MünchenerHyp

DISCLOSURE REPORT

2018

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Disclosure pursuant to CRR/CRD IV

1 Basis for Supervisory Disclosure

This disclosure report is based on requirements pursuant to Directive (EU) No. 575/2013 on prudential requirements for credit institutions and investment firms (Capital Requirements Regulation – CRR) and Directive 2013/36/EU on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms (Capital Requirements Directive IV – CRD IV), as well as the German Banking Act (KWG) and the German Solvency Regulation (SolvV). Together these regulations represent the regulatory framework, which in Germany applies to subjects including capital, leverage, liquidity, as well as Pillar III disclosures. This report refers to the business year ending on 31 December 2018. Thus, rules and regulations that were valid to this date apply, unless otherwise indicated.

This disclosure report uses CRR/CRD IV framework terminology, various EBA standards, as well as national regulatory requirements pursuant to the SolvV and the KWG.

Furthermore, this disclosure report also meets disclosure requirements for risk reporting, as well as those of the Remuneration Regulation for Institutions (Institutsvergütungsverordnung – InstitutsVergV).

As a significant institution, MünchenerHyp is not obliged to comply with the guidelines specifying disclosure requirements pursuant to Part Eight of Regulation (EU) No. 575/2013 (EBA/GL/2016/11), which have been in force since 31 December 2017. Nevertheless, MünchenerHyp has voluntarily complied with a large portion of these guidelines in this disclosure report. The objective here is to have a disclosure report that is as clear and meaningful as possible. In doing so MünchenerHyp is also contributing towards the harmonisation of disclosure practices.

Independent of individual regulatory initiatives, MünchenerHyp works continuously to further develop its risk management infrastructure.

In keeping with the further development of the risk management infrastructure, the structure of the disclosure report has been appropriately adjusted to reflect the risk categories that have been identified as relevant within the framework of the risk inventory and the preparation of MünchenerHyp's risk strategy. Qualitative and quantitative information has been presented for each type of risk as required pursuant to the regulatory disclosure guidelines.

This report fully complies with all of the regulatory disclosure requirements that are relevant for MünchenerHyp. This report is published every year on MünchenerHyp's website shortly after the publication of the annual financial statements.

The amounts are disclosed in million euros, rounding differences can occur.

The following overview lists the disclosure requirements pursuant to CRR and the corresponding chapters in Münchener Hypothekenbank's disclosure report.

TABLE 1: DISCLOSURE TOPICS PRESENTED IN THIS REPORT AS REQUIRED BY TITLE 8 CRR

Disclosure requirements per Title 8 CRR	Corresponding chapter in this disclosure report
Article 435: Risk management objectives and policies	Risk management, and Annex – Management Bodies
Article 436: Scope of application	Fundamentals of regulatory disclosure
Article 437: Own funds	Own funds
Article 438: Capital requirements	Own funds
Article 439: Counterparty credit risk	Counterparty risk, and derivative counterparty risk exposure and netting positions
Article 440: Capital buffers	Countercyclical capital buffer
Article 441: Indicators of global systemic importance	N/A
Article 442: Credit risk adjustments	Counterparty risk
Article 443: Unencumbered assets	Encumbered assets
Article 444: Use of External Credit Assessment Institutions (ECAIs)	Counterparty risk
Article 445: Exposure to market risk	Market price risk
Article 446: Operational risk	Operational risk
Article 447: Exposures in equities not included in the trading book	Investment risk
Article 448: Exposure to interest rate risk on positions not included in the trading book	Counterparty risk
Article 449: Exposure to securitisation positions	N/A
Article 450: Remuneration policy	Remuneration policy
Article 451: Leverage	Exposure to leverage risk
Article 452: Use of the IRB Approach to credit risk	Counterparty risk
Article 453: Use of credit risk mitigation techniques	Counterparty risk
Article 454: Use of the advanced measurement approaches to operational risk	N/A
Article 455: Use of internal market risk models	N/A

2 Münchener Hypothekenbank eG Structure

In both financial and regulatory terms, the MünchenerHyp is an individual institution and not a financial conglomerate. The three fully owned subsidiary companies: M-Wert GmbH, Munich, Immobilienservice GmbH der Münchener Hypothekenbank eG (M-Service), Munich, and Nußbaumstraße GmbH & Co. KG, Munich, do not represent significant subsidiaries that would trigger a mandatory consolidation requirement. Moreover, MünchenerHyp does not operate any foreign subsidiaries.

3 Risk Management

3.1 Appropriateness Risk Management Procedure

Pursuant to Article 435 (1) CRR the Board of Management hereby states that the submitted risk management system as shown below is appropriate for the Bank's profile and its strategy:

The ability to monitor and keep risks under control at all times is essential for the successful steering of business development at MünchenerHyp. For this reason, risk management plays a very important role in the overall management of the Bank.

The business and risk strategy defines the parameters of the Bank's business activities. MünchenerHyp's entire Board of Management is responsible for both the business strategy and the risk strategy, which are regularly reviewed regarding the attainment of goals and the effectiveness and are updated as necessary and then submitted to the Supervisory Board at least once a year. As part of its supervisory duties, the Supervisory Board is informed at least once per quarter concerning the Bank's risk profile, as well as how it has performed towards achieving its objectives. This takes place using reports such as the ICAAP and ILAAP, lending risks, as well as the risk report prepared in accordance with the "Minimum Requirements for Risk Management" (MaRisk), which contains a complete summary of all the risks.

The basis of risk management consists of, on one hand, the analysis and presentation of existing risks, and, on the other, comparing these risks with the risk cover potential (ability to bear risk). The analysis and presentation of existing risks primarily distinguishes between counterparty, market price, liquidity, credit spread, migration and investment risks, as well as operational and model risks. Additional risks such as placement risk, reputational or behavioural risk, business risk, etc., are viewed as parts of the abovementioned risks and are taken into consideration at the appropriate place in the individual calculations, or are taken into consideration as other risks. Appropriate monitoring processes are in place involving internal process-dependent and independent supervision. Our Internal Audit department is responsible for the process-independent monitoring function within the Bank.

The professional concepts and models used to calculate the ability to bear risks are continuously further developed in accordance with regulatory requirements. Since 31 December 2018 Munchener Hypothekenbank has calculated its ability to bear risks using the normative approach as well as the economic approach.

The paramount objective of monitoring the risk-bearing ability is to secure the Bank's independence by ensuring that its income, cost and risk structures are organised in a manner that allows them to be controlled without external assistance. MünchenerHyp employs a limit system as an additional risk control instrument to monitor its ability to bear risks. The limit system assists in setting and regularly reviewing limits, for example, for debtor categories or countries.

Resolutions passed by the Basel Committee on Banking Supervision, or by the European Union regarding regulatory requirements, and their subsequent translation into German law, are continually observed and analysed by the Bank's Regulatory Office, which also initiates measures needed to implement these requirements. Furthermore, these measures lead to the review and further development of the Bank's risk and business strategies. Based on this procedure, relevant processes and systems are then adjusted as necessary.

Methods to measure risk included in the framework of obtaining IRBA certification, along with risk management procedures that are being continuously further developed, are embedded in MünchenerHyp's risk management system. The results derived from the risk models are suitable for managing MünchenerHyp. Despite careful development/further development and regular assessments of models, situations may, however, still arise whereby the actual losses or liquidity needs are higher than foreseen by the risk models. Various stress scenarios are used within the framework of risk mitigation in order to take this extraordinary, but plausible, situation into proper account.

