference to cases that involve small groups of individual counterparties[[44]](#footnote-44). Concentration in a broader sense also includes the following: concentration by economic sector or geographical location, concentration in a specific foreign exchange and concentration of credit-risk mitigating measures (concentration of the type or issuer of such assets), etc.

Based on the definition, there are two main types of concentration risks:

* Concentration of exposures to individual customers/customer groups (single name risk – large exposure): the source of exposure here is default by a relatively small group of customers/partners,
* Concentration of risks arising from a group of exposures that share a common underlying cause (e.g. sector).

Pursuant to Section 108(5)a) of the ACI, ) in respect of managing the risk concentration arising from the application of credit risk mitigation techniques, all credit institutions shall have in place effective written procedures and policies for addressing concentration risk arising from exposures to clients, groups of connected clients (including central counterparties), and counterparties, clients in the same economic sector, geographic region or from the same activity, and from the application of credit risk mitigation techniques.

When discussing the concentration risk of credit risk, institutions applying advanced and standard methods should be mentioned separately. The main issue for these institutions relates to the fact that the IRB capital function used for calculating the weighted asset value assumes a fully granulated portfolio, thus it theoretically underestimates the actual capital requirement for the credit risk of the institution’s portfolio. Therefore, the aforementioned distortion is an issue for every institution which may call for the setting of an additional capital requirement in Pillar 2. This will be judged (both on the part of the institution and the MNB) depending on the extent of risks and the adequacy of applied risk measurement and management tools.

The review and revision of concentration risks are of special importance in the case of smaller institutions and institutions that pursue specialised activities (e.g. mortgage banks). Smaller size and a special activity profile should not imply larger concentration risk on their own because the drawbacks of a limited market and specialised profile may be offset by comparative advantages like a deeper knowledge of the market and higher proficiency. At the same time, this institution segment is far more sensitive to shocks deriving from a common underlying cause. Therefore, the potential need for additional capital is always a valid question in their case, noting that the assessment of risk concentrations should always receive more attention at smaller institutions than at larger ones.

Metrics applied to measure credit risk concentration:

* Size of top ‘x’ large exposures relative to relevant (“appropriately selected”) numeraire (e.g. balance sheet/own funds/total exposure),
* Size of top ‘x’ connected exposures relative to relevant (“appropriately selected”) numeraire (sensitivity analysis),
* Portfolio concentration ratios (Gini coefficients, Hirschman-Herfindahl index),
* Portfolio correlations and variance/covariance,
* Sophisticated institutions do not necessarily perform separate concentration tests. Instead, they manage concentration under the framework of integrated risk management systems.

##### Market and liquidity concentration risk

Market concentration derives from the fact that exposures relating to specific risk factors may be correlated (e.g. the prices of stocks held by an institution fluctuate together within certain limits). In most cases, this is only apparent in a stressed market environment while the correlation effect may be insignificant under normal conditions. Therefore, institutions should employ various quantitative methods (sensitivity analyses, stress tests) to reveal the extent of concentration[[45]](#footnote-45) in their books, i.e. to understand the impact of correlation changes on portfolio value.

The VaR models that most institutions use in their ICAAP do not take market concentration risk into consideration as these models rely on assumptions that relate to unstressed business conditions. Therefore, the MNB expects institutions to identify their market concentrations and incorporate this aspect into their risk management processes.

Concentrations in both assets and liabilities may convey significant liquidity risks for the institution. A concentration in assets can impact adversely an institution’s ability to generate cash or the market liquidity of assets. Liability concentration may make the institution highly vulnerable from a funding standpoint. (Just think of funding structure. If concentration is significant there, the loss of a single channel may cause significant liquidity problems.)

In order to be positioned to manage liquidity concentration risks, institutions are expected to gain a thorough understanding of their assets and liabilities structure. Taking into consideration the nature of their business activities, they should identify the sources of concentration risks and take adequate measures to eliminate these sources. It is important that the related analyses also take into account off-balance sheet items.

#### Country risk

Country risk refers to potential losses that may be generated by an (economic, political, etc.) event that occurs in a specific country, where the event can be controlled by that country (government) but not by the credit grantor/investor.

The components of country risk are as follows:

* transfer risk: the risk that the obligor of a contract (loan borrower, securities buyer, etc.) is unable to meet his payment obligations in the contractual currency while he has the necessary amount in local currency,
* sovereign risk derives from the insolvency of the country in which the institution has an exposure,
* collective debtor risk derives from the fact that an event impacting the whole country leads to default by a large group of debtors.

Specific elements of country risk are included in the CRR:

* exposures denominated in different currencies but belonging to the same debtor may be classified in different rating classes – consideration of transfer risk,
* differentiation between the risk weights of exposures to the central bank based on denomination,
* collective debtor risk is incorporated into the measurement of credit concentration risk with a view to correlations between defaults.

In order to manage country risks, the credit institution or investment service provider should develop the rules of country-risk management and set out the following items therein:

* country limit for specific countries,
* factors and sources of information taken into consideration for setting country limits,
* person or organisational unit in charge with approving country limits,
* person or organisational unit in charge with verifying country limits,
* mechanisms and frequency of reviewing country limits.

With the termination of the specific statutory provision on the capital requirement for country risks and in addition to the requirements on risk management systems discussed above, the MNB sets an additional capital requirement as part of Pillar 2 for covering country risks.

* Where the weight of exposures to central governments in the CRR is 50%, the additional capital requirement shall be 20% for country risk exposures that are between 75% and 100% of the institution’s capital base and 100% for exposures that exceed the capital base;
* Where the weight of exposures to central governments in the CRR is 100%, the additional capital requirement shall be 25% for country risk exposures that are between 50% and 100% of the institution’s capital base and 100% for exposures that exceed the capital base;
* Where the weight of exposures to central governments in the CRR is 150%, the additional capital requirement shall be 30% for country risk exposures that are between 20% and 100% of the institution’s capital base and 100% for exposures that exceed the capital base;
* Where the weight of exposures to central governments in the CRR is 0 or 20 %, no additional capital requirement is set.

Institutions that choose to calculate the adequate capital for credit risks using an internal assessment approach are allowed to determine the capital requirement for country risks with an internal capital allocation method instead of the formulas presented above. If the institution is able to demonstrate convincingly to the MNB that its internal capital allocation method sufficiently observes potential losses deriving from country risks, the MNB will accept it for capital adequacy assessment purposes. In the contrary scenario, the institution applying internal assessment shall also raise the same additionally required capital for covering country risks as their peers which use the standard method.

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Country risks cover all risks associated with lending which derive from economic, regulatory, political or social events occurring outside Hungary and which represent a potential loss for the creditor. In this sense, this term is much broader than the sovereign risk expressing the solvency of sovereign governments, because country risks also include certain forms of transfer risks and collective debtor risks.

The MNB expects institutions with material exposures outside Hungary to manage such risks by applying the effective limit system specified in rules and regulations, and also to cover them by the appropriate calibration of capital calculation model parameters or by additional capital generation which rely on the results of suitable stress tests. In the absence of the above, starting from the weight-based approach set out in the Guidelines and, in justified cases, based on other conservative methods, the MNB prescribes additional capital requirement in the framework of the ICAAP review.

For international banking groups it is not always possible to clearly define which exposures can be regarded as relevant from country risk point of view. As a principle, the MNB states that

* in its capacity as „host” supervisor, it does not accept exposures vis-a-vis debtors in Hungary with foreign currency denominated loans as falling under county risks;
* in its capacity as consolidating supervisor, it accepts as relevant, from country risk point of view, the exposures assumed by associated companies of Hungarian institutions registered abroad vis-à-vis their debtors with foreign currency denominated loans.

#### *Risky portfolios*

Every year, the MNB publishes its Guidelines on risky portfolios, presenting portfolios and risks undertaken that, based on the MNB’s opinion, give rise to supervisory concern in the Hungarian market in the given period on the basis of analysis and supervisory information. In order to manage such risks it is justifiable and expected that the institutions concerned hold additional capital. The MNB will set, as a principle, additional capital requirement for the total portfolio with regard to risks and activities specified in the high-risk portfolios, and any divergence from this requirement will be indicated separately.

By prescribing the additional capital requirement stated in the Guidelines, the MNB wishes to achieve a number of goals: in case of certain risks, it calls the institution’s attention to the fact that it deems the risk attached to the given activity significant and, depending on the institution’s risk management, it may prescribe an additional capital requirement in the range of 0–100%. In case of some other risks, the goal is to protect the market from the uncontrolled proliferation of the risk. In case of the latter, the prescribed additional capital requirement may vary between 50% and 100%, depending on the quality of the institution’s risk management. If the institution can duly justify the adequacy of the model or practice applied by it during the supervisory review, the MNB may diverge from the rules included in the Guidelines in respect of certain risky portfolios.

#### *Interest rate risk in the banking book*

Interest rate risk in the banking book is the possibility that income and/or the bank’s economic capital value stemming from banking book positions changes adversely as a result of changes in market interest rates.

All balance sheet and off-balance sheet positions not included in the trading book should be regarded as banking book positions, typically including loan and deposit portfolios, non-trading security portfolios and interbank transactions, investments, other assets and liabilities, non-trading derivatives.

The income effect can be identified by using a number of indicators, of which the net interest income and net interest margin indicators are applied the most frequently. In addition to indicators, any other ratios or indices quantifying the bank’s income position and changes thereof may be used, provided that they have demonstrated their suitability to identify current and expected future developments in the income position and that they take account of all elements that have a significant impact on profitability.

The bank’s economic capital value is to be calculated as the net present value of the total cashflow of the assets, liabilities and off-balance sheet items constituting the banking book. In the calculation asset and liability cashflows should be considered with positive and negative prefixes, while off-balance sheet items should take the prefix matching the direction of the position. Total cashflow means that all cashflows emerging until the final (actual or estimated) expiry of certain positions are to be included in the calculation.

Regarding the source of the interest rate risk included in the bank’s balance sheet can be classified into four main types:

* repricing risk: risk deriving from the maturity mismatches of the repricing structure of assets, liabilities and off-balance sheet items;
* basis risk: risk deriving from the change in the relationship or correlation between two instruments serving as a basis for the pricing of assets, liabilities and off-balance sheet items and between the priced item and the interest rate of the instrument;
* yield curve risk: risk originating in changes of the shape and steepness of the yield curve;
* option risk: the risk deriving from options pertaining to the – explicit or inherent – characteristics of banking products that influence the interest rate risk of the product.

Of the items discussed above, interest rate risk is the most frequent risk in the case of the banking book, while in terms of impact, its most important source is repricing risk.

**Requirements concerning the models intended to manage interest rate risks in the banking book:**

The MNB considers interest rate risks in the banking book as material risks for all institutions and expects them to measure and manage such risks by appropriate models, according to the following aspects:

* The models should be able to measure the interest rate risks’ short-term impact on earnings and long-term impact on capital value and apply generally accepted and understood risk management methodologies and procedures.
* They should be capable of evaluating and quantifying all interest rate risk types arising in relation to assets, liabilities and off-balance sheet items not registered in the trading book.
* Furthermore, they should cover all balance sheet items and off-balance sheet items that are exposed to interest-rate risks, non-interest expenditures and revenues that are sensitive to changes of market interest rates along with interest-bearing assets, liabilities and off-balance sheet items not registered in the trading book (fees and commissions), if they play a relevant role in income developments.
* In order to determine, as precisely as possible, the effect of interest rate risks on earnings and capital, the data applied (stocks, interest rates, maturity pricing information, options, etc.) should be specified properly and in line with the nature and magnitude of the institution’s activities and risks. Furthermore, these data should be available in, or generated from, the credit institution’s records with adequate accuracy in a timely manner.
* The underlying assumptions should be valid, properly documented and sufficiently consistent over time. It is an especially important consideration for new products and assets/liabilities, whose maturity or repricing time differs from the original contract conditions or is not defined by contract. Key changes should be documented and are subject to approval by executive management.
* The handling of interest rate risks in the banking book is an integral part of the credit institution’s risk management activity. The management and the board should take into consideration information derived from the risk management model when making decisions on interest rate risks.
* Standard interest rate shocks expected as per international recommendations should form a part of the institution’s practice of managing interest rate risks in the banking book.
* The credit institution should operate an IT system which adequately supports. both at an individual level and at a local group level, the procedures and processes required to measure, control and report interest rate risks.

**Stress tests related to the interest rate risks in the banking book**

As part of its management of interest rate risks in the banking book, the institutions are expected to regularly perform stress tests which show the potential impact of a material change in the interest rate environment on the short-term profitability and long-long term economic capital value of the institution. The stress test should include at least one scenario with a prompt and unexpected shock, a persistently changed interest rate level and parallel shifts of different magnitude in the yield curves. Besides the parallel yield curve shock considered to be the baseline scenario, in order to a more thorough assessment of risks, the MNB recommends the use of scenarios simulating further shocks to the interest rate and changes in the shape and steepness of yield curves.

The institution is expected to model standard interest rate shocks to the banking book for all currencies in which the aggregate sum of its denominated and off-trading book assets and liabilities and off-balance sheet FX denominated transactions make up 5% of the total volume of banking book items.

Upon determining the magnitude of the interest rate shocks applied, the MNB expects institutions to take into account – for each foreign currency concerned – the actual level of interest rates, the level of past interest rate changes, changes in the volatility of the interest rate and the relevant international recommendations. The regulatory recommendation in respect of the interest rate shock affecting the standard interest rate is as follows:

* For exposures in the currencies of G10 countries, a +/– 200 basis point interest rate shock
* For exposures in the currencies of non-G10 countries, parallel yield curve shifts where the shift equals the 1st and 99th percentile of the interest rate changes observed (for an at least 5-year series of data and a 1-year (240-day) holding period).

In case the calculated shock with a scenario involving a non-G10 country’s currency fails to reach +200 or –200 base points, these two figures shall be applied.

The execution of standard interest rate shocks is a minimum requirement, which is recommended to be supplemented with approaches aligned to the specific characteristics of the institution according to the above.

The MNB expects institutions to have in place procedures and processes which, based on the institution’s risk position, imply appropriate control over the interest rate risks in the banking book. Moreover, they should also identify the capital need of quantified risks and allocate capital to cover such risks.

In case the standard interest rate shock on the interest rate risk in the banking book shows a potential decrease of the institution’s economic value in excess of 20% of its solvency capital, the credit institution should take actions to reduce its exposure to interest rate risk. These actions may equally be targeted at increasing capital or reducing risk exposure. If the absence of these measures the MNB will initiate the reduction of the credit institution’s risk exposures and the reinforcement of risk management processes. Before taking such steps, however, the MNB would always assess the sufficiency of the actions taken by the institution itself and consider the form and means of supervisory action accordingly.

**ICAAP review**

The MNB considers interest rate risks in the banking book as material Pillar 2 risks for all institutions and expects them to quantify such by appropriate methods. In the course of determining risk exposures – according to the Guidelines and the relevant recommendations of EBA – they should assess the re-pricing risk, the base risk, the yield curve and option risks, whereas in each and every case - in addition to income effects - output impacts should also be evaluated.