3.2 Risk Statement

Segment 3.2 of the Report presents the concise risk statement of MünchenerHyp's Board of Management pursuant to Article 435 (1) f CRR of the Board of Management.

3.2.1 Description of risk management objectives

The risk strategy is an integral part of the Bank's business strategy. Based on the institution's business objectives, risk strategy is the source of risk-related measures to manage risk that are necessary for the Bank to achieve these objectives. The business and risk strategy is set by the Board of Management. Details are coordinated with the affected department heads. This information is available to all of the Bank's employees. This process takes place at least once a year, as well on an ad hoc basis. Monitoring of the defined standards (volumes, margins, limits, etc.) takes place in the various departments and is reported to the Board of Management per quarter.

Within its business strategy, MünchenerHyp defines its business areas as residential and commercial property finance, which are further divided into the following segments: Retail Germany, Retail Switzerland, Commercial Domestic and Commercial International. In addition, there is also the Bank's capital market business with the public sector and banks. Strategic and operational objectives are set for each of these segments, which should be achieved within the framework of the mid-term business plan.

Based on this, the risk strategy states how MünchenerHyp will, or plans to, deal with the risks associated with these business activities. In principle, systems, processes, controls and guidelines are integral elements of risk management. Therefore, individual risk management processes, as well as modelling and measuring approaches to quantify risks, as well as liquidity and capital requirements, are being implemented by MünchenerHyp. The key capital and liquidity ratios that are significant for MünchenerHyp are subject to tight supervision with corresponding stress tests, limit system with early warning indicators and escalation processes. Expert evaluations are employed to gauge additional risks, such as reputational or model risk, which are then taken into general consideration when calculating the Bank's ability to bear risks. Processes and procedures used in risk management are subject to regular institution-wide examinations by our Internal Audit department.

Within the framework of ensuring adequate capital, institutions must always identify and evaluate their risks, maintain sufficient capital to cover their risks, and employ processes to manage risk in order to permanently ensure that they are adequately capitalised (the Internal Capital Adequacy Assessment Process – ICAAP). The available internal capital must always exceed measured risks at all times. The normative approach reveals if the ability to bear risks is still given after all risks have occurred (excluding diversification effects between the risk categories) i.e. capital requirements according to Pillar I and SREP surcharges are still met. Only regulatory equity capital may be used as risk-covering equity. Using the economic approach the present value of the calculated risk cover potential is compared to VaR. In addition, stress tests are reviewed in both scenarios.

The Risk Weighted Assets (RWA), or the Expected Loss are additional factors used to manage risks. For example, caps are set depending on the rating system, individual rating, or loan-to-value ratios for the maximum permitted lending exposure. Management of capitalisation is integrated in MunchenerHyp's risk management processes and is continuously monitored by the Board of Management. The calculation of the risk-bearing capacity figures allow countermeasures to be taken in time to avoid unwanted developments. In principle, the Bank advocates exposing itself to only minor risks. This policy is visible, for example, in the average loan-to-value figure of about 60% of the mortgage lending value, or in the fact that the Bank does not enter into any significant trading book deals.

The formulation of the Bank's business strategy, which is made in agreement with the Bank's Treasury Department, already examines if the necessary liquidity can be obtained at the planned margins within the framework of the ILAAP. Funding plans are aligned with sales objectives in an iterative process headed by Risk Controlling. A limit system with early warning indicators is also employed to continually monitor and control liquidity during the business year. An emergency liquidity plan also exists and can be activated in stress situations.

MünchenerHyp has submitted a restructuring plan which is updated annually. Furthermore, the Bank has provided all of the necessary data to the Single Resolution Board (SRB) in order to prepare the appropriate resolution measures needed in the theoretical case of insolvency.

3.2.2 Description of risk tolerance and risk appetite

The impact on portfolios and RWAs is determined within the framework of a planning session that takes place (at least) once a year using an iterative process involving sales plans (depending on goals set for the average target margins), as well as the targeted interest income figure. Guidelines regarding risk tolerance and risk appetite in the credit business are derived from comparing the planned RWA with risk-bearing capacity and capital planning and then applying this to the planned volumes of new business and prolongations in the individual business segments. Required refinancing needs are also guaranteed as the required liquidity is determined parallel to the Bank's funding plans.

The reality, however, is that MünchenerHyp in principle only assumes minor risks in comparison to the rest of the banking sector. One example of this is that the lowest rating category accepted by the Bank as new business, and which the Bank only deviates from in exceptional cases, is 2c (see Table 12). This means that the main emphasis of the Bank's existing business is in the 1a to 1c rating categories.

Within the framework of the Bank's business strategy plans call for new business to grow in the areas of Retail Germany, Retail Austria (anticipated start in 2019), Commercial Domestic and Commercial International. New business growth is primarily driven by the four main objectives of the business strategy:

- Increase property lending business
- Stronger growth in the private residential than in the commercial property area of business
- Shrink the capital market business

The capital market business is primarily focusing on LCR or the Net Stable Funding Ratio (NSFR) to manage liquidity, whereby business with banks will be more greatly reduced than with public-sector entities.

The lending portfolio will expand due to the planned increase in new business, however, MünchenerHyp expects only a moderate increase in counterparty risk as the increase will for the most part take place in the low-risk Retail business.

MünchenerHyp uses derivative strategies to hedge its exposure to the risk of changing interest rates (interest risk). As a result, an increase in the volume of the lending portfolio does not automatically lead to an increased risk of changing interest rates.

Changes in the mentioned risk categories are accounted for when limits are set for the individual risk categories within the framework of calculating the Bank's ability to bear risk.

3.2.3 Description of risk management instruments

Within the framework of calculating the Bank's ability to bear risk, limits are set for each individual category of risk in order to restrict risks. In addition, country and individual limits are in place in the capital market and when granting loans, respectively.

3.2.4 Description of the development of key figures and risk management instruments (incl. risk inventory)

As a result of the conversion to ICAAP methodology, the going concern calculation is no longer reported at a 95% level of confidence.

In regards to the quantification of risks shown in the economic outlook, which is similar to what was the insolvency scenario, the disclosure of risks with a 99.9% level of confidence is shown in Table 2. The decline in "model risks and other risks" results from changes to the ICCAP concept.

TABLE 2: ECONOMIC OUTLOOK

	31.12.2018	31.12.2017
Market risk-value-at-risk	48.1	48.7
Credit risks	122.9	124.7
Operational risks	52.0	36.4
Spread and migration risks	148.9	154.0
of which spread risks	86.6	
of which migration risks	62.3	
Investment risks	22.6	32.6
Property risks	2.0	2.5
Model risks and other risks	22.3	69.2
Total	**426.5**	**468.0**

1. Overview of Credit Risk

Credit risk remains the risk that has the greatest influence on the Bank's ability to bear risk in the economic outlook. Spread and migration risks are presented separately since the end of 2018 and represent the subsequent risks in terms of size.

2. Overview of Market Risk

Despite the fact that MünchenerHyp is a trading book institution, it has not engaged in trading deals for many years and does not plan to in the foreseeable future.