As far as the MNB’s methodological expectations are concerned, its guidelines are the same as the ones described under market risks, in particular, in respect of the importance of stress tests, their sophistication and the extent of additional capital generation. If the supervisory expectations are not satisfied in this regard, the MNB may request institutions to examine the effects of additional scenarios or risk factors in the framework of the ICAAP review.

When the MNB determines the calculated capital requirement, it takes its result as a point of departure, but it may also consider the method of taking into how other Pillar 2 risks are taken into account (e.g. the risk of the business environment) and the assumptions used for calculating available own funds (e.g. interim profit ).

#### *Settlement risk*

Settlement risk is the risk that a transaction executed is not settled as expected through a settlement system[[46]](#footnote-46). Settlement risk comprises credit risk and liquidity risk elements.

Treasury transactions, trading book items (deals) and capital market dealings concluded as part of investment services convey a settlement risk that is a specific mix of credit and liquidity risk. The credit institution bears the risk that while it fulfils its contractual obligations (payment or delivery), the counterparty fails or defaults to do so. Finally, it may lead to the non-performance in further securities transactions of that party meeting its obligation stemming from the first transaction (e.g. due to the non-availability of a financial instrument or to liquidity problems).

The settlement risk in Pillar 1 can be regarded as a limited interpretation of risks associated with the settlement of securities transactions (the CRR calls for an additional capital requirement for the price difference of unsettled transaction from the fifth day after the due delivery day (SD+5) onwards. The definition applied by the MNB in Pillar 2 interprets settlement risk as the sum of credit and liquidity risks arising during the settlement of transactions and depending on the design and specific features of the securities settlement system.

Under regular market conditions in Hungary, non-performance of delivery is mostly of technical nature; i.e. transactions are simply settled with a delay[[47]](#footnote-47). (One reason is, for example, the long chain of custodians involved in the delivery of securities). With a view to the fact that transactions completed (settled) late on the settlement day (SD), or completed after the SD but within SD+4 days can convey a material principal, replacement cost and liquidity risk, the MNB regards it is necessary to monitor and manage such transactions in the ICAAP as well. Although the CRR declares that unilaterally completed transactions (open deliveries) should be handled as a risk from the first (contractual) payment day or delivery period to the fourth day following the second (contractual) payment day or delivery period, the MNB, based on the components of settlement risk, prefers to apply a broader definition under Pillar 2.

Principal risk occurs if a party to a transaction is not getting back the asset transferred to the party in default (money or securities).

Replacement cost risk (or pre-settlement risk) is a type of risk that is smaller than the principal risk, yet it has more practical relevance in the existing settlement systems. The capital requirement calculation for settlement risk in the case of a 5–15 day delay as set out in Article 378 of the CRR is a starting point acceptable by the MNB. Accordingly, the magnitude of the risk is determined – ex post – by the volatility of the exchange rate, as well as the date of the transaction and contractual performance. Replacement cost risk from another aspect: the default by a partner may mean that the exchange rate gain (upon the selling of securities, the difference between historic cost and the contractual price, adjusted with interests) of a transaction is not realised. In this case, replacement cost risk can be supplemented with the opportunity cost of lost earnings, especially if the transaction is renewed at a less favourable rate (or is not renewed at all).

Credit risk-related liquidity risk derives from the potential failure of the counterparty to fully deliver (the contractual amount) in due time, which may lead to the following consequences:

* the duly delivering seller needs to seek other sources of liquidity to fulfil further contractual obligation(s) (take out loans or sell certain assets),
* the duly delivering buyer will have to obtain the financial instrument concerned from another seller so as to be able to deliver on further transaction(s).

For credit institutions and investment service providers operating under tight liquidity conditions, defaults on high-value transactions (delays) may cause significant problems. This risk type should especially be taken into consideration in the case of financial instruments that have a modestly liquid market (for the purchase of the instrument is more difficult and delivery defaults are more frequent under such conditions).

**Quantification of settlement risk, estimation of the related capital requirement**

As settlement risk is composed of credit and liquidity risk, it is an obvious choice to quantify it with the building block model. The methods outlined in the chapters on liquidity and credit risks can be used, yet they have to be customised and combined to match the specifics of settlement risk.

Settlement risk can be regarded as a traditional type of credit risk so the relevant measurement methods presented above can be applied to it, too. Yet this risk can be terminated or mitigated by DVP (delivery versus payment) or RVP (receive versus payment) settlements, and by involving a central counterparty (CCP)[[48]](#footnote-48) between the partners. As the mechanisms of settlement systems mostly ensure the minimisation of principal risk[[49]](#footnote-49) by applying these principles, the credit risk of securities settlements executed via a central counterparty is limited to the replacement cost. In the course of transactions settled bilaterally outside the CCP, however, the settlement risk should also be considered, monitored, and managed, depending on the partner’s rating. The reason is that in this scenario, no there is no independent third party or mechanism between the dealing partners which could enforce the DVP (RVP) principle. In this respect, the institution is expected to apply limit and partner evaluation systems and to perform appropriate monitoring.

In a securities transaction, the further away the seller is from the buyer and the longer the (deposit management) chain, the higher is the probability of partial fulfilment, defaults and non-fulfilment. In these cases, the counterparty/credit risk is multiplied. If the institution also provides clearing agent services to its customers (sub-clearing members), it bears further risks due to the fact that as general clearing member, it has to warrant for each sub-clearing member’s delivery to the central counterparty (only the institution is in contractual relation with the CCP). This risk can be kept at an appropriate level by setting risk limits, requiring adequate coverage and elaborating a proper monitoring system.

The extent of replacement cost risk depends on the institution’s agreements with other investment service providers. Frame contracts (e.g. on securities lending) may be proper risk management means. If the institution does not have an appropriate procedure in place for handling this risk, an additional capital requirement may be justified in the case of volatile markets.

Using an ex-post approach, the extent of replacement cost risk can be determined accurately (as demonstrated above); it can be estimated ex ante, and its relative size will be a reflection of market volatility. The MNB considers the following formula as the starting point for calculating the capital requirement for covering replacement cost risk:

(Average exchange rate fluctuation per day) \* (max. number of default days) \* (contract value) \* (likelihood of default)

* the likelihood of default and the average exchange rate fluctuation per day can be estimated using historical data,
* concerning the maximum number of default days, it has to be considered that, in case of derivatives and the spot deals guaranteed by it, KELER CCP will initiate a forced purchase procedure on the last day of the settlement cycle. In the case of a financial default, KELER will provide a settlement credit to the clearing member or draw on the Stock Exchange Settlement Fund to finance the transaction[[50]](#footnote-50).

As discussed above, credit risk-related liquidity risk has material relevance especially in cases when the institution operates on a lower liquidity rate, or if the financial instrument concerned has a limitedly liquid market. At the same time, settlement by multilateral contract netting can be a suitable way of mitigating liquidity risk or keeping it low.

This risk can be quantified using the methods presented in the liquidity risk chapter and it can be mitigated with other methods (transactions limits, limitation of the range of traded products).

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Settlement risk refer to the type of risk in which settlements via transfer systems are made in an unexpected way, thus, it is closely related to lending and liquidity risks. The CRR interprets settlement risks in the regulatory pillar in a very narrow sense – applying only to the price difference of securities transactions. By contrast, the definition applied by the MNB interprets settlement risk as the sum of credit and liquidity risks arising during the settlement of transactions and depending on the design and specific features of the securities settlement system. The above includes risks carried by the non-contractual settlement of all OTC transactions both for securities and foreign exchange transactions. They also include the exposures of transactions settled by netting long-term derivative products which finance securities, exposures which emerge in the course of stock exchange or OTC settlements.

Within the settlement risk it is desirable to define the risk of contractual value by credit risk tools, whereas the risk of replacement costs is supposed to be determined by liquidity and market risk tools, then to capture them in a uniform concept[[51]](#footnote-51). In the absence of an internal methodology pertaining to settlement risk, the MNB will determine the risk capital requirement as a percentage of the clearing house turnover of the given institution.

#### *Other material risks*

ICAAP 7 requires that the institution’s internal capital allocation process should capture all risks which have not been identified earlier but are material for the institution. Such risks may include e.g. strategic risk or reputation risk, but the institution needs to consider all risks not specified herein in case it can be captured in the institution’s operation and can be regarded as material. Risks may appear here which are specific to the institution and derive from its non-standard activities or clientele but fall outside the scope of usual risk definitions. The institution is free to use its own terminology and definitions for other material risks, albeit that it should be able to explain these to the MNB in detail, along with the related risk measurement and management procedures.

The MNB will not provide a detailed list and definitions of other risks. It is the institution’s responsibility to map out other relevant risks for which it has to elaborate an adequate risk identification mechanism. The institution needs to examine the materiality of the identified risk and the result of the assessment. Furthermore, it has to be able to explain these satisfactorily to the MNB.

Materiality: in the context of an institution’s activities, all risks which affect the achievement of business objectives should be considered material (significant). Other risks are usually difficult or impossible to quantify, thus their measurement and management typically call for qualitative methods. Therefore, institutions are advised to elaborate detailed methodologies for their evaluation and management which enable the revealing of risks and help keep them under control.

There might be a strong link between these risks and other risks, either because the former may amplify the latter (e.g. strategic risk can increase credit risk) or because they stem from the escalation of basic risks (e.g. IT problems carrying a high operational risk may also result in the fast increase of reputation risk if they impact customer systems). Thus the assessment of the materiality of other risks is a highly subjective exercise. The MNB takes a stand on this matter in the course of the supervisory review process and during the dialogue between the MNB and the institution, based on the submitted documentation.

### External risk factors

The fourth element of the ICAAP-SREP dialogue is the consideration of external factors. The level of capital has to be adequate on an ongoing basis, not only at specific times, so that sound operations can be sustained even under potentially adverse turns in the economic or business environment. The capital requirement is affected by the economic environment (e.g. recessions), the regulatory environment, etc. These factors are taken into consideration through capital planning which ensures that the institution calculates its adequate capital with a sufficiently forward-looking outlook. Stress tests enable the identification of necessary capital for times of economic recession. The adequate capital should be corrected with a view to additional capital requirements based on this outlook.

#### Risk originating in the economic environment

Risks originating in the economic environment affect capital or earnings, and they derive from

* significant changes in the economic/business growth observed in international, national and regional markets, industries, ownership sectors or financial and other markets;
* changes in product, service and asset prices and exchange rate fluctuations which originate in supply and demand imbalances;
* changes in investment instrument yields; or
* changes in the cost of the resources required for the operation of financial institutions.

The risk of the economic environment usually materialises directly as a strategic, credit or market risk. Its typical sources include recessions in economic, business or market growth, including cyclical recessions.

A macro-economical adjustment that breaks the usual trend of economic growth is a significant risk, and the same applies to inflation, significant changes in interest rates and/or exchange rates, the material increase if their volatility, and to the cyclical fluctuation of macro-economical processes which exceed the usual limit. In order to measure risks originating in the economic environment, it is reasonable to rely on stress tests developed especially for this purpose.

#### Risks of the regulatory environment

The risk of the regulatory environment is a risk that impacts capital and earnings and arises from changes in mandatory regulations set by international and national authorities. Typical examples of this risk include rules of and limitations on activities, rules of financial management and inventories, customer care procedures, regulations on market conduct and changes in taxation and subsidy schemes.

It is a sign of significant regulatory risk if changes in regulations fundamentally hazard the size of business of the institution’s major operations, its usual growth rate or profitability, or if an institutional reform or macro-economical adjustment leads to unfavourable regulatory changes in multiple areas. In order to mitigate the risks arising from changes in the regulatory environment, institutions are recommended to regularly monitor not only Hungarian, but EU level legislation preparation; thus, in particular, the publication of any commencement orders related to the CRD IV and CRR packages.

**ICAAP review**

In the framework of the supervisory review process, the MNB assesses the extent to which the institution considered risks deriving from the economic and regulatory environment. The institution is expected to strive to obtain adequate information, monitor the changes in the economic and regulatory environment, and incorporate current and projected external environment factors into its strategy and planning processes (e.g. business and capital plans, etc.). The MNB evaluates macroeconomic developments and market trends itself, and assesses the strategic endeavours and plans of individual institutions before formulating an opinion on the management of external risk factors by the institutions.

### Capital planning

The purpose of capital planning is to enable the institution to ensure capital adequacy under changing economic conditions, even at times of economic recession.

In the capital planning process, the following items should be reviewed:

* current capital requirement of the institution,
* planned capital consumption,
* the targeted and sustainable capital level (with a view to the institution’s strategy and risk appetite, as well as the expected external circumstances),
* the tools of capital management: internal and external resources that can be employed to increase capital (earnings potential),
* other employable means of ensuring capital adequacy (e.g. budgeting of dividend payments and balance sheet items, etc.).

The assessment of the internal sources of capital planning calls for the review of risk arising from the institution’s financial management (actual performance versus business plans, profitability and profit generating capability).

The capital plan must be prepared for all three levels of regulatory capital requirement (Common Equity Tier 1 capital, Tier 1 and total capital). The capital plan considers the current internal structure of the institution’s own funds, and outlines the steps to be taken in order to implement the ideal structure required for achieving the desired objectives.

The planning process should also consider changes in the domestic and international regulatory environment[[52]](#footnote-52) and their impact on bank capital, as well as the rules concerning the statutory capital requirements under CRD IV and the CRR (with special regard to their gradual application, including the introduction of combined buffer requirements).

Concerning the time horizon of the capital plan, the MNB expects a 3 to 5 year outlook, depending on the complexity of the institution. For smaller institutions, a three-year outlook is sufficient, but large institutions are required to work with a 5-year outlook. The capital plan should be revised on an as-needed basis but at least once in every three years and it should also be aligned to circumstances.

In the capital planning process, it is advised to use stress test to reveal the impacts of unfavourable changes in circumstances.

While the institution must perform capital planning even under normal circumstances, Section 96 of the ACI prescribes detailed requirements in respect of the capital conservation plan in the event of a credit institution’s failure to meet its combined buffer requirement. Moreover, pursuant to Section 108(5) of the ACI, Credit institutions shall have in place effective written procedures and policies for the identification, management and monitoring of the risk of excessive leverage, in particular in order to ensure that credit institutions address the risk of excessive leverage in a precautionary manner by taking due account of potential increases in the risk of excessive leverage caused by reductions of the credit institution’s own funds through expected or realised losses, hence to be able to withstand a range of different stress events with respect to the risk of excessive leverage.

In respect of capital planning, uniform EU-level expectations will be adopted in the near future.

#### Profitability

Earnings risk arises due to the inadequate diversification of an institution’s earnings structure or its inability to attain a sufficient and lasting level of profitability. Institutions have numerous tools at their disposal to measure earnings risks (stress tests, the further breakdown and regular monitoring of the risk indicators involved in risk appetite, the setting up of triggers, the implementation of an allocation mechanism, etc.).

The institution’s profitability investigation is an inseparable part of assessing the capital position. In addition to the various revenue generating capacities, the prudential significance of certain risk factors (e.g. strategic risk), the justified level of provisioning and the institution’s optimal reaction to crisis situations may substantially differ. Since the level of profitability is closely connected with the risk exposure and portfolio quality of the institution, the MNB expects the institution to develop and to consistently apply risk sensitive profitability indicators (e.g. RAROC) within the framework of the ICAAP.

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The role of profitability and capital planning is to provide a view about the institution’s position even in a dynamic perspective, particularly with a view to risk conditions and to the expected development of capital adequacy in the near future.

Capital planning outlines the expected medium-term development of the capital position in line with the level of profitability as well as with business and risk processes. During the supervisory review the MNB expects that the capital plan presented should equally address regulatory and economic capital adequacy and to describe the expected development in the capital position and capital adequacy at least in the content of two scenarios (the most probable and an adverse – stress – scenario) at all three capital levels prescribed by legislation (Common Equity Tier 1 capital, Tier 1 and total capital). If the probable future capital requirement can be guaranteed only by external fundraising, the institution must have well-founded and specific concepts about it.

An appropriately prepared capital planning usually relies to a large extent on the Pillar 2 risk methodology applied and, in particular, on the results of stress tests for quantifying the external environmental impacts. According to the MNB’s opinion, one of the important risk management tasks of institutions is to conduct the risk-based assessment of the result items and to utilise in capital planning the knowledge acquired about the individual risk types. This is particularly important because in the process of planning the results, the risks which are treated within the ICAAP item-by-item (e.g. interest results are simultaneously moved by both market and credit risks) are in a certain sense taken into account instinctively in a uniform concept.

If the MNB detects deficiencies and problems during the ICAAP review about profitability and dynamic capital adequacy – due to their close connection and mutual interaction – it considers a most suitable way of intervention. This may mean an instruction to reduce the risk exposure in a regulated way rather than the requirement to make an additional increase of capital requirement or to effect fundraising.

## Calculation of Required Capital

Under Pillar 2, the institution is required to determine to its best knowledge the level of capital (economic capital) it needs to cover actual and potential risks. In the capital calculation process, all material risks of the institution should be observed along with the impact of the risks on one another (integrated risk management approach), as well as the ratio and quality of capital required for covering the risks.

### Differences concerning the degree of sophistication of applied methods

The level of sophistication of the method chosen by the institution may depend on the following:

* the size and complexity of the institution (based on the principle of proportionality, smaller and simpler institutions are not expected to apply sophisticated and complicated capital calculation methods),
* the weight and relevance of the risk within the institution (an institution may apply very simplistic approaches like capital cushions for negligible risks and sophisticated models to material risks),
* available (especially intellectual) resources. The institution is expected to have a thorough understanding of the models it applies. It should not employ methods which it did not have the capacity/time to learn adequately. (This point is closely related to the first one: larger institutions usually have more means at their disposal);
* the institution’s risk appetite. One definite expectation is that an institution which takes larger risks should employ more sophisticated and more accurate methods than a risk-averse institution – at least for material risks.

Therefore, depending on the complexity and risk appetite of the institution, various approaches can be used for determining the capital requirement. Even in the simplest scenario, the required capital in Pillar 1 can be used as a starting point and it can be supplemented with capital allocated to risks not captured (or not properly handled) in that pillar. This is actually a conservative margin. Even in this case, however, the institution is required to provide evidence that Pillar 1 methods render a good approximation for the risks handled therein and that other risks are negligible compared to these.

Institutions with a more complex risk profile may employ an internal model to determine the capital requirement of all material risks, regardless of which Pillar these risks belong to. These institutions are also expected to take into consideration the correlations between individual risks when calculating the total required capital.

### Potential differences between Pillar 1 and 2

The handling of the same (Pillar 1) risks may be different under Pillar 1 and 2[[53]](#footnote-53). For example, an institution may use a portfolio model (e.g. Creditmetrics, Creditrisk+) in Pillar 2 instead of the portfolio-independent approach[[54]](#footnote-54) employed in Pillar 1. Or, as it frequently happens today, it may identify market risks for internal purposes with an internal model, while reporting as per the standard method in Pillar 1 (for the calculation of regulatory capital).

This freedom of choice does not only apply to the methods that serve the calculation of capital requirement – it also means the freedom of selecting the approach, risk metrics and capital definition. Apart from providing criteria on risk types that should be considered, neither CRD IV nor the CRR sets requirements or provides recommendations on capital calculation methods; indeed, they explicitly emphasise methodological diversity. A probably not insignificant reason for this is the intent that an institution which has been using capital calculation methods that practically comply with the new requirements (which is not a rare phenomenon among advanced institutions) should not have to replace those methods solely because of the implementation of CRD IV and the CRR. In line with the core philosophy of CRD IV and the CRR, however, this freedom has a price: the institution should be able to demonstrate to the MNB’s satisfaction the correctness and validity of the method it has chosen.

When calculating the adequate capital, usually the “going concern” or the “gone concern” principle is used.

When the calculation is performed on a going concern basis, an amount of required capital will be determined which enables the business to continue even when significant losses are suffered (thus this principle reflects the viewpoint of owners and employees who have an interest in maintaining the business). In these cases, typically an interim, alerting capital level is set as well. The drop of capital below that limit is still not a direct threat to business continuity, yet it is a warning sign that only a slight further decrease of capital is allowed and that actions are needed to avoid it.

The use of this approach requires more than just knowing the current situation. Some assumptions need to be used (although usually very simple ones) to take into consideration the future course of business. This thinking also involves the setting of a time horizon over which the institution wishes to guarantee the continuity of its business. The reasonable length of this horizon is subject to factors such as the time of resolving capital shortages or the rating period of credit rating institutions. Thus this time horizon can be freely chosen theoretically, usually a one-year period is used in practice, due to various reasons. A differentiation is required between the holding period and the time horizon of the capital calculation (especially with portfolios that can be terminated quickly, e.g. trading portfolios). The calculation of capital requirement for the latter requires further assumptions.

When the liquidation principle is used, the amount and composition of required capital will be determined in such a way that ensures the fulfilment of all liabilities in the case of immediate liquidation (this approach represents the viewpoint of bank deposit holders and creditors). Here it is sufficient to know the current situation and time horizon is only mentioned as the time required for winding up the positions which may differ significantly per asset type (e.g. the ten-day typical holding period for trading portfolios and the one-year period applied to credit risks).

Concerning the extent of risk, it is increasingly common to use VAR and its more consistent variants (tail VAR, expected loss, extreme value, etc.) besides “traditional” distribution methods. VAR-type metric require the setting of a confidence level and it is an obvious expectation that this level should be identical for different risk types (although in Pillar 1 different levels belong to credit and market risk).

If the institution chooses to use the going concern basis and VAR-type risk metrics, the capital requirement has to be set in a way that it provides adequate coverage against potential risks for a certain period and at a specific level of security[[55]](#footnote-55).

One may ask if a confidence level lower than that in Pillar 1 can be used for the calculation of economic capital. During the ICAAP capital calculation, the MNB expects the application of a 99.9% confidence level. In the ICAAP, the institution can apply a confidence level which is different from that in Pillar 1, but then the two results will not be comparable. The institution, however, needs to provide for such compliance, thus it must be able to demonstrate capital calculation per risk also at the confidence levels defined in Pillar 1[[56]](#footnote-56). The application of a higher confidence level reflects a more conservative approach and the MNB will accept it when performing the comparison to Pillar 1.

Another question is whether different holding periods can be applied to specific risks. Different holding periods are natural in the liquidation approach, because the termination time of individual portfolio types is not identical (which also explains e.g. the differences in holding periods in Pillar 1).

Concerning the definition of capital: whereas in Pillar 1 capital is defined as own funds (usually on the basis of applicable accounting rules), until 31 December 2014 and in a limited scope, the bank may apply an own definition of capital under Pillar 2, which it views as a better reflection of the true value of assets and liabilities and the risk-bearing capability of individual capital elements.

Besides the capital elements that constitute solvency capital, trading book profits, the guaranteed profit level for the year, risk premium revenues deriving from already priced risk expenditures, subordinated loan capital which cannot be considered as a part of solvency capital from a regulatory standpoint, and share listed and paid-up but not yet registered at the company court, are all elements which individual institutions may take into consideration as risk collateral in their internal capital adequacy assessment process. It must be pointed out, however, that the institution must be able to explain satisfactorily the risk-bearing capability of the items considered.

Please note, however, that not only the selected method has to be “defended” before the MNB, the institution should also be able to demonstrate the relations between its own capital calculations and the capital requirement in Pillar 1. The more distant the approach, risk size and capital definition used in Pillar 2 are from their Pillar 1 counterparts, the more complex this task is. Therefore, it is an obvious expectation that banks should be able to justify the deviations between Pillar 1 and Pillar 2 definitions[[57]](#footnote-57). **As of 1 January 2015, however, in Pillar 2 the MNB only accepts the own funds items defined as eligible in the CRR as capital available for covering risks during the calculation of SREP capital adequacy.**

### Allocation of capital

Theoretically and except for the determination of the economic capital of group members, capital allocation is not closely related to capital adequacy. In reality, however, it can serve as a control to capital calculations as it is a different way of determining, aggregating and breaking down capital to the organisational units and exposures. If allocation is linked to performance measurement or pricing, it suggests that the institution takes capital calculation seriously and applies it in its day-to-day operations (use test). The MNB regards this circumstance a material criterion when assessing the reality and reliability of capital calculation[[58]](#footnote-58).

### Determining the required capital after the supervisory review

After the supervisory review process, the MNB determines the required capital of the institution. During this process, the MNB:

* determines additional capital requirements;
* establishes harmony between the additional capital requirements, mandatory capital buffers and any macroprudential regulations that may have to be considered;
* defines and communicates the total SREP capital requirement (TSCR), the SREP capital requirement ratio and the overall capital requirement (OCR);
* assess the risk arising from excessive leverage;
* assesses whether the prescribed total SREP capital requirement and the overall capital requirement are expected to be sufficient.

#### Determination of additional capital requirement

The MNB defines additional capital requirements in order to ensure that at the institution they cover:

* any unexpected losses and impairment losses from insufficient impairment accumulation arising over the next 12 months;
* any risks arising from model deficiencies that are likely to lead to an underestimation of the various risks measured by the models;
* any potential risks not covered or insufficiently covered by the methods applied in Pillar 1;
* any risks arising from governance and control functions or other deficiencies.

Institutions must continuously comply with the additional capital requirement set by the MNB for covering unexpected risks (typically until the closure of the next supervisory review). The MNB determines the additional capital requirement for each risk. Besides the institution’s ICAAP calculation, for this exercise, the MNB relies on the results of supervisory benchmark calculations and any additional information available. If the MNB deems the ICAAP calculation reliable, it will use that calculation as a starting point for determining the additional capital requirement, and if necessary, it modifies it based on the outcome of supervisory benchmark calculations and other relevant inputs. If the MNB does not deem the ICAAP calculations reliable, it will use supervisory benchmark calculations as a basis, modifying them on the basis of relevant inputs, as appropriate.

The MNB assesses the reliability of ICAAP calculations according to the following aspects:

* adequate level of detail: the methods and procedures applied should be suitable for calculating not only consolidated risk but also individual risk types;
* credibility: the methods and procedures applied should be suitable for measuring and evaluating the specific risk and should be based on adequate models and conservative assumptions;
* soundness: the basis of the applied methods and calculations must be determined precisely; “black box” is not acceptable as a calculation method. At supervisory request, institutions should be able to indicate the areas where the applied models proved to be imprecise or erroneous and explain how this will be considered during the ICAAP calculation;
* comparability: the holding period, risk horizon and confidence level used for the ICAAP calculation should be comparable to the relevant variables of similar institutions and to supervisory benchmark estimates.

In addition, the MNB evaluates the reliability of the results of the institution’s ICAAP calculations by comparing them to the results of supervisory benchmark calculations for the same risks and also on the basis of other relevant inputs.

The MNB determines additional capital requirements in order to ensure that they cover all relevant risks. If the additional capital requirement calculated by the MNB differs significantly from the result of the institution’s ICAAP calculation, the MNB will provide a justification for the result of its calculation. If the MNB only considers aspects that are not uniquely specific to the institution, it shall apply its methodology on a consistent basis to ensure consistency between the institutions.

#### SREP capital requirement (TSCR)

**Based on the Pillar 1+ method, the MNB determines total SREP capital requirement (TSCR) as the sum of the following items:**

* **sum of minimum own funds requirements as set out in Article 92 of the CRR**
* **and additional own fund requirements, and – if appropriate – the sum of additional capital requirements determined in order to cover the significant concentrations materialising simultaneously at various risk types.**

**The MNB determines the total SREP capital requirement as a percentage of the total risk exposure amount (TREA).**

The composition of the total SREP capital requirement to be held by the institution continuously until otherwise directed is the following:

* + 8% (comprising 56% CET1, 19% T1 and 25% T2) represents the minimum own funds requirements set out in Article 92 of the CRR;
	+ … % additional capital requirement identified through the supervisory review process (comprising 56% CET1, 19% T1 and 25% T2).

In identifying the additional capital requirement, the MNB follows the relevant EBA Guidelines, which prescribe, as a minimum, the application of the ratios pertaining to the own funds requirement under Pillar 1 for total SREP capital requirement. In the letter closing the SREP, the MNB identifies for each individual institution the items to be used to meet the capital requirement, and may articulate stricter expectations than the ratios defined under Pillar 1 as appropriate.

The MNB also prescribes the composition of the additional regulatory capital to be used to cover specific risk types. As of 1 January 2015, the MNB may only consider items and instruments deemed eligible by the CRR for the determination of own funds in the calculation of the total SREP capital requirement.

The MNB shall determine and communicate to the institutions and, as appropriate, to other supervisory authorities, the additional capital requirement consistently. The communication toward the institution shall include, at least, the total SREP capital requirement as a percentage of the TREA, broken down in terms of the composition of the requirement and on a risk-by-risk basis.

It will be during the identification of the SCREP capital requirement for 2014 that the MNB shall prescribe, for the first time, the specific capital components to be used by the institutions to satisfy the capital requirement. The relevant EBA Guidelines prescribe the application of the ratios pertaining to the own funds requirement under Pillar 1 for total SREP capital requirement.

|  |  |  |  |
| --- | --- | --- | --- |
| According to the CRR | Minimum value of the CET1 indicator | 4% | 4.5% |
| Minimum value of the T1 indicator | 5.5% | 6% |
| Minimum value of total TMM | 8% | 8% |

#### Total SREP capital requirement ratio

The total SREP capital requirement ratio is calculated on the basis of the total SREP capital requirement and the total risk exposure amount, according to the following formula:

TSCR x 12.5

TREA

TSCR ratio = 8% x

In exceptional cases, the MNB is entitled to deviate from the calculation methodology presented above in order to prevent the additional capital requirement from dropping below a pre-determined level.