Capital requirements for the interest rate risk in the banking book have only changed slightly. The Bank has almost no deposits business and does not intend to earn large sums from maturity transformation trades. The Bank does strive to obtain maturity matching refinancing to the greatest extent possible, and the remaining interest rate risks are continuously hedged to the greatest extent possible.

The capital market business/Public Pfandbriefe is no longer part of our core business and over the mid-term will only be engaged in to ensure that the necessary liquidity is available to manage the LCR and NSFR. This is reflected, for example, by the further contraction of the volume of loans in our Public-Sector/Banks area of business and generally in an increasing focus on Level 1 Assets.

The VaR for all assets at a 99% confidence level and a 10-day holding period in 2018, was recorded at a maximum of € 15 million, while the average amount was about € 11 million.

3. Overview of Operational Risk

The Bank's regulatory capital requirements for the operational risk is determined by the basic indicator approach. The regulatory capital requirement rose last year to € 25 million. Actual losses of € 3.6 million incurred due to operational risks were, however, far below this figure.

The Bank minimises its operational risks by qualifying its employees, using transparent procedures, automating standard procedures, and by having fixed working instructions, extensive functional testing of the IT systems, as well as appropriate emergency plans, and preventive measures. MünchenerHyp has purchased appropriate insurance policies to cover certain kinds of operational risks. Examples of these policies are pecuniary damage liability insurance and fidelity insurance including hacker coverage. The insurance coverage is regularly compared with the risks reported by the specialist department as part of their self-assessment process. The definition includes legal risks. However, it does not include reputational risks which must be viewed separately. Furthermore, due to the Bank's very specific business model, many of the usual forms of operational risks within the banking sector cannot occur at all at MunchenerHyp.

4. Investment and Property Risks

MünchenerHyp has made equity investments only with the Cooperative Financial Network, as well as to a minor extent in a special fund.

The Bank does not have risks related to property as it only has very few properties in its holdings and for which major undisclosed reserves exist.

5. Overview of Liquidity Risk

The regulatory LCR and NSFR figures were calculated in accordance with regulations. The minimum legal requirements for the LCR ratio were complied with at all times.

Pursuant to the Guidelines on Liquidity Coverage Ratio the annual LCR figure at the end of each quarter was as follows:

TABLE 3: ANNUAL AVERAGE LCR FIGURE (AT END OF QUARTER)
VALUES IN € M

	Total unweighted value			
Quarter ending on	31.03.2018	30.06.2018	30.09.2018	31.12.2018
Number of data points used in the calculation of averages	12	12	12	12
Liquidity buffer	1,587.2	1,576.9	1,441.1	1,312.4
Total net outflows	753.2	719.9	685.5	657.2
Liquidity coverage ratio (%)	211	219	210	200

Minimum regulatory requirements for NSFR have not yet been confirmed. MunchenerHyp's NSFR ratio is calculated in accordance with the requirements of Basel III and remained above 100% at all times during last year.

In addition to analysing previous developments of both ratios, operational management relies primarily on forecasts of future development of the key figures.

The Bank was continuously able to obtain both covered and uncovered refinancing throughout the entire year. The Bank placed Pfandbriefe with a nominal value of about € 3.0 billion in the market along with more than € 1.2 billion of senior unsecured paper. Unscheduled outflows of liquidity, such as a sudden surge in collateral required in the derivatives business, did not occur in 2017.

6. Overview of Capital Management

During the previous business year MünchenerHyp added € 53.6 million of additional common equity Tier 1 capital thereby posting a total capital ratio of 22.9% at the end of the year.

In accordance with its business model, the Bank manages the required level of own funds via regulatory requirements and rules governing risk-bearing capacity.

3.3 Risk Strategy

Risk strategy takes legal requirements into account, especially the KWG and MaRisk. In conformity with Article 25a KWG, MünchenerHyp has a proper business organisation, which, among other purposes, includes the management of, and the ability to bear, risks in accordance with the Bank's risk strategy.

Within its business strategy, MünchenerHyp defines the following segments: Retail Business Germany, Retail Business Switzerland, Commercial Domestic, Commercial International and Capital Market Business with the Public-Sector and Banks. Retail loans are also to be offered in Austria starting in 2019. Strategic and operational objectives are set for each of these segments and which should be achieved within the framework of the mid-term business plan. Based on this, the risk strategy states how MünchenerHyp will, or plans to, deal with the risks associated with these business activities. Quantitative and qualitative parameters are set for each risk category and describe how to deal with all significant risks in order to achieve the objectives. In addition, measures are derived from these processes that define how the parameters are to be observed. Thus, MünchenerHyp's risk strategy defines the strategic framework for risk management and encourages risk awareness among all employees within the framework of the Bank's corporate and risk culture. All of MünchenerHyp's employees are aware of the Bank's risk strategy and naturally observe it in their daily work. In determining remuneration parameters care is taken at all levels that they are aligned with this strategy and support the Bank in attaining its strategic goals.

The Board of Management is responsible for the regular examination and adjustment of the risk strategy and ensures that appropriate procedures exist for the management, supervision and control of risks. The risk strategy is an element of the firm's internal rules and therefore also within the Supervisory Board's area of responsibility as the institution's controlling body. The risk strategy is submitted and explained directly to the Supervisory Board at least once a year.

3.4 Organisation, Processes and Responsibilities

The institution-specific Credit Handbook describes the competencies and procedural requirements of entities involved in the lending business, defines their responsibilities, and also presents the credit products. The Credit Handbook documents the relevant processes and responsibilities for internal risk management within the organisation through the use of organisational guidelines, process descriptions, handbooks and rating-specific professional instructions. It contains descriptions of organisational safeguarding measures, as well as ongoing automatic measures and controls integrated in the work processes. These include, in particular, separation of functions, the double-check principle, access limitations, payment guidelines, new product process and balance confirmations.

The management methods described in the risk strategy continuously provide qualitative and quantitative statements regarding Münchener Hypothekenbank's economic situation, including, for example, the development of performance. This evaluation involves aspects of all risk categories. Furthermore, a close coordination procedure exists between the Risk Controlling and Accounting departments at MünchenerHyp.

This process is supervised by the entire Board of Management. The results from the risk management system form the foundation for the multi-year planning calculations, year-end projections, and agreement procedures for approving key figures generated by the Bank's accounting process.

The Bank's Articles of Association as well as the Board's Rules of Procedure define the formal framework for the activities of the Board of Management. As part of its weekly meetings the Board of Management approves necessary resolutions in accordance with the Board's Rules of Procedure. The Board of Management must request approval from the Supervisory Board for resolutions referring to subjects contained in Article 15 of the Bank's Articles of Association.

The Bank's Supervisory Board generally holds five meetings per year. Each meeting is focused on a special subject. The review of the annual financial statements is the main topic of the spring meeting. During the summer meeting the business unit reports on the results of the annual examination and update of the Bank's business and risk strategy in accordance with MaRisk requirements. The Interim Report is the main subject of the autumn meeting. During the last meeting of the year, which usually takes place in December, 12-month plans for the coming year are presented. The fifth meeting is organised as a brief constituting session of the Supervisory Board and is held immediately after the regularly scheduled Delegates Meeting in April of every year.