#### Overall capital requirement (OCR)

Overall capital requirement includes the minimum regulatory capital requirement, the additional capital requirement identified through the supervisory review process and macroprudential capital buffers.

The structure of overall capital requirement (OCR) is the following:

* ….% represents the total SREP capital requirement (TSCR), which must be met by the institution at all times
* …% represents the combined buffer requirement pursuant to Sections 86–92 of the ACI (100% CET1), of which
	+ …% represents the capital conservation buffer requirement pursuant to Section 86 of the ACI;
	+ …% represents the capital buffer pursuant to Section ... of the ACI.

The capital conservation buffer set out in Section 86 of the ACI can only be provided in Common Equity Tier 1 capital. The enforcement of the requirement is mandatory as of 1 January 2016, according to the gradually increasing ratios defined in Section 298 of the ACI.

Pursuant to the ACI, the MNB, acting within its macro-prudential function, shall prescribe the countercyclical capital buffer, the capital buffer pertaining to global systemically important credit institutions and the systemic risk buffer.

Pursuant to the ACI, credit institutions shall maintain an institution-specific countercyclical capital buffer as of 1 January 2019 at the latest; however, the MNB is entitled to determine such a capital buffer even earlier, subject to the provisions defined in Section 299 of the ACI. Pursuant to Section 87 of the ACI, credit institutions are required to maintain a countercyclical capital buffer comprised strictly of Common Equity Tier 1 capital.

The rules pertaining to the capital buffer to be maintained by global systemically important credit institutions are set forth in Sections 89–91 of the ACI. This capital buffer shall be maintained by systemically important credit institutions as of 1 January 2016, also in consideration of the temporary provisions under Section 301 of the ACI.

Pursuant to Section 92 of the ACI, the systemic risk buffer requirement shall be set by the MNB acting within its macro-prudential function, subject to the provisions of the relevant subsection. Credit institutions shall maintain the systemic risk buffer comprised of Common Equity Tier 1 capital in addition to the capital requirement imposed by Article 92 of the CRR, the capital conservation buffer, the institution-specific countercyclical capital buffer and the extra capital requirement imposed in the framework of a supervisory review. The systemic risk buffer rate shall be at least 1 per cent, with the proviso that it shall be set in gradual or accelerated steps of adjustment of 0.5 percentage point or multiples of 0.5 percentage point. Pursuant to the CRR, the MNB may prescribe by resolution that credit institutions subject to consolidated supervision maintain a systemic risk buffer on an individual and on a consolidated basis as well.

Also in consideration of the provisions of the CRR, the MNB also prescribes the required composition of the overall capital requirement (OCR):

* + minimum X% in Common Equity Tier 1 capital (CET1);
	+ minimum X% in Tier 1 capital (T1).

**Example**

The supervisory additional capital requirement is defined as 137.5% of Pillar 1, implying a capital requirement of 3% projected to TREA.

The regulatory capital of the institution is 100, its CET1 capital is 70, and its T1 is 85.

Its total risk exposure is 1000, total Pillar 1 capital requirement 80 (1000\*8%), and its total Pillar 1 capital adequacy ratio: 100/1000=10%

Amount of the supervisory additional capital requirement: 80\*0.375=30

In the first step, the portion of the supervisory additional capital requirement to be maintained in CET1 and T1 capital shall be calculated as follows:

Portion to be maintained in CET1 capital (calculated as a percentage of the minimum capital requirements in 2014): 30\*(4/8)=15

The same value in 2015: 30\*(4.5/8)=16.9

Portion to be maintained in T1 capital (calculated as a percentage of minimum capital requirements in 2014): 30\*(5.5/8)=20.6

The same value in 2015: 30\*(6/8)=22.5

|  |  |
| --- | --- |
| TMM indicators after Pillar 2 adjustments |   |
| CET1 capital adequacy ratio after Pillar 2 adjustments | 70/(1000+12.5\*15)=5.89% | 70/(1000+12.5\*16.9)=5.78% |
| T1 capital adequacy ratio after Pillar 2 adjustments | 85/(1000+12.5\*20.6)=6.76% | 85/(1000+12.5\*22.5)=6.63% |
| Total capital ratio after Pillar 2 adjustments | 100/(1000+12.5\*30)=7.27% | 100/(1000+12.5\*30)=7.27% |

Pursuant to the MNB Decree No. 10/2014, which includes the provisions for the transitional period, for 2014, the minimum CET1 ratio is defined as 4% instead of 4.5%. This may be considered for the target CET1 capital ratio computed from Pillar 2 adjustments as follows: if, for example, the additional capital requirement prescribed by the MNB was 137.5% which, projected to the TREA is a +3% capital requirement, the institution shall add the proportionate part of the +3% capital requirement (4/8\*3=1.5) to the 4% minimum value, whereby the target CET1 capital ratio after Pillar 2 adjustments will be 4+1.5=5.5, and the target T1 capital ratio after Pillar 2 adjustments will be 5.5+(5.5/8\*3)=7.6.

Supervisory additional capital requirement +3%

|  |  |
| --- | --- |
| TMM indicators after Pillar 2 adjustments |   |
| Target CET1 capital adequacy ratio after Pillar 2 adjustments | 4+(4/8\*3)=5.5% | 4.5+(4.5/8\*3)=6.2% |
| Target T1 capital adequacy ratio after Pillar 2 adjustments | 5.5+(5.5/8\*3)=7.6% | 6+(6/8\*3)=8.2% |
| Target T1 total capital ratio after Pillar 2 adjustments | 8+3=11% | 8+3=11% |

#### Capital adequacy throughout the economic cycle

In the future, when assessing the ICAAP, the MNB shall assess whether the institution’s own funds are sufficient to cover the volatility of the economic cycle and whether steps should be taken to address any deficiencies arising from the volatility. As part of this exercise, the MNB shall also examine the adequacy of the total SREP capital requirement (TSCR) and the overall capital requirement (OCR) based on economic cycle forecasts.

# Components and supervisory review of ILAAP

## Internal assessment of liquidity and funding risks by the institution

Liquidity is the institution’s ability to finance the growth of its assets and meet its expiring obligations without undertaking significant and unexpected losses. Liquidity risk is embodied in maturity transformation carried out for the sake of profitability, mass disinvestment before maturity, the renewability of funding, changes in funding costs, environmental effects and the uncertainty of the behaviour of other market players.

Effective liquidity management enables the institution to fulfil obligations under any circumstances.

Two dimensions of liquidity risks can be distinguished:

* liquidity risk is the risk that institutions are unable to meet their financial obligations by the deadline over an overnight, operative (30-day), short-term (1–3 month) and medium-term (3–12 month) time horizon or, owing to the related market liquidity risks, they can sell their balancing capacities with substantial losses only, due to the inadequate depth of the market or other market disturbances. (Market liquidity risk refers to the potential inability of the institution to realize its positions at an adequate market price, i.e. market liquidity risk is the possibility that a market position cannot be closed at the market price within an appropriately short time horizon, only at a less favourable rate. This way, a proper market price can only be realised if the position is retained which may call for the tie-up/taking out of liquid assets).
* funding risks, when institutions cannot meet their financial obligations over a long-term (over a year) time horizon without an intolerable rise in their funding costs. Consequently, institutions are unable to steadily maintain their long-term funding.

Institutions are required to manage liquidity risks effectively. To this end, institutions must have an adequate liquidity risk management framework in place and apply effective risk mitigation techniques which provide them with appropriate liquidity and include a buffer (additional reserves) for covering unexpected market shocks.

The following considerations should be observed regarding this framework:

* The institution should clearly determine the level of liquidity risk which it can tolerate with a view to its business model and market position.
* The executive management of the institution should elaborate a strategy (and regulation guidelines) which keeps liquidity risk under the identified critical level and provides the institution with adequate liquidity. This strategy (and guidelines) must be reviewed at least once per year. The decision on approval and modifications must be made by executive management or a competent body (ALCO), which should also submit a report to the board.
* The institution’s executive management or competent body should incorporate liquidity costs, revenues and risk into internal pricing.
* The institution must have a reliable system, indicators, key risk indicators (KRI) and relevant limits in place for identifying, measuring, monitoring and controlling liquidity risks. In the course of risk identification, the institution must specify the liquidity risk elements which appear in its operations. This system is expected to be capable of taking into consideration the cash flows that derive from assets, liabilities and off-balance sheet items in a specific period.
* The institution must establish and apply its own early warning indicators (EWI), which allow the institution to forecast the preliminary strengthening of liquidity risks.
* The institution must monitor and check its liquidity risk exposures and funding needs, taking into consideration all applicable legal, regulatory and operational limits that relate to the place and transferability of liquid assets.
* The institution’s risk management system must be capable of efficiently diversifying liabilities based on funding terms and must help the diversification of funding resources. The institution must track funding concentrations (funds that exceed 1% of total liabilities.). Furthermore, the institution must assess regularly how quickly it can renew the various liabilities. It must identify and monitor factors which impact the availability and cost of various funding opportunities.
* Institutions that also hold foreign exchange accounts are expected to manage and plan liquidity per currency type. The risk management framework must assess and observe the liquidity impacts of off-balance sheet hedge deals, especially in respect of the deterioration of the forint exchange rates and the potential operating failures of swap markets.
* The distribution of work within the group is a requirement concerning the liquidity management system of group member institutions and so is the clear specification of mandates and responsibilities. The rules must set out the liabilities and obligations of the governing institution to the governed institutions along with the liquidity management responsibilities and duties delegated to governed institutions.
* The institution must actively manage its intraday liquidity positions and risks and must operate suitable payment and settlement systems for this purpose.
* Using stress tests that have been elaborated with a view to regularly run institution-specific and market scenarios, the institution must identify potentially liquid assets and ensure that actual exposures remain under the threshold set by the institution itself. Institutions are expected, as a minimum, to use a one-month survival period in stress testing and are advised to pay special attention to the first one-week period. At the same time, it is important to stretch the stress tests to the date from which the institution is no longer to able cover net outflows with liquid assets (time-to-wall). The results of stress tests must be taken into account in liquidity management processes, in the risk management strategy and policy, in the contingency plan, in the size of the necessary liquidity buffer and potentially in the capital requirement.
* The institution must have a compliant contingency plan in respect of the liquidity crisis, which specifies the steps to be performed in case of an unexpected emergency in order to maintain liquidity. The timeliness of the contingency plan must be tested every year in respect of responsible parties, tasks, reporting and contact.
* Using high quality liquid assets, the institution must set up a liquidity buffer for successfully fighting situations predicted in the stress scenarios. The institution must specify the range of assets to be taken into account as liquidity buffer and rank them by liquidity in an internal regulation. The creation of a liquidity buffer shall not substitute either careful preparation for stress situations or any other measures that serve to manage funding gaps and resources.

Information must be published regularly by the institution to enable market players to assess its liquidity position and liquidity risk management system.

The institution can analyse the expected changes in its liquidity position by comparing the timing (maturity match) of its receivables and payables. It can perform a so-called static analysis which relies on the assumption that payables and receivables will be realized in line with the related contracts (no new loans provided and no new deposits are placed). The other option is a so-called dynamic analysis which assumes the renewal of portfolios. Analyses should cover both normal business operations and liquidity stress scenarios.

The limit system and the specific limit values are important elements of the liquidity management system. The MNB expect the institutions to specify in their liquidity risk management rules the limits and the procedures to follow in case of limit violations, and to prepare a disclosure on limit utilisation. The latter must contain the decision of the organisational unit in charge on the elimination of possible limit violations. Limit values must be reviewed at least annually.

In case the institution takes liquidity risk or certain elements thereof into consideration under another risk type, the MNB requires the declaration of this in the relevant rules. The rules on the risk concerned must include a detailed description of the measurement/management of liquidity risks

## Supervisory liquidity adequacy assessment process

### Comprehensive assessment of liquidity and financing risks

Following the unravelling of the crisis, a significant amount of attention focused on credit institutions’ intraday, short-term and medium-term liquidity, and the sustainability of the institutions’ long-term funding. The topic of liquidity is discussed in detail in the Basel III regulatory framework (coming into effect on a gradual basis), in CRD IV and, in particular, in CRR, as well as the various EBA Guidelines.

From the perspective of supervisory authorities, the monitoring of liquidity risks play a particularly important role in the analysis of financial stability risks at the microprudential and macroprudential level. The primary reason for this is the fact that the liquidity shocks sustained by individual financial institutions may spill over, through various channels of contagion, not only to another credit institution, but also to the financial system as a whole, undermining its stability.

The basic activity of institutions is focused on cash flow transformation as a result of which they are inherently exposed to liquidity and financing risks. For this reason, as a rule, the MNB regards liquidity and financing risks as material risks, which are to be mandatorily managed under Pillar 2. Furthermore, the MNB expects institutions at all times to make every effort to develop the diversified liability portfolio and to actively manage their dependence on funding.

The MNB expects institutions to be fully aware of the documents referred to above and of essential regulatory changes as well as to adjust themselves to them particularly with regard to the Basel III liquidity indicators.

In the framework of the supervisory review process, the MNB shall assess

* the inherent liquidity risk of the institution,
* the inherent funding risk,
* the management and handling of liquidity and funding risks, and
* the institution’s assessment of its risk factors relevant to liquidity and the extent to which it succeeded, based on the factors identified, in addressing the related risk exposures reliably.

Upon evaluating the inherent liquidity risk, the MNB shall

* assess the institution’s short-term and medium-term liquidity risk. In this context, it reviews the institution’s maturity liquidity balance, including contractual maturity gaps and their concentration, broken down by currency, the going concern liquidity balance and gaps; moreover, it examines money market dependency, with special regard to short-term parent bank funding;
* review the institution’s own stress test, uncovered liquidity, drawdown-related liquidity risk and survival period (time to wall survival analyses);
* evaluate the results of the supervisory liquidity stress test[[59]](#footnote-59);
* assess the level of excess liquidity; the quantity and quality of the liquidity buffer and the counterbalancing capacity, including transferable assets and transferable assets that are of extremely high / high liquidity and credit quality, the related market liquidity risks; and the institution’s liquidity coverage ratio (LCR) with the relevant calculations and their analysis.

Upon evaluating the inherent funding risk, the MNB shall

* review the funding profile of the institution along with funding structure and concentration and its development over time, in consideration of the size, share and structure of parent bank funding and the possibilities of accessing such funds,
* assess the stability and sustainability of the institution’s funding and FX maturity transformation with the DMM[[60]](#footnote-60) and NSFR[[61]](#footnote-61) indicators,
* evaluate the financing plan along with the related structural gaps based on the business model of the institution.