The Bank's risk situation is extensively reported during every Supervisory Board meeting. For this purpose copies of the credit risk report, the ICAAP and ILAAP reports, as well as the risk report prepared in accordance with the MaRisk, are made available to the members of the Supervisory Board. A separate report concerning operational risks is prepared twice a year; additional assessments are submitted as needed. An intensive review and discussion of the risk reports takes place during the meetings of the Risk Committee, which take place about six to eight times per year depending on the need to approve loans.

In addition to the Risk Committee, the Supervisory Board has delegated its duties to three additional committees: the Nomination Committee, the Remuneration Control Committee, and the Audit Committee. The Nomination Committee and the Remuneration Control Committee generally meet twice a year while the Audit Committee generally meets three times a year.

The Supervisory Board thereby fulfils requirements pursuant to Article 25d KWG. The committees' tasks are shown as follows:

Committee	Task
Audit Committee	Acceptance of auditor's report on annual financial statements
	Acceptance of results of special regulatory audits, and internal audits
Risk Committee	Credit approvals, monitoring credit risks
	Monitoring of additional risk categories
Nomination Committee	Board of Management issues
	Supervisory Board issues
Remuneration Control Committee	Examination of Bank-wide remuneration system
	Define Board of Management remuneration

The Delegates Meeting is the Bank's highest governing body. As the cooperative has almost 70,000 members the general meeting is held in accordance with Article 18 of the Articles of Association as a Delegates Meeting. Every April the members' delegates receive the reports prepared by the Board of Management and the Supervisory Board. Furthermore, they generally discharge the members of the Board of Management from liability for their activities during the previous business year, decide on the dividend to be distributed, approve amendments to the Articles of Association and conduct elections concerning members of the Supervisory Board. The following guidance issues apply when appointing members to governing bodies:

During the year under review the Delegates Meeting consisted of 80 members. At the time of their election as a delegate, three-quarters of the delegates served as members of a Board of Management at a primary bank. The remaining members of the Delegates Meeting are persons from all walks of business and society. Delegates are elected to serve 4-year terms.

Supervisory Board:
The Supervisory Board currently has twelve members, of which eight were elected as members by the Delegates Meeting and four were elected by employees as employee representatives in accordance with the One-Third Participation Act (Drittelbeteiligungsgesetz).

The members of the Supervisory Board are listed in the Management Bodies Annex.

The appointment of new members to the Board of Management is governed by legal requirements stated in the Cooperatives Act and the German Banking Act (KWG), as well asZin the bylaws of the Supervisory Board and the Bank's Articles of Association. The Supervisory Board appoints and dismisses members of the Board of Management and consults with the Board of Management on long-term succession planning. The Supervisory Board can delegate preparations to appoint members of the Board of Management and selection of candidates for election to the Supervisory Board's Nomination Committee.

The Nomination Committee supports the Supervisory Board in identifying candidates to fill a position on the Board of Management. In carrying out this role the Nomination Committee considers candidates against a range of criteria including the balance and different areas of expertise, abilities and experience of all members of the involved executive bodies.

The Supervisory Board advises and supervises the Board of Management. The competencies and obligations of the Supervisory Board are defined by the Cooperatives Act and the German Banking Act (KWG), as well as the bylaws of the Supervisory Board and MünchenerHyp's Articles of Association.

The Supervisory Board has set itself concrete objectives for its composition. In particular, the regional origin of Supervisory Board members, who are members of the boards of their respective credit cooperatives, plays an important role in view of the fact that MünchenerHyp is active across Germany as a credit institution. In addition, pursuant to KWG Article 25d, para. 2, para. 11 (No. 3 and 4), and within the framework of an annual self-evaluation of the Supervisory Board, the body as a whole, as well as the individual members of the Supervisory Board, are examined regarding the required expertise, abilities, professional experience, as well as reliability and possible conflicts of interest.

Almost all members of the Supervisory Board (excluding employee representatives) have many years of experience as members of the board of credit cooperatives of different sizes and therefore bring with them the required banking expertise, as well as knowledge concerning risk management, financial reporting and auditing.

Board of Management:
The Board of Management consists of at least two members, and generally has three members. The Supervisory Board can appoint a member to be the spokesman or chairman of the board. One of the members should have extensive knowledge of, and connections within, the Cooperative Financial Network, whereby all members of the Board of Management have fixed regional responsibilities regarding relationships at the primary bank level.

The members of the Board of Management are listed in the Management Bodies Annex. Ever since the Bank became subject to the requirements of co-determination the Supervisory Board and the Board of Management have set a quantitative quota for women in the various executive levels pursuant to the German law "For the equal participation of women and men in executive positions in the private economy and the public sector", as well as Article 9 of the Cooperatives Act. Thus mid-term plans call for women to represent 20% of the Supervisory Board, 33% of the Board of Management and on both levels under the Board of Management also 20%. On 31 December 2018 women represented 8% of the Supervisory Board, zero percent of the Board of Management and 16.7% of the first executive level and 16.2% of the second executive level. While keeping the interests of the Bank in mind, the Supervisory Board intends to raise the percentage of the hitherto underrepresented gender in the Supervisory Board and the Board of Management over the midterm. To achieve this goal subsequent replacement of Supervisory Board members and members of the Board of Management will be viewed particularly closely for the purpose of raising the share of the hitherto underrepresented gender in these bodies.

3.5 Risk Tolerance and Risk Capacity

An important basis for managing risk consists of, on the one hand, the analysis and presentation of existing risks, and, on the other, comparing these risks with the existing risk cover potential (ability to bear risk). MünchenerHyp calculates its ability to bear risk on a normative basis as well as on an economic outlook basis.

The normative outlook is the more important method used to manage risks and is used to determine on a period-oriented basis if the Bank would still have adequate equity capital ratios exceeding legally required minimums in accordance with ICAAP guidelines after the occurrence of risks contained in all relevant risk categories. Potential risk coverage that may be used to cover risks in this scenario is the available regulatory equity capital. Furthermore, an economic (present value) outlook is presented as a supplementary scenario.

The aforementioned approaches used to calculate the Bank's ability to bear risk quantify counterparty risks, market price risks, credit spread and migration risks, operational risks, investment risks and property risks. An additional buffer is employed for model risks, and other risks such as reputational risks and business risks. Liquidity risks (incl. placement risks) are not taken into account within the framework of calculating the Bank's ability to bear risk, as liquidity risks cannot be cushioned with additional (liquid) equity capital. Appropriate control procedures are in place to manage these risks and have been approved by the Bank's Board of Management within the framework of the Bank's internal monitoring system.

The professional concepts, and models used to calculate the ability to bear risks are continuously further developed in accordance with regulatory requirements. Beyond this, important assumptions are regularly validated and adjusted if necessary. Within the framework of the normative perspective, adverse scenarios and, within the framework of both perspectives, additional stress scenarios are employed to account for extraordinary yet plausible situations which cannot be described via calculations used to determine the Bank's ability to bear risk.

The results of the calculations concerning the Bank's ability to bear risk are provided to the Board of Management and the Supervisory Board no less than once a quarter. Ad-hoc reports are foreseen in the event of significantly worsening developments affecting the Bank's ability to bear risk. Recommended action will be stated in the report should action be necessary. Calculation of the Bank's ability to bear risk provides an impulse for mid-term planning of capital requirements as the normative perspective gives an outlook over the next four business years following the end of the current business year. If this perspective indicates a need for more capital the persons responsible for planning mid-term capital will respond appropriately.

4 Own Funds

4.1 Structure

MünchenerHyp conducts its business in the legal format of a registered cooperative. In addition to reserves and funds for general banking risk pursuant to Article 340 (g) HGB, core capital consists of equity investments in the form of cooperative shares. A single cooperative share costs € 70.00.

As of 31 December 2018, the volume of these shares was € 1,032.6 million, of which € 4.4 million was called.

As of the end of December 2018 Tier 2 (T2) capital amounted to € 72.4 million, of which € 38.7 million were subordinated liabilities with an average interest rate of 5.33%. These liabilities will expire between 1 April 2019 and 1 December 2022.

On 31 December 2017, total liable equity capital amounted to € 1,442.0 million. The following list presents the specific elements of equity capital pursuant to Article 492 (3) CRR.

TABLE 4: OVERVIEW OF SPECIFIC EQUITY ELEMENTS

Official numbering of rows pursuant to Commission Implementing Regulation (EU) No. 1423/2013	Common equity Tier 1 capital: instruments and reserves	(A) Amount at disclosure date (in € million)	(B) Regulation (EU) No. 575/2013 article reference	(C) Prescribed residual amount of Regulation (EU) No. 575/2013 (in € million)
1	Capital instruments and the related share premium accounts	1,028.2	26 (1), 27, 28, 29, EBA list pursuant to Article 26 (3)	–
	of which: Instrument type 1	–	EBA list pursuant to Article 26 (3)	–
	of which: Instrument type 2	–	EBA list pursuant to Article 26 (3)	–
	of which: Instrument type 3	–	EBA list pursuant to Article 26 (3)	–
2	Retained earnings	320.0	26 (1) (c)	–
3	Accumulated other comprehensive income (and any other reserves for considering unrealised income and losses per applicable accounting standards)	–	26 (1)	–
3a	Funds for general banking risks	35.0	26 (1) (f)	–
4	Amount of qualifying items referred to in Article 484 (3) and the related share premium accounts subject to phase out from CET1	–	486 (2)	–
	Public sector capital injections grandfathered until 1 January 2018	–	483 (2)	–
5	Minority interests (amount allowed in consolidated CET1)	–	84.479,480	–
5a	Independently reviewed interim profits net of any foreseeable charge or dividend	–	26 (2)	–
6	Common Equity Tier 1 (CET1) capital before regulatory adjustments	1,383.2		–

Official numbering of rows pursuant to Commission Implementing Regulation (EU) No. 1423/2013	Common equity Tier 1 capital: instruments and reserves	(A) Amount at disclosure date (in € million)	(B) Regulation (EU) No. 575/2013 article reference	(C) Prescribed residual amount of Regulation (EU) No. 575/2013 (in € million)
	Common Equity Tier 1 (CET1) capital: regulatory adjustments			
7	Additional value adjustments (negative amount)		34, 105	–
8	Intangible assets (net of related tax liability) (negative amount)	–3.7	36 (1) (b), 37, 472 (4)	–
9	Empty set in the EU			
10	Deferred tax assets that rely on future profitability excluding those arising from temporary differences (net of related tax liability where the conditions in Article 38 (3) are met) (negative amount)	–	36 (1) (c), 38, 472 (5)	–
11	Fair value reserves related to gains or losses on cash flow hedges	–	33 (a)	–
12	Negative amounts resulting from the calculation of expected loss amounts	–	36 (1) (d), 40, 159, 472 (6)	–
13	Any increase in equity that results from securitised assets (negative amount)	–	32 (1)	–
14	Gains or losses on liabilities valued at fair value resulting from changes in own credit standing	–	33 (b)	–
15	Defined benefit pension fund assets (negative amount)	–	36 (1) (e), 41, 472 (7)	–
16	Direct, indirect and synthetic holdings by an institution in own CET1 instruments, as well as existing or contingent obligation to buy its own instruments (negative amount)	–	36 (1) (f), 42, 472 (8)	–
17	Direct, indirect and synthetic holdings of the CET1 instruments of financial sector entities where those entities have reciprocal cross holdings with the institution designed to inflate artificially the own funds of the institution (negative amount)	–	36 (1) (g), 44, 472 (9)	–
18	Direct, indirect and synthetic holdings by the institution of the CET1 instruments of financial sector entities where the institution does not have a significant investment (above the 10% threshold and net of eligible short positions) (negative amount)	–	36 (1) (h), 43, 45, 46, 49 (2) (3), 79, 472 (10)	–
19	Direct, indirect and synthetic holdings by the institution of the CET1 instruments of financial sector entities where the institution has a significant investment in those entities (above the 0% threshold and net of eligible short positions) (negative amount)	–	36 (1) (i), 43, 45, 47, 48 (1) (b), 49 (1) to (3), 79, 470, 472 (11)	–
20	Empty set in the EU	–		–
20a	Exposure amount of the following items which qualify for a RW of 1250%, where the institution opts for the deduction alternative	–	36 (1) (k)	–
20b	of which, qualifying holdings outside the financial sector (negative amount)	–	36 (1) (k) (i), 89 to 91	–
20c	of which, securitisation positions (negative amount)	–	36 (1) (k) (11), 243 (1) (b), 244 (1) (b), 258	–
20d	of which, free deliveries (negative amount)	–	36 (1) (k) (111), 379 (3)	–
	of which: positions in a basket where the institution cannot determine the risk weighting using the IRB approach, and can opt for the alternative of applying a RW of 1250%	–	36 (1) (k) (iv), 153 (8)	–

Official numbering of rows pursuant to Commission Implementing Regulation (EU) No. 1423/2013	Common equity Tier 1 capital: instruments and reserves	(A) Amount at disclosure date (in € million)	(B) Regulation (EU) No. 575/2013 article reference	(C) Prescribed residual amount of Regulation (EU) No. 575/2013 (in € million)
	of which: investment holdings within the framework an internal model based approach where a RW of 1250% can be applied as an alternative	–	36 (1) (k) (v), 155 (4)	–
21	Deferred tax assets arising from temporary difference (amount above 10% threshold, net of related tax liability where the conditions in Article 38 (3) are met (negative amount)	–	36 (1) (c), 38, 48 (1), (a), 470, 472 (5)	–
22	Amount exceeding the 17.65% threshold (negative amount)	–	48 (1)	–
23	of which, direct and indirect holdings by the institution of the CET1 instruments of financial sector entities where the institution has a significant investment in those entities	–	36 (1) (i), 48 (1) (b), 470, 472 (11)	–
24	Empty set in the EU	–		–
25	of which, deferred tax assets arising from temporary differences	–	36 (1) (c), 38, 48 (1), (a), 470, 472 (5)	–
25a	Losses for the current financial year (negative amount)	–	36 (1) (a), 472 (3)	–
25b	Foreseeable tax charges relating to CET1 items (negative amount)	–	36 (1) (l)	–
26	Regulatory adjustments applied to CET1 in respect of amounts subject to pre-CRR treatment	–		–
26a	Regulatory adjustments relating to unrealised gains and losses pursuant to Articles 467 and 468	–		–
	of which: deduction and adjustment positions for unrealised losses 1	–	467	–
	of which: deduction and adjustment positions for unrealised losses 2	–	467	–
	of which: deduction and adjustment positions for unrealised gains 1	–	468	–
	of which: deduction and adjustment positions for unrealised gains 2	–	468	–
26b	Amount to be deducted from or added to Common Equity Tier 1 capital in regard to additional adjustment positions and deductions subject to pre-CRR treatment	–	469, 470, 472, 481	–
	Losses for the current financial year	–	472 (3)	–
	Intangible assets	–	472 (4)	–
	Deferred tax assets that rely on future profitability excluding those arising from temporary differences	–	472 (5)	–
	IRB approach calculated negative amount of provisions made for expected losses	–	472 (6)	–
	Fund assets Direct holdings of CET1	–	472 (7)	–
	Instruments Indirect holdings of CET1	–	472 (8) (a)	–
	Instruments Synthetic holdings of CET1	–	472 (8) (b)	–
	Instruments Reciprocal cross holdings of CET1 capital of financial	–	472 (8) (b)	–