With a view to managing and addressing liquidity and funding risks, the MNB shall

* review, based on the business model available, the liquidity strategy and risk appetite of the institution together with the relevant supervisory and internal limits and target values;
* assess the management of intraday liquidity risks, in the context of which it reviews the management of daily liquidity positions broken down by foreign currency, the execution of IG1[[62]](#footnote-62) and IG2 payment transactions together with the related coverage, as well as the process of meeting the central bank requirement in respect of mandatory reserves;
* assess the institution’s risk management processes and control points, the adequacy of compliance with regulatory limits, the institution’s internal indicator and limit system, key indicators, early warning indicators, internal and external reports;
* evaluate the Liquidity Contingency Plan (LCP).

### Quantification of a sound, sufficiently high and efficient liquidity coverage

Liquidity and funding risks are risk types typically not covered by capital, with institutions managing such risks by processes, limits, the diversification of their liabilities and by liquidity buffers. In the event of a significant level of liquidity and funding risks and in the event of deficiencies in the risk management systems, procedures, indicators and their limits and the measurement thereof, the MNB – keeping in mind the principle of proportionality and in addition to prescribing measures designed to improve risk management procedures – may prescribe the holding of additional liquidity in order to ensure the maintenance of the liquidity coverage.

For the purposes of determining specific liquidity requirements, pursuant to Section 181 of the ACI, the MNB shall take into account:

* the business model of the credit institution,
* the arrangements, processes and mechanisms referred to in Section 108(5)f) of the ACI and adequacy thereof;
* the outcome of the supervisory review and evaluation, and
* systemic liquidity risks threatening Hungary

In respect of the level of additional liquidity, the MNB may prescribe:

* compliance with the minimum level of freely available liquid assets of adequate quantity and quality (composition),
* compliance with liquidity indicators in excess of the regulatory limit,
* a level of balancing capacity that ensures a prescribed minimum survival period,
* the level of maximum cash outflow (MCO[[63]](#footnote-63)) for a specific period,
* a minimum liquid asset quantity best fitting the institution’s business model, aligned to the liquidity benchmark of the supervisory authority.

Since the business models and liquidity risk profiles of institutions differ from one another, the MNB should always apply the best benchmarks available, or it may revalue the benchmark used based on the characteristics of the business model.

# Stress tests

Stress testing, as a concept, covers all quantitative and qualitative techniques and risk management methodologies which financial institutions can employ to gain an overview of their exposure or vulnerability to the impacts of exceptional but possible events that may occur due to rare risk events that can have severe consequences. Due to the recent financial and economic crisis, the MNB considers stress tests outstandingly important.

The purpose of Pillar 2 stress tests required in the ICAAP is to assess all material risks of the institution in a comprehensive, integrated and forward-looking manner. Thus, the scope of stress tests (including but not limited to the risk types discussed earlier) includes the consideration of the impact of all market, economic, institutional or political risk factors which may have a perceivable, substantial impact on the prudent and solvent operation of the institution concerned. In this sense, the stress testing methodology discussed herein definitely exceeds CRR requirements. This is equally true for credit risk stress tests[[64]](#footnote-64) to be applied under Pillar 1 by institutions using IRB approaches and for general regulations that relate to Pillar 2 stress tests[[65]](#footnote-65).

In the MNB’s opinion, there is no single “correct” stress testing methodology. The range of approaches acceptable for a specific institution greatly depends on its size, activities, risk appetite and the quality of risk management. With a view to the principle of proportionality, however, the MNB stipulates that the applied stress testing methodology should be sufficiently sophisticated in the light of the aforementioned factors.

Different stress testing techniques represent different ways for assessing an institution’s risks, with each of them capturing different aspects of exposures only. Therefore, the MNB prefers the heterodox approach and believes that the simultaneous application of different methodologies (sensitivity analyses, scenario analyses, etc.) is desirable. The MNB intends to refrain from limiting institutions in following their selected approaches as long as they comply with the regulatory requirements set out herein. What it also means in practice is that in relevant cases the use of qualitative expert estimates is not considered less suitable an approach than the application of quantitative methods and statistical models.

**ICAAP review**

As set out in the Guidelines, the MNB interprets stress tests as a term expressing a comprehensive set of tools and procedures. The large degree of freedom and flexibility in stress testing as an approach is especially useful for two different reasons. On the one hand, the capital calculation methodology geared to considering the individual risk types independently does not in reality offer an opportunity to examine the interaction of risks. In Hungarian context, it primarily (not exclusively) means that the mutual interdependence of credit risks and exchange rate risks, market and liquidity risks, most recently sovereign risks can only be captured within a comprehensive stress test which supplements the individual risk methods. On the other hand, the capital calculation procedures for individual risks may – due to their nature – apply restrictive and simplifying assumptions (e.g. relating to independence, normality) which result in the considerable underestimation of actual risk exposures.

Recently, in addition to practical experience, there has been some theoretical research (e.g. BIS [2012]) which verified the limited applicability of stress tests to fulfil the role of early warning. Despite the above, stress tests represent substantial building blocks for institutions to prepare themselves for risk-conscious operations and for possible crisis situations. Consequently, in the context of the supervisory review process, the MNB expects each supervised institution to have a thorough knowledge about the guidelines on stress testing published by the international supervisory community, about the quantified impact of changes in the most significant environmental factors on the institution’s position and about the main shortcomings of the methods applied in capital calculations. In addition, the MNB also requires that institutions subject to the complex ICAAP and ILAAP review develop stress tests with a professional sophistication similar to the key risk types and that the tests represent an organic element of economic capital calculations. In the MNB’s opinion, this can only be accomplished if

* the individual stress tests raise unambiguous questions, they have a rational concept and their methodology is developed with the recognition that the capital requirement of most risk types represents in itself a potential loss associated with an extreme stress situation;
* one of the key elements of stress tests is the model which determines the transmission (i.e. its impact on the institution) of external environmental shocks which is developed by methodological sophistication and by utilising both past experience and (if possible) basic portfolio data;
* the individual stress tests enable the joint capture of credit and exchange rate risks and the investigation of market and liquidity risks in a uniform framework;
* stress tests – if possible – take into account feedbacks (e.g. institutional reactions, risk mitigation steps) and secondary effects (e.g. risks spill-over, risk evasion possibilities);
* stress tests also extend to mapping shortcomings in the individual capital calculation methods applied within the framework of economic capital calculations, and if possible, they indicate the capital requirement sensitivity linked to the individual risk types for the purpose of changing the methodology and applied assumptions.

The MNB views stress testing primarily as a diagnostic tool because the capital requirement of most risk types is ab ovo the coverage of a possible extreme loss. In line with the above, the MNB does not require institutions to recognise the results of the stress tests as a risk capital requirement in all cases. It expects, however, capital generation of sufficient extent in the following cases:

* if the stress tests for model assumptions performed in connection with the individual risk types indicate a large degree of sensitivity of the risk capital requirement;
* if stress analyses aimed at jointly taking into account several risk types (e.g. examining credit and foreign exchange risks in a uniform methodological framework) indicate a concentration of risk exposures (exceeding the total sum of risk elements);
* if the value of the given indicator exceeds the designated threshold value in the case of a stress testing methodology which serves a procyclical capital generation policy and influences the level of capital requirement based on the value of indicator variables.

With a view to the importance of the appropriate survey of risk exposures, the MNB may additionally raise the Pillar 2 capital requirement for institutions subject to the complex ICAAP and ILAAP review in the absence of significant deficiencies experienced in stress tests.

## Reliability of applied risk models

The risk exposure of institutions is determined by the operation of the financial system which is a complex network. The interworkings within this network and their uncertainty make the clear identification, accurate pricing and proper management of risk very difficult. Due to the complexity of the system, economic capital calculation models can only capture the aggregate risks of the institution in an indirect manner and must employ various assumptions regarding correlations between asset prices and risk factors. Empirical experience shows the latter tend to grow significantly (in absolute value) in a stress situation, thus models which focus on regular operations often underestimate the actual risks under a crisis. This problem not only applies to risks within specific risk types but also to the interrelations of risks. Therefore, the MNB requires institutions to have a clear view of the performance of their risk models perform in crisis situations.

## Enforcement of an integrated risk management approach

For numerous reasons, risk types are discussed separately in existing business and regulatory practice and thus they supply inputs for economic capital calculations independently of each other. Recent developments (the integration of money and capital markets, securitisation, economic bookkeeping techniques, spreading of derivatives, etc.), however, blurred the differences between risks from in many aspects. A typical example would be loan products offered with a variable interest rate and disbursed in foreign currency (a product category of special significance for the Hungarian financial system). In the case of these products, market risk and credit risk factors cannot be separated clearly; and the crisis highlighted the organic relationship between liquidity risk and the two previously mentioned risk types.

The MNB regards integrated, comprehensive approaches as highly important because the consideration of cross-effects among risks often produces a much higher risk exposure than the mere summing of exposures associated with individual risk types (i.e. aggregation that lacks any diversification).

In the light of the considerations outlined above, stress testing methodologies that are limited to changing the input parameters of internal risk models (e.g. shifting of PDs, increase of LGDs) are not considered sufficient by the MNB. Furthermore, the MNB requires institutions to have a clear-cut and identifiable stress testing program that is embedded in a coherent narrative. We also consider it necessary that supervised institutions should interpret and understand the results of their stress tests so that test results can serve as a basis of clearly defined risk mitigation measures. As a prerequisite of all that, the MNB requires the top management body of the institution to assume responsibility for, be adequately informed of and actively participate in the operation of the stress testing program and in the evaluation of results.

Regarding the values used for the tests, the MNB requires that the stress tests (also) reflect the effect of environmental shocks that are really exceptional and significant[[66]](#footnote-66). With a view to the recent financial crisis and macroeconomic and business developments, the MNB considers it indispensable that institutions use their experiences gained during the crisis when selecting risk magnitudes and methods and act in a sufficiently conservative manner.

Therefore, stress tests must be defined with a view to the institution’s portfolio characteristics and assumed risks and in line with the actual external environment. In case any change (or expected change) occurs in these factors, the applied tests must be revised. The MNB requires institutions to carry out this revision annually even if the changes of the aforementioned factors would not call for it. The MNB requires that stress tests are run more frequently than that.

In the current situation, the MNB believes that stress tests must indispensably become organically integrated into the risk management practices of institutions and that their results should be utilised by the institution in the following areas:

* verification of the results of capital calculations and the identification of their reliability
* during the evaluation of the liquidity position and capital planning;
* elaboration of the risk strategy;
* overall top management decision-making, e.g. elaboration of emergency scenarios, setting of limits, etc.;
* potentially for the calculation of additional regulatory capital requirement after consultation with the MNB;
* if necessary, for taking adequate risk-mitigating measures (equity raise, strategy, use of stricter limits, etc.)

In order to ensure that regulatory requirements are fulfilled in practice, the MNB requires institutions to have a comprehensive stress testing policy that is documented in detail and has been approved by the institution’s top management. This policy must contain all important aspects of the stress testing process (detailed description of the applied method, comparison and utilisation of results, organisational units in charge, etc.). It is also important that the institution should have sufficient resources and an adequate pool of experts for stress testing. It should be noted that as a supplement to the various stress testing methodologies, a reverse stress test can also be performed. When a reverse stress test is applied, scenarios and parameters are sought which could potentially shake the institution (e.g. by causing a significant loss, loss of capital or a tense liquidity situation). The resulting parameters are then analysed based on the probability of their occurrence (monitoring). Although the application of this method is not mandatory, it may contribute to the development of more conscious risk management.

In order to assess systemic risks in a more reliable manner, the MNB reserves the option to require the application of specific stress scenarios at the supervised institutions. The benefit of that exercise would be that the cross-checking of models and results would enable both the MNB and the institutions to gain a more accurate picture of the institutions’ risk exposures and the suitability of their stress-testing procedures.

Beyond the general considerations outlined above, the MNB will observe and apply the CEBS Guideline on Stress Testing (GL32), issued 26 August 2010, when forming an opinion on the stress tests of institutions. The MNB expects supervised institutions to study the referenced guideline in detail and strive for complying with its provisions.

# Supervisory expectations concerning the internal capital requirement calculation and liquidity adequacy assessment of small institutions and the relevant supervisory review

## Application of the principle of proportionality

The principle of proportionality is a key consideration of any supervisory review. Supervisory expectations concerning the ICAAP and ILAAP depend on the

* nature,
* scale,
* complexity
* and, naturally, the risk exposure of the institution’s activities.

Thus proportionality is a relative term and results from the review of multiple factors as listed above. It should be noted that the fulfilment of proportionality applies to all institutions that are subject to the CRD. This way, based on the above factors, the depth of the supervisory review and evaluation process (SREP) and the intensity of the dialogue with the institution will be different. During the SREP, so-called small institutions should be mentioned and differentiated.

## Definition of small institutions

An institution should be considered small if it meets the majority of the following criteria:

* its activities are non-complex and focus on a limited product range,
* it has a relatively small market share,
* it does not use any advanced methods which are approved by the MNB to calculate the capital requirement of credit, operation or market risk,
* it mainly operates in the territory of Hungary and does not have any significant cross-border activities,
* it describes itself as a small institution in its own assessment.

The final decision is taken by the MNB as to whether an institution can be treated as a small institution.

Concerning the elaboration of the ICAAP and ILAAP at small institutions, the MNB recommends that interest representation organisations, central organisations and professional associations play a coordinating, directing role in that process. These organisations may elaborate guidelines and methods for the ICAAP or ILAAP for their member institutions, which the institutions can adapt and apply in their operations. In this case, the MNB will negotiate for the compliance of the methods with the interest representation or other central organisations which elaborated them. Nevertheless, the MNB will review the application of the methods upon the review of individual institutions as well.

## Supervisory expectations concerning the ICAAP of small institutions

While individual principles can be applied proportionally, small institutions, too, have to meet all ICAAP related requirement of the MNB[[67]](#footnote-67).

This way, all relevant risks should be taken into consideration in the internal capital requirement calculation process. The purpose of making the ICAAP mandatory for institutions is not just to establish compliance with the new capital requirement regulation, but to make the ICAAP a key management instrument for institutions that are subject to the new laws. The purpose of implementing and regularly employing the ICAAP is to strengthen the risk-aware governance of institutions, to measure the institution’s risk level regularly and to determine the amount of capital that is necessary to cover unforeseeable losses. The ICAAP includes several elements which institutions have been using already: partly in their annual business and strategic planning processes and partly for calculating the capital adequacy ratio which has been a standard requirement to date.

Small institutions can comply with obligations set out in domestic ICAAP regulations by examining their exposure to risk types listed herein and the amount of capital which serves to cover those risks. There might be other risks; however, which are not presented in this material. In these cases, it is the institution’s responsibility to ensure that the ICAAP considers such risks as well. Institutions should also be aware that capital is only the ultimate mitigant of risks and that the use of more efficient risk management and control methods can mitigate those risks.

## Methodologies applied by small institutions

There is no one single correct process when setting up the ICAAP. Small institutions could, for example, adopt a method based on the Pillar 1 minimum capital requirement and then assess if extra capital proportionate to non-Pillar 1 risk is necessary or not.