Official numbering of rows pursuant to Commission Implementing Regulation (EU) No. 1423/2013	Common equity Tier 1 capital: instruments and reserves	(A) Amount at disclosure date (in € million)	(B) Regulation (EU) No. 575/2013 article reference	(C) Prescribed residual amount of Regulation (EU) No. 575/2013 (in € million)
	sector entities where the institution does not hold a significant investment in those entities	–	472 (9) (a)	–
	Reciprocal cross holdings of CET1 capital of financial sector entities where the institution has a significant investment in those entities	–	472 (9) (b)	–
	CET1 capital instruments of financial sector entities where the institution does not have a significant investment in those entities	–	472 (10)	–
	CET1 capital instruments of financial sector entities where the institution has a significant investment in those entities	–	472 (11)	–
	Deferred tax assets that rely on future profitability and arise from temporary differences, as well as	–	470	–
	Exception of deduction of investments in insurance companies	–	471	–
	Additional deduction and adjustment items, as well as deductions	−9.9	481	–
27	Qualifying AT1 deductions that exceed the AT1 capital of the institution(negative amount)	–	36 (1) (j)	–
28	**Total regulatory adjustments to Common Equity Tier 1 (CET1) capital**	**−13.6**		**–**
29	**Common Equity Tier 1 (CET1) capital**	**1,369.6**		**–**
	Additional Tier 1 (AT1) capital: instruments			
30	Capital instruments and the related share premium accounts	–	51, 52	–
31	of which, classified as equity under applicable accounting standards	–		–
32	of which, classified as liabilities under applicable accounting standards	–		–
33	Amount of qualifying items referred to in Article 484 (4) and the related share premium accounts subject to phase out from AT1	–	486 (3)	–
	Public sector capital injections grandfathered until 1 January 2018	–	483 (3)	–
34	Qualifying Tier 1 capital included in consolidated AT1 capital (including minority interests not included in row 5) issued by subsidiaries and held by third parties	–	85, 86, 480	–
35	of which, instruments issued by subsidiaries subject to phase out	–	486 (3)	–
36	**Additional Tier 1 (AT1) capital before regulatory adjustments**	**–**		**–**

Official numbering of rows pursuant to Commission Implementing Regulation (EU) No. 1423/2013	Common equity Tier 1 capital: instruments and reserves	(A) Amount at disclosure date (in € million)	(B) Regulation (EU) No. 575/2013 article reference	(C) Prescribed residual amount of Regulation (EU) No. 575/2013 (in € million)
	Additional Tier 1 (AT1) capital: regulatory adjustments			
37	Direct, indirect and synthetic holdings by an institution in own AT1 instruments, as well as existing or contingent obligations to buy its own instruments (negative amount)	–	52 (1) (b), 56 (a), 57, 475 (2)	–
38	Holdings of the AT1 instruments of financial sector entities where those entities have reciprocal cross holdings with the institution designed to inflate artificially the own funds of the institution (negative amount)	–	56 (b), 58, 475 (3)	–
39	Direct and indirect holdings by the institution of the AT1 instruments of financial sector entities where the institution does not have a significant investment in those entities (above the 10% threshold and net of eligible short positions) (negative amount)	–	56 (c), 59, 60, 79, 475 (4)	–
40	Direct and indirect holdings by the institution of the AT1 instruments of financial sector entities where the institution has a significant investment in those entities (negative amount)	–	56 (d), 59, 79, 475 (4)	–
41	Regulatory adjustments applied to Additional Tier 1 in respect of amounts subject to pre-CRR treatment and transitional treatments subject to phase out as prescribed in Regulation (EU) No. 575/2013 (i.e. CRR residual amounts)	–		–
41a	Residual amounts deducted from Additional Tier 1 capital with regard to deduction from common equity Tier 1 capital during the transitional period pursuant to Article 472 of Regulation (EU) No. 575/2013	–	472, 472 (3) (a), 472 (4), 472 (6), 472 (8) (a), 472 (9), 472 (10) (a), 472 (11) (a)	–
	of which: items to be detailed line by line e.g. material interim losses (net), intangible assets, shortfalls of provisions made for expected losses	–		–
	Significant losses for the current financial year	–	472 (3)	–
	Intangible assets	–	472 (4)	–
	IRB approach calculated negative amount of provisions for expected losses	–	472 (6)	–
	Direct holdings of CET1 capital instruments	–	472 (8) (a)	–
	Reciprocal cross holdings of CET1 capital of financial sector entities where the institution does not have a significant investment in those entities – direct holding	–	472 (9) (a)	–
	Reciprocal cross holdings of CET1 capital of financial sector entities where the institution has a significant investment in those entities – direct holding	–	472 (9) (b)	–
	CET1 capital instruments of financial sector entities where the institution does not have a significant investment in those entities – direct holding	–	472 (10) (a)	–
	CET1 capital instruments of financial sector entities where the institution has a significant investment in those entities – direct holding	–	472 (11) (a)	–
41b	Residual amounts deducted from Additional Tier 1 capital with regard to deduction from common equity Tier 1 capital during the transitional period pursuant to Article 472 of Regulation (EU) No. 575/2013	–	477, 477 (3), 477 (4) (a)	–

Official numbering of rows pursuant to Commission Implementing Regulation (EU) No. 1423/2013	Common equity Tier 1 capital: instruments and reserves	(A) Amount at disclosure date (in € million)	(B) Regulation (EU) No. 575/2013 article reference	(C) Prescribed residual amount of Regulation (EU) No. 575/2013 (in € million)
	of which: items to be detailed line by line e.g. reciprocal cross holdings of AT1 instruments, direct holdings of non-significant equity investments in other financial sector entities	–		–
	of which: items to be detailed line by line e.g. reciprocal cross holdings of AT1 instruments, direct holdings of non-significant equity investments in other financial sector entities	–	477 (3) (a)	–
	Reciprocal cross holdings of AT1 capital of financial sector entities where the institution does not have a significant investment in those entities – direct holding	–	477 (3) (b)	–
	Reciprocal cross holdings of AT1 capital of financial sector entities where the institution has a significant investment in those entities – direct holding	–	477 (4) (a)	–
	AT1 instruments of financial sector entities where the institution does not have a significant investment in those entities – direct holding	–	477 (4) (a)	–
41c	Amount to be deducted from or added to AT1 capital with regard to additional adjustment positions and deductions required pre-CRR treatment	–	467, 468, 481	–
	of which: possible deduction and adjustment items for unrealised losses	–	467	–
	Of which: possible deduction and adjustment items for unrealised gains	–	468	–
	Direct holdings of AT1 instruments	–	475 (2) (a)	–
	Indirect holdings of AT1 instruments	–	475 (2) (b)	–
	Synthetic holdings of AT1 instruments	–	475 (2) (b)	–
	Reciprocal cross holdings of AT1 capital of financial sector entities where the institution does not have a significant investment in those entities	–	475 (3)	–
	Reciprocal cross holdings of AT1 capital of financial sector entities where the institution has a significant investment in those entities	–	475 (3)	–
	AT1 instruments of financial sector entities where the institution does not have a significant investment in those entities	–	475 (4)	–
	AT1 instruments of financial sector entities where the institution has a significant investment in those entities	–	475 (4)	–
	Additional deduction and adjustment items, as well as deductions	–	481	–
42	Qualifying T2 deductions that exceed the T2 capital of the institution (negative amount)	–	56 (e)	–
	Items to deduct from AT1 accounts that exceed AT1 capital (deduction from CET1 capital)	–	36 (1) (j)	–
43	**Total regulatory adjustments to Additional Tier 1 (AT1) capital**	**–**		–
44	**Additional Tier 1 (AT1) capital**	**–**		–
45	**Tier 1 capital (T1 = CET1 + AT1)**	**1,369.6**		–

Official numbering of rows pursuant to Commission Implementing Regulation (EU) No. 1423/2013	Common equity Tier 1 capital: instruments and reserves	(A) Amount at disclosure date (in € million)	(B) Regulation (EU) No. 575/2013 article reference	(C) Prescribed residual amount of Regulation (EU) No. 575/2013 (in € million)
	Tier 2 (T2) capital: instruments and provisions			
46	Capital instruments and the related share premium accounts	38.7	62, 63	–
47	Amount of qualifying items referred to in Article 484 (5) and the related share premium accounts subject to phase out from T2	–	486 (4)	–
	Public sector capital injections grandfathered until 1 January 2018	–	483 (4)	–
48	Qualifying own funds instruments included in consolidated T2 capital (including minority interests and AT1 instruments not included in rows 5 or 34) issued by subsidiaries and held by third parties	–	87, 88, 480	–
	Tier 2 capital: regulatory adjustments			
49	of which: instruments issued by subsidiaries subject to phase-out	–	486 (4)	–
50	Credit risk adjustments	33.7	62 (c) und (d)	–
51	**Tier 2 (T2) capital before regulatory adjustments**	**72.4**		**–**
52	Direct, indirect and synthetic holdings by an institution in own T2 instruments (negative amount), as well as existing or contingent obligations to buy its own instruments	–	63 (b) (i), 66 (a), 67, 477 (2)	–
53	Holdings of the T2 instruments and subordinated loans of financial sector entities where those entities have reciprocal crossholdings with the institution designed to inflate artificially the own funds of the institution (negative amount)	–	66 (b), 68, 477 (3)	–
54	Direct and indirect holdings of the T2 instruments and subordinated loans of financial sector entities where the institution does not have a significant investment in those entities (amount above 10% threshold and net of eligible short positions) (negative amount)	–	66 (c), 69, 70, 79, 477 (4)	–
54a	of which, new positions which are not subject to transitional rules	–		–
54b	of which, holdings that existed before January 2013 and are subject to transitional rules	–		–
55	Direct and indirect holdings by the institution of the T2 instruments and subordinated loans of financial sector entities where the institution has a significant investment in those entities (net of eligible short positions) (negative amount)	–	66 (d), 69, 79, 477 (4)	–
56	Regulatory adjustments applied to Tier 2 capital in respect of amounts subject to pre-CRR treatment and transitional treatments subject to phase-out as prescribed in Regulation (EU) No. 575/2013 (i.e. CRR residual amounts)	–	–	–
56a	Residual amounts deducted from Tier 2 capital with regard to deduction from CET1 capital during the transitional period pursuant to Article 472 Regulation (EU) No. 575/2013	–	472, 472(3)(a), 472 (4), 472 (6), 472 (8) (a), 472 (9), 472 (10) (a), 472 (11) (a)	–

Official numbering of rows pursuant to Commission Implementing Regulation (EU) No. 1423/2013	Common equity Tier 1 capital: instruments and reserves	(A) Amount at disclosure date (in € million)	(B) Regulation (EU) No. 575/2013 article reference	(C) Prescribed residual amount of Regulation (EU) No. 575/2013 (in € million)
	of which: items to be detailed line by line e.g. material interim losses (net), intangible assets, shortfalls of provisions made for expected losses			–
	IRB approach calculated negative amount of provisions for expected losses	–	472 (6)	–
	Reciprocal cross holdings of CET1 capital of financial sector entities where the institution does not have a significant investment in those entities	–	472 (9) (a)	–
	Reciprocal cross holdings of CET1 capital of financial sector entities where the institution has a significant investment in those entities	–	472 (9) (b)	–
	T2 capital instruments of financial sector entities where the institution does not have a significant investment in those entities – direct holding	–	472 (10) (a)	–
	T2 capital instruments of financial sector entities where the institution has a significant investment in those entities – direct holding	–	472 (11) (a)	–
56b	Residual amounts deducted from Tier 2 capital with regard to deduction from CET1 capital during the transitional period pursuant to Article 475 Regulation (EU) No. 575/2013	–	475, 475 (2) (a), 475 (3), 475 (4) (a)	–
	of which: holdings shown line by line e.g. reciprocal cross holdings of AT1 instruments, direct holdings of non-significant investments in the capital of other financial sector entities	–		–
	Reciprocal cross holdings of AT1 capital of financial sector entities where the institution does not have a significant investment in those entities	–	475 (3) (a)	–
	Reciprocal cross holdings of AT1 capital of financial sector entities where the institution has a significant investment in those entities	–	475 (3) (b)	–
	AT1 instruments of financial sector entities where the institution does not have a significant investment in those entities	–	475 (4)	–
	AT1 instruments of financial sector entities where the institution has a significant investment in those entities	–	475 (4)	–
56c	Amount to be deducted from or added to Tier 2 capital with regard to additional deductions or adjustment items pursuant to required pre-CRR treatment of required deductions	–	467, 468, 481	–
	of which: possible deduction and adjustment items for unrealised losses	–	467	–
	of which: possible deduction and adjustment items for unrealised gains	–	468	–
	Direct holdings of T2 capital instruments	–	477 (2) (a)	–
	Indirect holdings of T2 capital instruments	–	477 (2) (b)	–
	Synthetic holdings of T2 capital instruments	–	477 (2) (b)	–
	Reciprocal cross holdings of T2 capital of financial sector entities where the institution does not have a significant investment in those entities	–	477 (3) (a)	–