An institution choosing this method needs to assess the following:

* whether the capital requirement calculated on the basis of Pillar 1 appropriately reflects all material risks on a risk-by-risk basis;
* amount of capital that should be allocated due to Pillar 2 risks and exposures deriving from external factors.

Similarly, small institutions can choose the building block approach, using different methodologies for the individual risk types and then calculating the sum of the resulting capital requirement. When choosing to employ this approach, the institution has to consider if it is able to collect the information necessary for operating this model and if it is in possession of the instruments required for capital requirement calculations.

An institution which chooses to use a structured approach will need to assess separately the capital amounts for all Pillar 1, Pillar 2 and external risks and then add up the capital requirement calculated for the individual risk types. Sensitivity analyses can be used for determining whether a risk type should be considered relevant or not.

## Steps of internal capital requirement calculation

Regardless which methodology a smaller institution decides to adopt, it needs to compare its actual and future capital with the actual and future internal capital need arising from the assessment. The preparation of a capital plan is of key importance. The internal capital requirement calculation consists of a number of steps: the identification of risk exposures and, based on these exposures, the calculation of required capital.

* Risk identification: as the first step, the institution has to draw up a list of relevant risk types. When doing so, the primary reason of past losses should be identified along with the likelihood of the occurrence of similar losses. Upon compiling the list, not only historic information should be considered but expected future events as well.
* Capital assessment: for each risk listed as relevant, an assessment is to be made of the potential loss which the risk can cause to the institution. The amount of capital to cover these risks can be calculated as the sum of all such potential losses.
* Forward capital planning: the institution should not only consider the present situation but also assess the amount of capital which will be available to it and see if it is in line with the likely capital requirement based on the institution’s business plan.
* ICAAP outcome

Based on the above steps, the institution has to determine the amount of internal capital it should hold with a view to the actual situation and expected future events. It must determine the quality and ratio of the capital items required for covering the risks.

## Typical risks of smaller credit institutions

In respect of small institutions, typically the following main risks are assessed:

* control/management risk (internal governance),
* credit risk,
* concentration risk (individual customers, geographical, industry-specific),
* interest rate risk,
* liquidity risk,
* operational risk,
* strategic risk,
* risk of external factors.

Obviously, individual credit institutions may have further risks, which should be evaluated by the institution concerned.

## Activities generating unusual, additional risks at investment firms are the following:

At investment firms, additional risks may arise in respect of the following activities:

* providing or mediating services for high gearing transactions,
* providing or mediating services for “high frequency trading”,
* services for investment loans or deferred financial performance,
* own-account trading (in the case of transactions conducted in favour of the client by using own account).

## Supervisory reviews at small institutions

The MNB conducts a simplified review on an annual basis with questionnaires for small institutions, and a review of higher intensity in the scope of comprehensive investigations with a regularity of 3 to 5 years. This method can ensure that all of the information necessary for the MNB to make decisions in the course of the supervisory reviews are efficiently collected and processed despite the large number of small institutions.

The MNB conducts a questionnaire survey every year and compares its results with the information received from data supply as well as on-site and off-site reviews, as a result of which it identifies the institutions against which a supervisory measure needs to be taken in the context of the supervisory review.

If the small institution finds it necessary within the ICAAP to specify a higher capital requirement and the MNB does not establish an additional capital requirement, the MNB will consider the higher capital requirement calculated by the institution as the total SREP capital requirement.

The assessment of the adequacy of individual institution’s liquidity is also a part of the supervisory review process. During the review, the MNB evaluates the institution’s liquidity buffer and financing policy, as well as its regulations and mechanisms designed to measure and address liquidity and funding risks. Upon the assessment of the liquidity adequacy of small institutions the MNB prefers adequate risk management to the generation of an additional capital buffer.

## Supervisory measures against small institutions

The main objective of the supervisory review is to ensure for small institutions a risk-conscious operation and efficient prudential supervision rather than the imposing of additional capital generation. Nevertheless, if the MNB finds that, based on internal or external characteristics of the institution, its Pillar 1 or ICAAP capital requirements are not in conformity with the risks assumed, it may – similarly to large institutions – set an additional capital requirement.

The relationship between the deficiencies detected at small institutions and the supervisory measures to be applied within the framework of the supervisory review is presented in the tables included in the annex (as regards investment firms, the distribution of typical operational risks according to activities is shown in a separate table). The MNB provides the tables, the categorisation of deficiencies and the percentage of the additional capital requirement as a starting point. In reality, other aspects may arise and be considered.

The definition of additional capital requirement is not the only tool for measures taken within the framework of the supervisory review process. Other tools may include requests for risk reduction, requests for the improvement of the quality of risk management, for the modification of internal regulation, or for organisational change, the proposal for internal education and training, the hiring of a new manager or expert. If the given problem or deficiency is eliminated, it is taken into account by the MNB during the next supervisory review. In justified cases, changes take place in the institution’s market position, business activity, risk profile or risk management system which changes significantly influence the internal capital requirement, the institutions may propose interim review of the capital ratio, or the MNB may decide to conduct an extraordinary SREP.

### Supervisory measures at small credit institutions

Within the framework of the supervisory review process, a supervisory measure must be taken or an additional capital requirement should be prescribed for the credit institution if any of the situations listed below exists coupled with a deficient internal control system and is insufficiently covered by capital and thus, overall, prudent operation is not guaranteed:

* the institution operates under conditions that are riskier than the average (e.g. geographical environment, higher-risk clients)
* any of its indicators shows a higher risk level (e.g. bad asset quality, operational losses, liquidity difficulties, high interest rate risk, concentration risk, etc.),
* the MNB or any other external investigation reveals management, risk management or internal control problems,
* recent frauds, abuses or operational problems have been revealed jeopardising long-term operation,
* the institution is engaged in an activity that is not typical for small institutions (e.g. cross-border services, trading of advanced derivative instruments, purchase of foreign securities),
* the institution launches new activities or penetrates new markets which will presumably have a significant impact on its operation,
* in contrast with its strategic objectives, the institution loses a significant market share in its scope of operation, the number of its clients and volume of its business fall to a level that jeopardises further operation,
* the financial terms and conditions the institution offers significantly differ from the usual market terms and conditions and, according to the MNB’s assessment, this entails an unsustainable business model.
* the institution fails to comply with fundamental procedures set out in supervisory recommendations and methodological guidelines thus jeopardising prudent operation,
* the institution lacks management knowledge, expertise or technical and IT conditions which would be indispensable for the activities it is engaged in or the risks implied therein,
* trust by its clients or market partners towards the institution declined,
* the institution’s strategy cannot be regarded well-founded due to the expected macro-economic and sector-specific conditions and to its position and business activity,
* the quality of the ICAAP applied by the institution is not adequate,
* the institution does not perform sensitivity analyses or stress tests to determine the growth rate of its material risks in significant economic recessions and to define the volume of capital needed to cover such risks.
* the behaviour of the institution’s owners does not allow for the efficient functioning of owner’s control.

Due to the limited possibilities of tailor-made assessments, the level of the additional capital requirement is calculated in a pre-regulated way with a view to the relative frequency rate of the MNB’s risk categories: high (category 1), medium (category 2) and low (category 3). For the purpose of guidance the typical presence of low, medium and high risks results in an additional capital requirement of 33, 66 and 100 percent, respectively, of the regulatory capital requirement, but the actual final figure is mostly subject to further assessment.

### Supervisory measures at investment companies

In the case of investment firms, in the MNB’s opinion the business models or organisational mechanisms generating unusual, additional risks are, in particular, the following:

* the broker may have authorisation over the client account,
* the broker has limits and/or competences above the usual ones,
* opening and keeping (without justification or control) suspense accounts, transit accounts, technical accounts,
* cross-border services,
* trading with advanced derivative instruments, purchasing foreign securities,
* utilising third-party depositaries,
* compared to the size of the front office, the back office or the control unit does not have sufficient material or human resources,
* lack of physical and logical separation of retail and back office systems,
* the institution’s ownership relations do not provide for the efficient functioning of owner control,
* the MNB or any other external investigation reveals management, risk management or internal control problems,
* recent frauds, abuses or operational problems have been revealed jeopardising long-term operation,
* the institution launches new activities or penetrates new markets which will presumably have a significant impact on its operation,
* the institution fails to comply with fundamental procedures set out in supervisory recommendations and methodological guidelines thus jeopardising prudent operation,
* the institution lacks management knowledge, expertise or technical and IT conditions which would be indispensable for the activities it is engaged in or the risks implied therein,
* trust by its clients or market partners towards the institution declined,
* the institution’s strategy cannot be regarded well-founded due to the expected macro-economic and sector-specific conditions and to its position and business activity,
* the quality of the ICAAP employed by the institution is inappropriate.

In the case of investment firms, if the majority of the problems revealed within the supervisory review process or in data supply or in supervisory investigations fall into category III, the SREP capital requirement is 8–10% of the capital adequacy ratio or 100-120% of the initial capital. If they fall into category II, the SREP capital requirement is 8-12% of the capital adequacy ratio or 100-160% of the initial capital and in category I it is 8-16% of the capital adequacy ratio or 100–200% of the initial capital.

The maximum additional capital requirement that can be prescribed within the framework of the supervisory review is determined by the effective legal regulations on the basis of the capital requirement calculated according to Pillar 1 (the sum of the Pillar 1 capital requirement and the additional capital requirement prescribed by the supervisory review process), stipulating that the additional capital requirement may not be higher than the double of the capital requirement specified in Article 105(2) of Act CXXXVIII of 2007 on investment enterprises and commodity exchange service providers (Bszt.). In the case of investment firms whose Pillar 105 capital requirement is defined under Article 105(1)b) of the Bszt., the SREP capital requirement is determined as the requirement of a capital adequacy ratio of 8 to 16%, whereas in the case of investment firms whose Pillar 1 capital requirement is defined under Article 105(1)a) of the Bszt., the SREP capital requirement is determined as a requirement of between 100 and 200% of the initial capital necessary for the commencement of activities.

## Closing the supervisory review

Following the processing of the questionnaires, the MNB informs institutions about the result of the review (as well as the outcome of any consultations) in a prudential letter. The MNB documents the quantified result of the supervisory review process in the SREP Review Form attached to the prudential letter. If the MNB does not see compliance with the prescribed total SREP capital requirement (TSCR) and the overall capital requirement (OCR) guaranteed, it may issue a resolution to call for the institution to provide additional capital.

If the MNB conducts the supervisory review in the context of a comprehensive investigation, it will be closed upon the conclusion of the investigation.

# List of Documents

In the course of the supervisory review, institutions are required to present the ICAAP they are using. The official ICAAP and ILAAP documentation submitted to the MNB must always include the presentation of implemented methods that have been approved by top management.

In order to enable an accurate assessment, the data in the submitted documentation must always reflect the latest information. Otherwise (i.e. if it has no access to updated figures and methodologies), the MNB will have no choice but to apply additional conservatism when forming an opinion on the capital and liquidity adequacy of the institution.

This chapter only provides suggestions regarding the chapters to be considered for inclusion in the submission. Both the format and the contents of the document are for the institution to decide on. However, when compiling the documentation, institutions must bear in mind that they will have to present and defend their capital calculation methods and results, as well as the system in place to assure adequate liquidity. It is a supervisory expectation regarding the submitted document that it cites all arguments for defending the calculations of the institution.

## Summary

* Presentation of institution-specific and group-level risk strategy as a separate document (the documentation of the ICAAP and the ILAAP must sufficiently present the organisational, governance and supervisory functions of risk management along with the related internal audit mechanisms).
* Brief presentation of the major activities/business lines of the institution/group. In case of groups, it should be specified which group members are covered by the ICAAP and the ILAAP.
* Overview of the applied internal capital calculation method(s) and any changes thereof.
* Documentation of a use test. The institution must present the areas where it uses the results of the ICAAP. This presentation can impact substantially the supervisory assessment of the reliability of capital calculations. The relation between ICAAP results and available capital.
* Evaluation of the compliance of the institution’s risk management methods.
* Presentation of the institution’s internal self assessment (GAP analysis) and the resulting action plans, presentation of the results of annual ICAAP and ILAAP reviews.
* Brief assessment of the institution’s material risks, presentation of changes since the previous assessment.
* Time of the capital and liquidity adequacy assessment exercise, specification of group members covered, name of persons conducting and approving the assessment.

## Presentation of actual and target financial, liquidity and capital positions

Capital plan in detail: capital requirement-capital expenditure, internal/external resources, dividend policy

## Detailed presentation of capital adequacy calculations

* documentation of methodologies established for identifying and managing risks (including other risks);
* detailed presentation of calculation methods and results, specification of confidence level and conditions in the case of an economic capital calculation;
* date and time horizon of the calculation;
* a map of risks (including other risks), definition of risks;
* presentation of material risks that have been considered in the ICAAP, comparison to Pillar 1 calculation results where necessary, comparison to the institution’s risk appetite (limit) concerning a specific risk, If Pillar 1 and Pillar 2 capital requirements are different, differences must be reconciled in a detailed, itemised manner;
* risk mitigants;
* presentation of methodology and assumptions (risk management approach);
* consideration of other risks in the internal capital allocation process;
* presentation of the findings and results of stress tests and scenario analyses;
* presentation of the aggregation procedure, the correlation and diversification effects considered including an explanation thereto;
* assessment of the compliance of the institution’s risk management methods and processes (self-assessment: weaknesses, deficiencies, action plans).

As a requirement concerning the submitted documentation, the general methodology section (theory, models, etc.) and the specific numeric results (capital figures, model parameters etc.) must not be separated for such separation would cause difficulties in the assessment of quantitative results and the examination of capital adequacy. The document must present in detail the manner in which the capital requirement of a specific risk type was calculated. The MNB is only able to evaluate the relevant risk capital requirement in the light of the applied models. Without knowing these models, the MNB has no choice but to have reservations regarding the presented numeric results. In case the institution covers a certain risk type by way of processes (and not capital), it is required to support this decision with convincing arguments (e.g. strategy and reputation risks may belong here).

## The integration of the ICAAP methodology into processes

* demonstration and assessment of the level of integration of the ICAAP into decision-making processes,
* outcome of the ICAAP review, main findings,
* planned and current changes to the ICAAP.

The MNB reviews the ICAAP in the context of risk cycles, in accordance with and under the framework of its audit plan. Therefore, underlying documentation should only be submitted at the request of the MNB, unless the ICAAP mechanisms have been subject to material changes. If so, the MNB must be informed of the major changes.

## Description of the Internal Liquidity Adequacy Assessment Process

For the evaluation of the ILAAP, institutions must at least submit the following documents:

* current liquidity strategy;
* liquidity plan, liquidity crisis plan (LCP), current liquidity plan;
* liquidity risk reports (for the past 12-month period, including 3 daily reports, one of which should be as at the end of the year);
* liquidity stress tests (assumptions, results);
* related effective internal liquidity regulations and regulations on internal funds transfer pricing;
* values and limit values of the early warning indicators during the past one-year period, description of responses to any actual warning;
* models, assumptions, segmentations and time series applied in quantifying deposit outflows;
* internal audit report relating to the liquidity risk;
* full list of limits broken down by quarter;
* explanation of the calculation of the Liquidity Coverage Ratio (LCR) and the Net Stable Financing Ratio (NSFR) pertaining to the “as-of-date” of the audit;
* list of group financing transactions.

# Annexes

Annex 1: Supervisory responses to the revealed deficiencies at small institutions

Annex 2: Supervisory responses to the revealed deficiencies at investment firms

Annex 3: Typical operational risks of investment firms broken down by activity

Annex 4: Guidelines on risky portfolios (available separately on the MNB’s website)

Annex 5: “Internal model to be applied for calculating foreign exchange rate risk” (available separately on the MNB’s website)

Annex 1: Supervisory responses to the revealed deficiencies at small institutions

|  |  |  |  |
| --- | --- | --- | --- |
| Revealed deficiency, problem | Supervisory measure | Problem category | Primary sources of information |
| Operation under conditions with above average risks, the negative impacts of macroeconomic cycles | Request for the diversification of the activity | II | Data supply, questionnaire, MNB investigations |
| High geographic concentration risk | Closer attention to risk management | II | Questionnaire, MNB investigation, sector analysis |
| The institution’s strategy is not well-founded | Request for changing the strategy | II | MNB investigation, data supplies  |
| The owners’ dividend policy does not provide for the necessary internal capital increase | Call the owner’s attention to the potential problems |  II | Data supply, questionnaire |
| Deterioration of trust (reputation risk) | Closer supervisory monitoring of the activity |  I | MNB investigation, market information, questionnaire |
| Lack or weakness of ownership control | Request for stronger owner’s control | II | Data supply, MNB investigation |
| Deficiencies in the capacities or expertise of executives | Request for the elimination of deficiencies, order to conduct training, further training | I | Investigations of the MNB and other organisations, lessons of prudential discussions |
| Problems related to the qualification and professional experience of executives out of the scope of the MNB | Request for professional further training | II | Questionnaire, MNB investigations |
| Non-compliance with earlier supervisory resolutions | Obligation to comply with supervisory resolutions, penalty | I | MNB investigation, questionnaire |
| Non-compliance with MNB recommendations and methodological guidelines | Request for compliance with the recommendations, guidelines | II | MNB investigation |
| Disregarding other MNB notifications (e.g. management letters, CEO circulars) | Closer monitoring of MNB notifications |  II | MNB investigation, questionnaire |
| The MNB or any other external investigation reveals management, risk management or internal control problems | Obligation to rectify risk management and control deficiencies | I | Investigation documents of the MNB and other organisations  |
| Significant deficiencies in the market risk management and control systems | Obligation to rectify risk management and control deficiencies | I |  MNB investigation, data supply |
| The services and products provided by the institution are non-marketable and do not adjust to market demands | Request for the modification of the product and service range and the business model | II | Investigation documents of the MNB and other organisations, data supply |
| Performance of activities not typical for small institutions | Closer supervisory monitoring of the activity | II | Questionnaire, MNB investigation, data supply |
| New types of activities, markets | Closer supervisory monitoring of new activities and markets | II | Data supply, MNB investigation, questionnaire |
| Falling market share/growth rate below the sector average | Request for the modification of the business model and business policy | II |  MNB investigation, questionnaire, data supply, HFSA analyses |
| The institution’s client structure is questionable, it is a highly concentrated sector due to products or debtor age. | Request for the modification of the client structure | II | Investigation documents of the MNB and other organisations, data supply |
| The MNB or any other external investigation reveals an unauthorised activity | Obligation to dispense with unauthorised activities | II | Investigation documents of the MNB and other organisations, data supply |
| The institution employs unacceptable tools in its acquisition, marketing and disclosure policies. | Request for changing acquisition, marketing and disclosure policies. | II | Investigation documents of the MNB and other organisations, data supply |
| Asset quality is in the lowest 10–20% range compared to similar credit institutions | Request for the reduction of credit risks | II | Data supply |
| Asset quality is in the bottom 10% compared to similar credit institutions | Request for the reduction of credit risks | II | Data supply |
| Substantial credit losses in the past three years exceeding 5% of the equity. | Investigating the cases of credit losses | II | MNB investigation, data supply, questionnaire |
| The rate of suspended interests is at least 30% higher than the sector average. | Investigating the cases of credit losses | II | Data supply |
| Significant deficiencies in the credit risk management and control systems | Obligation to rectify risk management and control deficiencies | I | MNB investigation, investigation documents received from other organisations |
| Clients representing higher credit risk than average based on their ratings and industry risks | Order for more detailed reports and stricter risk management procedures | II | Questionnaire, MNB investigation |
| Introduction of new loan products, including especially unusual and new products in the Hungarian market. | Monitoring of new products | II | Questionnaire, MNB investigation |
| The credit institution operates with ratios close to the statutory prudential limits (with less than 10% deviations) | Closer monitoring of ratios, prudential limits | II | Data supply |
| High country risk | Closer supervisory monitoring of the activity | Surplus capital requirement prescribed based on separate methodology | Data supply |
| Substantial losses in the last three years arising from market risks | Investigating the causes of market risk losses | II | Questionnaire |
| Products with exceptional conditions | Call for a review of conditions | II | MNB investigations, questionnaire |
| Interest rate sensitivity analysis indicates high risk | Request for the improvement of interest rate risk management techniques | Surplus capital requirement prescribed based on separate methodology | MNB investigations, data supply |
| Frequent liquidity problems, no access to additional capital, GAP analysis indicates high maturity mismatch. | Request for developing the liquidity risk management techniques | II | Questionnaire, data supply, MNB analysis |
| Substantial losses in the last three years arising from operational risks | Investigation of the source of losses arising from operational risks | II | Questionnaire |
| Outsourcing of significant activities, insufficient attention is paid to the entities performing outsourced activities. | Request for closer attention to the outsourced activity | II | Data supply, MNB control, questionnaire |
| Documentation and administrative problems (not only operational risk related problems) | Request for the elimination of documentation and administrative deficiencies | II | MNB investigation, client complaints, data supplies |
| IT deficiencies | Request for the elimination of IT deficiencies | II | On-site and off-site investigations, clients’ complaints |
| The ICAAP value is higher than under Pillar 1 | Additional capital requirement in accordance with the ICAAP value and the result of the MNB’s risk assessment | I | Data supply, questionnaire |
| Decline in own funds compared to the end of the previous year in excess of 10%. | Obligation for the formulation of a capital plan |  II | Data supply |

Annex 2: Supervisory responses to the revealed deficiencies at investment firms

|  |  |  |  |
| --- | --- | --- | --- |
| Revealed deficiency, problem | Supervisory measure | Problem category | Primary sources of information |
| Operation under conditions with above average risks, the negative impacts of macroeconomic cycles | Request for the diversification of the activity | II | Data supply, questionnaire, supervisory investigations |
| Lack or weakness of ownership control | Request for stronger owner’s control | II | Data supply, supervisory investigation |
| The institution’s strategy is not well-founded | Request for changing the strategy | II | Supervisory investigation, data supplies |
| Deterioration of trust (reputation risk) | Closer supervisory monitoring of the activity |  I | Supervisory investigation, market information, questionnaire |
| Deficiencies in the capacities or expertise of executives | Request for the elimination of deficiencies, order to conduct training, further training | I | Investigations of supervisory authority and other organisations, lessons of prudential discussions |
| Problems related to the qualification and professional experience of executives out of the scope of the MNB | Request for professional further training | II | Questionnaire, supervisory investigations |
| Non-compliance with earlier supervisory resolutions | Obligation to comply with supervisory resolutions, penalty | I | Supervisory investigation, questionnaire |
| Non-compliance with MNB recommendations, methodological guidelines | Request for compliance with the recommendations, guidelines | II | Supervisory investigation |
| Disregarding other MNB notifications (e.g. management letters, CEO circulars) | Closer monitoring of MNB notifications |  II | Supervisory investigation, questionnaire |
| The MNB or any other external investigation reveals management, risk management or internal control problems | Obligation to rectify risk management and control deficiencies | I | Investigation documents of supervisory and other organisations  |
| The services and products provided by the institution are non-marketable and do not adjust to market demands | Request for the modification of the product and service range | II | Investigation documents of supervisory and other organisations, data supply |
| New types of activities, markets | Closer supervisory monitoring of new activities and markets | II | Data supply, supervisory investigation, questionnaire |
| The institution’s client structure is highly concentrated according to sectors or products. | Request for the modification of the client structure | II | Investigation documents of supervisory and other organisations, data supply |
| The MNB or any other external investigation reveals an unauthorised activity | Obligation to dispense with unauthorised activities | II | Investigation documents of supervisory and other organisations, data supply |
| The institution employs unacceptable tools in its acquisition, marketing and disclosure policies. | Request for changing acquisition, marketing and disclosure policies. | II | Investigation documents of supervisory and other organisations, data supply |
| Significant losses caused by credit risks in the past three years | Investigating the cases of credit losses | II | Supervisory investigation, data supply, questionnaire |
| Significant deficiencies in the credit risk management and control systems | Obligation to rectify risk management and control deficiencies | I | Supervisory investigation, investigation documents received from other organisations |
| Significant losses caused by market risks in the past three years | Investigating the causes of market risk losses | II | Questionnaire |
| Significant deficiencies in the market risk management and control systems | Call for a review of conditions | II | Supervisory investigations, questionnaire |
| Frequent liquidity difficulties | Request for developing the liquidity risk management techniques | II | Questionnaire, data supply, supervisory analysis |

Annex 3: Typical operational risks of investment firms broken down by activity

| Activities/loss category | Operational risks | Problem category |
| --- | --- | --- |
| Accepting and transferring orders, executing orders, portfolio management |
| Clients, products and business practice | execution of the transactions without giving an order | I  |
| or |
| Internal fraud (if intentional) |
| Clients, products and business practice | acceptance of orders without appropriate documentation (e.g. the lack of sound recording) | I  |
| or |
| Internal fraud (if intentional) |
| Clients, products and business practice | non-compliance with the requirements on the acceptance of orders (deals made outside the designated business premises, the use of mobile devices in a manner different from the internal rules) | I  |
| or |
| Internal fraud (if intentional) |
| Clients, products and business practice | employee mistakes, errors (faulty recording of client’s orders, fat finger) | II  |
| Clients, products and business practice | deals made without collateral | I  |
| or |
| Internal fraud (if intentional) |
| Clients, products and business practice | wrong allocation | II  |
| or |
| Internal fraud (if intentional) |
| Clients, products and business practice | detecting possible contradictions between the clients’ trading activity and the compliance tests, the lack of warning signs | I  |
| or |
| Internal fraud (if intentional) |
| Execution, delivery and process management | improper execution, erroneous delivery (e.g. duplicated execution, failure of execution) | II  |
| Clients, products and business practice | the lack of limiting risky transactions, the lack of increased inspection (high-gear transactions) | I  |
| or |
| Internal fraud (if intentional) |
| Clients, products and business practice | broker’s negligence, insufficient information | II  |
| or |
| Internal fraud (if intentional) |
| Employer’s practice and labour safety | the lack of regulation on personal business activities (the possibility of trading without restrictions) | II  |
| Employer’s practice and labour safety | brokers’ disposal over client accounts with authorisation (quasi portfolio management) | I  |
| Employer’s practice and labour safety | the lack of control over the relationship between clients and employees  | II  |
| Execution, delivery and process management | the lack of limits set in trading systems  | II  |
| Execution, delivery and process management | the lack of limits set for brokers | II  |
| Execution, delivery and process management | the lack of regular review of limits | II |
| Execution, delivery and process management | the use of automated trading systems without controls (robots, algorithms (High-Frequency Trading (HFT)) | I  |
| Employer’s practice and labour safety | excessive powers granted to brokers (Rogue trader) | I  |
| Employer’s practice and labour safety | the treatment of authorisations (the access of the trading area to back-office systems, unauthorised access to clients’ data) | II  |
| Clients, products and business practice | the use of monitoring the fulfilment of transactions (e.g. confirmation of performance by the trading area) | II  |
| Custody and registration of financial instruments, as well as keeping client accounts thereof, keeping custody of securities accounts thereof, the registration of printed securities and keeping client accounts |
| Internal fraud | issuing fraudulent balance statements, statement of accounts, other documents for the client | I |
| Clients, products and business practice | confirmations do not reach the client (confirmations requested to be kept at the service provider, confirmations via the broker) | II |
| Execution, delivery and process management | recording fault, the lack of control over reverse entries, insufficient documentation | II |
| Execution, delivery and process management | partner risk – high exposure against third party depositories, the lack of partner risk limits | II |
| Execution, delivery and process management | the handling of client accounts (liabilities), clients with accumulated liabilities | II |
| Execution, delivery and process management | Segregation deficiencies  | I |
| Execution, delivery and process management | following the deal, its data and certificates are not immediately forwarded to the back office | II |
| Execution, delivery and process management | opening and keeping suspense accounts, transit accounts, technical accounts (without justification and control) | I |
| Execution, delivery and process management | the possibility of opening fictitious accounts, the lack of screening fictitious accounts (accepting positions built on each other by creating fictitious client accounts in a value manifolds exceeding the relatively low trading limit) | I  |
| Execution, delivery and process management | non-compliance with deadlines (e.g. remission, start of transfer) except for IT breakdown | I |
| Execution, delivery and process management | the lack of mutual acknowledgement, confirmation vis-à-vis business partners concerning the details of the transaction | II  |
| Execution, delivery and process management | certificates underlying the settlement are not countersigned by the back-office | II |
| Execution, delivery and process management | lack of coordination between front-office and back-office systems | II |
| Execution, delivery and process management | the lack of daily coordination of deals with the contracting party | II |
| Execution, delivery and process management | the lack of harmony between open positions and the collateral behind them (the collateral is not well-founded, the positions are not correctly registered) | I  |
| Own-account trading |
| Execution, delivery and process management | no limits determined | I  |
| Execution, delivery and process management | lack of control of daily limits  | II |
| Risk management, control |
| Execution, delivery and process management | no appropriate body to manage the operational risk | II |
| Execution, delivery and process management | agents are not properly controlled | II |
| Execution, delivery and process management | the activity of branch offices is not properly controlled  | II |
| Execution, delivery and process management | loss-making events are not recorded, incidents are not analysed (breach of passwords, other abuses, producing fictitious documents) | II |
| Business disruption and system failure | IT protection not properly ensured against intrusion and intervention in the system  | I  |
| Business disruption and system failure | IT risks, system failure, system breakdown, interrupted network connection (financial transactions cannot be started in time) | I |
| Business disruption and system failure | live start of new IT development without proper testing (collateral calculation, etc.) | II |
| Business disruption and system failure | improper separation of live and test systems (there should be no link-up between the two) | II |
| Business disruption and system failure | trading system breakdown, disruption of operations | I  |
| Business disruption and system failure | lack of applying closed and non-manipulable IT systems | I  |
| Execution, delivery and process management | compared to the size of the front office, there are insufficient human resources for inspection | I  |
| Execution, delivery and process management | compared to the size of the front office, insufficient human resources for the back-office | II  |
| Execution, delivery and process management | inadequate frequency of control of the front office (the lack of daily level control) | I  |
| Execution, delivery and process management | front office operation is not inspected continuously | I  |
| Execution, delivery and process management | lack of physical and logical separation of retail and back-office systems | I  |
| Execution, delivery and process management | lack of review for faulty, modified and invalidated transactions (the number, frequency and justification of transactions, etc.) | II |
| Execution, delivery and process management | lack of daily reports on unusual event (transactions withdrawn, data of deals made outside trading hours or deviating from market price, settlement mistakes) | II  |
| Managing human risks |
| Employer’s practice and labour safety | no set of tools to screen potential employees whose morality or mentality may represent risks for the firm | II  |
| Employer’s practice and labour safety | no references requested in the course of admission, selection | I  |
| Employer’s practice and labour safety | lack of professional expectations about the relationship between traders and business partners | II |
| Employer’s practice and labour safety | lack of monitoring and supervision concerning the relationship between traders and business partners | II |
| Employer’s practice and labour safety | inadequate regulation on leave and transfer of employees | II  |
| Employer’s practice and labour safety | lack of mandatory holidays (another broker has to keep contact with the client for a certain period of time) | II  |
| Employer’s practice and labour safety | lack of mandatory exams (internal, external) | II  |
| Employer’s practice and labour safety | losses are not passed on to the person responsible | II |
| Employer’s practice and labour safety | there is no member in the management who would have an oversight of the trading activity | I  |
| Employer’s practice and labour safety | inadequate remuneration policy (endeavours to maximise commission income are in conflict with client interest) | I  |
| Employer’s practice and labour safety | the scope of powers is not adequately detailed for the business area (nature and size of deals, the magnitude of acceptable positions must remain within the set limits) | I  |

1. Although there is no legislative requirement for institutions to carry out an ICAAP, the MNB expects its application within specific institutional groups in accordance with spreading international best practice. [↑](#footnote-ref-1)
2. These guidelines are based primarily on CRD IV/CRR, the relevant articles of the recommendations issued by the Basel Committee on Banking Supervision and the applicable recommendations of the European Banking Authority (EBA). Further sources of this document include materials published on the web sites of other financial supervisory authorities, in particular authorities operating within the EU. [↑](#footnote-ref-2)
3. Article 73 of Directive 2013/36/EU [↑](#footnote-ref-3)
4. Draft Guidelines for common procedures and methodologies for the supervisory review and evaluation process under Article 107 (3) of Directive 2013/36/EU/ [↑](#footnote-ref-4)
5. Although the term “risk” is not defined explicitly either in the Basel recommendations or in the CRD, when used in conjunction with capital it usually refers to unexpected losses. Nevertheless, it is true that during both budgeting and capital adequacy assessment the full amount of losses is to be compared against the sum of allowances for impairment, provisions and capital. It is only sufficient to assess capital adequacy in the light of unexpected losses if we can rest assured that the allowances for impairment and provisions furnish adequate coverage for expected losses. [↑](#footnote-ref-5)
6. Guidelines on Supervisory Review Process [↑](#footnote-ref-6)
7. Guideline on Outsourcing - CP 02 revised, CEBS 14 December 2006 [↑](#footnote-ref-7)
8. See the chapter on ICAAP compliance at group level [↑](#footnote-ref-8)
9. Articles 97-101 of 2013/36/EC [↑](#footnote-ref-9)
10. Henceforth the terms Pillar 1 and regulatory pillar are used as synonyms. [↑](#footnote-ref-10)
11. The Hungarian Development Bank (MFB) and Eximbank are not within the scope of CRD IV/CRR, therefore the ICAAP, ILAAP and the supervisory review process cannot be interpreted for these institutions. [↑](#footnote-ref-11)
12. In the transitional period leading up to 1 January 2015, exemptions may be granted to groups consisting entirely of investment enterprises. At present, there is no investment enterprise group in Hungary the EU-level parent company (institution, financial holding corporation or mixed financial holding company) of which has a seat in Hungary. [↑](#footnote-ref-12)
13. The MNB defines institutions subject to complex SREP annually. [↑](#footnote-ref-13)
14. Act CXXXIX of 2013 on the Magyar Nemzeti Bank [↑](#footnote-ref-14)
15. Only the ICAAP and ILAAP methodological guidelines of institutions together with the related regulation (risk-taking policy, remuneration policy) are required by the MNB with the stipulation that top management approval is mandatory. However, in an ideal case, the total ICAAP and ILAAP documentation submitted to the MNB has such qualification. [↑](#footnote-ref-15)
16. In the chapter on Capital by annexing the SREP evaluation form. [↑](#footnote-ref-16)
17. In the case of small and medium-sized institutions – with a special view to the large number of such institutions – an inspection report is only generated if the SREP review is carried out within the scope of a comprehensive inspection. [↑](#footnote-ref-17)
18. If the credit institution is subject to consolidated supervision or consolidated supervision extends to it, prior to taking extraordinary measures vis-à-vis the credit institution, the MNB — with the following exception — must conciliate with the competent supervisory authority of the EEA member state where a credit institution under consolidated supervision with the credit institution can be found. The MNB is not required to conciliate with the competent supervisory authority of the other EEA member state prior to issuing its decision on the exceptional measure if the time required for such conciliation would jeopardise the execution of the decision. In this case, the MNB must immediately notify the competent supervisory authority of the other EEA member state of the decision. [↑](#footnote-ref-18)
19. Section 179(1) of the Investment Services Act The MNB shall review the internal methods used by the credit institution to calculate its capital requirement, the satisfaction of the requirements necessary for their application and the thoroughness and updating of the methods at least every three years. [↑](#footnote-ref-19)
20. In the opposite case, it is the duty of the individual partner supervisors in member state competence to issue a resolution about the capital adequacy of the institution. [↑](#footnote-ref-20)
21. The principle of proportionality is a key consideration during the ICAAP review. The requirements concerning internal capital adequacy depend on the type and size of the institution, its business model, the complexity of its activities and the level of risks they convey. The same criteria must be applied to the scope and depth of the risk strategy. [↑](#footnote-ref-21)
22. A plan/actual comparison performed from time to time. [↑](#footnote-ref-22)
23. Please refer to the Validation Manual I-II for further information on approving advanced credit risk management methods. [↑](#footnote-ref-23)
24. According to Article 123(b) of the CRR: “the exposure shall be one of a significant number of exposures with similar characteristics such that the risks associated with such lending are substantially reduced.” [↑](#footnote-ref-24)
25. Actually, this is why these are not acceptable for regulatory purposes. [↑](#footnote-ref-25)
26. It is an empirical fact in connection with the spread of default rates that sensitivity to the state of the economy decreases with the growth of the probability of default. Consequently, in the Creditrisk+ model it may be practical to select different relative spreads in the individual PD bands. [↑](#footnote-ref-26)
27. The technical literature often refers to the conditional, short-term probability of default as PIT (point-in-time) PD as opposed to the long-term, average TTC (through-the-cycle) PD. [↑](#footnote-ref-27)
28. In capital calculation it may be justified to proportionately reduce the input PDs in line with the absence of correction affecting LGD. [↑](#footnote-ref-28)
29. See the applicable provisions of Section 84 of Act CCXXXVII of 2013 (ACI) and Chapter VI of Government Decree 250/2000 (XII. 24.). [↑](#footnote-ref-29)
30. In respect of segmentation, the provisions of the CRR are applicable. [↑](#footnote-ref-30)
31. The requirement to counterbalance impairment shortage by more capital and impairment surplus by less capital. [↑](#footnote-ref-31)
32. To reduce capital by the shortage of impairment or to increase it by (a portion of) the impairment surplus. [↑](#footnote-ref-32)
33. Detailed guidance on operational risk is set forth in volume II of the Validation manual. [↑](#footnote-ref-33)
34. The MNB will expect an effort from the institution that is commensurate with the level of complexity and risks of its activities. The principle of proportionality dictates that institutions should perform their ICAAP with a level of diligence that is in proportion with the market risks they take and thus with the complexity of their trading book positions. Naturally, if an institution does not keep a trading book or if the book includes very few items while its foreign exchange risk in the banking book or commodity risk is significant, then the MNB expects the institution to elaborate and apply a more detailed process with a view to these risks. [↑](#footnote-ref-34)
35. To be discussed later. [↑](#footnote-ref-35)
36. The prudent value of the position is a value determined by a price at which the institution is 90% confident it could close the position at that price or better. [↑](#footnote-ref-36)
37. Illiquidity may derive from market imperfection but may also be generated by the institution itself by e.g. holding an excessively concentrated portfolio. [↑](#footnote-ref-37)
38. In case an institution is of the opinion that the setting up of such reserves is sufficiently handled by the accounting regulations, it is not a mandatory requirement to raise additional capital (on top of what is already required by accounting provisions). [↑](#footnote-ref-38)
39. E.g. holding period, confidence interval, correction factor, etc. [↑](#footnote-ref-39)
40. Backtesting should be interpreted as the result of an ex-post comparison of the trading strategy and the contents of the trading book. [↑](#footnote-ref-40)
41. The topic of securitisation is discussed at length in Chapter 5 of the CRR, in EBA guidelines and Article 82 of CRD IV. [↑](#footnote-ref-41)
42. Accordingly, concentration risks may not be regarded as risks fully covered in Pillar 2. [↑](#footnote-ref-42)
43. See: Article 4(1)(39) of the CRR. [↑](#footnote-ref-43)
44. The undertaking of large exposures is regulated in Article 395 of the CRR. [↑](#footnote-ref-44)
45. It must be noted that net positions may often be misleading. In many cases, there are large gross exposures behind them which may cause significant risks for the institution. [↑](#footnote-ref-45)
46. The CEBS’ GL 03 defines settlement risk as the risk, that the credit institution (investment service provider) will deliver the sold asset or cash to the counterparty and will not receive the purchased asset or cash as expected. [↑](#footnote-ref-46)
47. In relation to securities settlements, market players take different risks depending on whether the settlement of the transaction is guaranteed (involves a CCP), how it is settled and how many markets and settlement systems are involved. The difficulties of cross-border and multi-market securities settlements, especially those stemming from the lack of system interoperability, convey increased risks. [↑](#footnote-ref-47)
48. The central counterparty is an organisation which acts directly or indirectly between the parties to the transaction, taking over their rights and obligations in a way that it acts directly or indirectly as a buyer with all sellers and as a seller with all buyers. [↑](#footnote-ref-48)
49. In the case of defaults, central counterparties use assisting mechanisms to safeguard the settlements (settlement system) and to have the past-due open transaction settled as soon as possible. KELER (Central Clearing House and Depository, Budapest) applies a three-stage assisting mechanism: (1) if the default occurred on a client sub-account, KELER will settle the defaulted securities from the investment service provider’s own sub-account; (2) KELER will attempt to obtain the required securities via the central securities lending system; (3) it will set up a legacy correction DVP transaction between the defaulting and the duly delivering parties. [↑](#footnote-ref-49)
50. For a detailed introduction of procedures applied by KELER in case of non-fulfilment by either party, please refer to KELER’s General Rules of Business. [↑](#footnote-ref-50)
51. In addition to the above, the MNB also finds it acceptable from theoretical point of view if the settlement risk is identified and quantified on the basis of operational risk loss events, but it expects, in each and every case, the examination of the underlying credit risk and market factors that give rise to the loss. [↑](#footnote-ref-51)
52. [Including, for instance, the RTS on own funds](http://eur-lex.europa.eu/legal-content/HU/TXT/HTML/?uri=CELEX:32014R0241&from=EN), or [Decree No. 10/2014 of the Governor of the MNB on certain provisions related to the CRR.](http://www.mnb.hu/Root/Dokumentumtar/MNB/A_jegybank/mnbhu_mnb_rendeletek/2014/10_2014MNBrendelet.pdf) [↑](#footnote-ref-52)
53. Obviously, methods applied in Pillar 2 are expected to be more sophisticated. [↑](#footnote-ref-53)
54. This is one of the most important differences. In Pillar 1, it is not allowed to apply an internal model to credit risk which would also recognize diversification effects. [↑](#footnote-ref-54)
55. This solution is the most common practice. The time horizon is typically 1 year but it can be longer in certain cases. [↑](#footnote-ref-55)
56. The confidence levels required in Pillar 1 are more compliant with the stricter liquidation approach. [↑](#footnote-ref-56)
57. Expectedly, the typical difference will be that certain foreign-owned banks will employ IFRS-compliant definitions in Pillar 2 instead of the Hungarian accounting definitions used in Pillar 1. [↑](#footnote-ref-57)
58. We found at several institutions that although allocation for the purpose of performance measurement and pricing exists, this allocation does not encompass Pillar 2 capital (but typically Pillar 1 instruments). If so, the MNB definitely takes it as a sign of immaturity and of the lack of internal acceptance regarding Pillar 2 capital calculation. [↑](#footnote-ref-58)
59. In accordance with new EU expectations (Article 100 of the CRD), supervisory authorities are required to run various stress tests on a regular basis. Supervisory liquidity stress tests enable the MNB to assess the liquidity risk of individual institutions under uniform circumstances across various time horizons and stress scenarios, to obtain additional information compared to the institutions’ own internal stress tests, to identify and measure special liquidity risk areas and to receive assistance for the assessment of the general and relative (as compared to other institutions) liquidity risks of individual institutions. [↑](#footnote-ref-59)
60. Foreign exchange funding adequacy ratio [↑](#footnote-ref-60)
61. Net stable funding ratio. [↑](#footnote-ref-61)
62. Intergiro. [↑](#footnote-ref-62)
63. MCO = maximum cash outflow. [↑](#footnote-ref-63)
64. Compliance with Article 177 of the CRR is a pre-condition for obtaining the supervisory authorisation required for the adoption of the IRB method, according to which an institution should have in place stress tests to properly identify the impact of potential adverse events on its loan portfolio, and it should demonstrate that it is resilient to such events. [↑](#footnote-ref-64)
65. The CRR regulates Pillar 2 tests in a rather general manner but sets out more specific regulations for certain risk types (e.g. interest rate risk in the trading book, concentration risk of lending etc.) [↑](#footnote-ref-65)
66. Due to the presence of nonlinear risk correlations, the MNB considers it useful to test stress situations of different severity and probability. [↑](#footnote-ref-66)
67. Proportionality in the MNB’s requirements is only applicable to compliance with ICAAP guidelines 6-10. Every institution must fully comply with the first five ICAAP guidelines. [↑](#footnote-ref-67)