Official numbering of rows pursuant to Commission Implementing Regulation (EU) No. 1423/2013	Common equity Tier 1 capital: instruments and reserves	(A) Amount at disclosure date (in € million)	(B) Regulation (EU) No. 575/2013 article reference	(C) Prescribed residual amount of Regulation (EU) No. 575/2013 (in € million)
	Reciprocal cross holdings of T2 capital of financial sector entities where the institution has a significant investment in those entities	–	477 (3) (b)	–
	T2 instruments of financial sector entities where the institution does not have a significant investment in those entities	–	477 (4)	–
	T2 instruments of financial sector entities where the institution has a significant investment in those entities	–	477 (4)	–
	Additional deduction and adjustment items, as well as deductions	–	481	–
	Items to deduct from T2 accounts that exceed T2 capital (deduction from AT1 capital)	–		–
57	**Total regulatory adjustments to Tier 2 (T2) capital**	**–**		**–**
58	**Tier 2 (T2) capital)**	**72.4**		**–**
59	**Total capital (TC = T1 + T2)**	**1,442.0**		**–**
59a	Risk weighted assets in respect of amounts subject to pre-CRR treatment and transitional treatments subject to phase out as prescribed in Regulation (EU) No. 575/2013 (i.e. CRR residual amount)	–		–
	of which: items not deducted from CET1 (Regulation (EU) No. 575/2013 residual amounts) (items to be detailed line by line, e.g. deferred tax assets that rely on future profitability net of related tax liability, indirect holdings of own CET1 instruments)	–	472, 472 (5), 472 (8) (b), 472 (10) (b), 472 (11) (b)	–
	Deferred tax assets that rely on future profitability and not arising from temporary differences arising from temporary differences	–	472 (5)	–
	Indirect holdings of T2 capital instruments	–	472 (8) (b)	–
	Synthetic holdings of T2 capital instruments	–	472 (8) (b)	–
	Reciprocal cross holdings of T2 capital of financial sector entities where the institution does not have a significant investment in those entities – indirect holding	–	472 (9) (a)	–
	Reciprocal cross holdings of T2 capital of financial sector entities where the institution has a significant investment in those entities – indirect holding	–	472 (9) (b)	–
	T2 capital instruments of financial sector entities where the institution does not have a significant investment in those entities – indirect holding	–	472 (10) (b)	–
	Deferred tax assets that rely on future profitability and arise from temporary differences, as well as CET1 capital instruments of financial sector entities where the institution has a significant investment in those entities	–	470	–

Official numbering of rows pursuant to Commission Implementing Regulation (EU) No. 1423/2013	Common equity Tier 1 capital: instruments and reserves	(A) Amount at disclosure date (in € million)	(B) Regulation (EU) No. 575/2013 article reference	(C) Prescribed residual amount of Regulation (EU) No. 575/2013 (in € million)
	T2 capital instruments of financial sector entities where the institution has a significant investment in those entities – indirect holding	–	472 (11) (b)	–
	of which: items not deducted from AT1 items (Regulation (EU) No. 575/2013 residual amounts) (items to be detailed line by line, e.g. reciprocal cross holdings in T2 instruments, direct holdings of non-significant investments in the capital of other financial sector entities)	–	475, 475 (2) (b), 475 (2) (c), 475 (4) (b)	–
	Indirect holdings of T2 instruments	–	475 (2) (b)	–
	Synthetic holdings of T2 instruments	–	475 (2) (b)	–
	Reciprocal cross holdings of AT1 capital of financial sector entities where the institution does not have a significant investment in those entities – indirect holding	–	475 (3) (a)	–
	Reciprocal cross holdings of AT1 capital financial sector entities where the institution has a significant investment in those entities – indirect holdings	–	475 (3) (b)	–
	T2 instruments of financial sector entities where the institution does not have a significant investment in those entities – indirect holding	–	475 (4) (b)	–
	T2 instruments of financial sector entities where the institution has a significant investment in those entities – indirect holding	–	475 (4) (b)	–
	of which: items not deducted from T2 items (Regulation (EU) No. 575/2013 residual amounts) (items to be detailed line by line e.g. Indirect holdings of own T2 instruments, indirect holdings of non-significant investments in the capital of other financial sector entities, indirect holdings of significant investments in the capital of other financial sector entities)	–	477, 477 (2) (b), 477 (2) (c), 477 (4) (b)	–
	Indirect holdings of T2 instruments	–	477 (2) (b)	–
	Synthetic holdings of T2 instruments	–	477 (2) (b)	–
	Reciprocal cross holdings of T2 capital of financial sector entities where the institution does not have a significant investment in those entities – indirect holding	–	477 (3) (a)	–
	Reciprocal cross holdings of T2 capital of financial sector entities where the institution has a significant investment in those entities – indirect holding	–	477 (3) (a)	–
	T2 instruments of financial sector entities where the institution does not have a significant investment in those entities – indirect holding	–	477 (4) (b)	–
	T2 instruments of financial sector entities where the institution has a significant investment in those entities – indirect holding	–	477 (4) (b)	–

Official numbering of rows pursuant to Commission Implementing Regulation (EU) No. 1423/2013	Common equity Tier 1 capital: instruments and reserves	(A) Amount at disclosure date (in € million)	(B) Regulation (EU) No. 575/2013 article reference	(C) Prescribed residual amount of Regulation (EU) No. 575/2013 (in € million)
60	**Total risk-weighted assets**	**6,301.0**		**–**
	Own capital ratios and buffers			
61	Common Equity Tier 1 capital ratio (as a percentage of total risk exposure amount)	21.74	92 (2) (a), 465	–
62	Tier 1 capital ratio (as a percentage of total risk exposure amount)	21.74	92 (2) (b), 465	–
63	Total capital ratio (as a percentage of total risk exposure amount)	22.89	92 (2) (c)	–
64	Institution specific buffer requirement (CET1 requirement in accordance with article 92 (1) (a) plus capital conservation and countercyclical buffer requirements plus a systemic risk buffer, plus systemically important institution buffer (G-SRI or A-SRI) (shown as percentage of total risk exposure amount)	6.38	CRD 128, 129, 130	0.62
65	of which, capital conservation buffer requirement	1.88		0.62
66	of which, countercyclical capital buffer	0.01[1]		–
67	of which, systemic risk buffer requirement	–		–
67a	of which, Global Systemically Important Institution (G-SII) or Other Systemically Important Institution (O-SII) buffer	–	CRD 131	–
68	CET1 available for buffer (as a percentage of total risk exposure amount)	17.24	CRD 128	–
69	[Non-relevant in EU regulation]	–		–
70	[Non-relevant in EU regulation]	–		–
71	[Non-relevant in EU regulation]	–		–
72	Direct, indirect and synthetic holdings of the capital of financial sector entities where the institution does not have a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	5.1	36 (1) (h), 45, 46, 472 (10), 56 (c), 59, 60, 475 (4), 66 (c), 69, 70, 477 (4)	–
73	Direct, indirect and synthetic holdings of CET1 instruments of financial sector entities where the institution has a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	0.6	36 (1) (i), 45, 48, 470, 472 (11)	–
74	Empty set in the EU	–		–
75	Deferred tax assets arising from temporary differences (amount below 10% threshold, net of related tax liability where the conditions in Article 38 (3) are met)	–	36 (1) (c), 38, 48, 470, 472 (5)	–

[1] This figure has been rounded. MünchenerHyp's unrounded institution-specific capital buffer figure is 0.0045%.

Official numbering of rows pursuant to Commission Implementing Regulation (EU) No. 1423/2013	Common equity Tier 1 capital: instruments and reserves	(A) Amount at disclosure date (in € million)	(B) Regulation (EU) No. 575/2013 article reference	(C) Prescribed residual amount of Regulation (EU) No. 575/2013 (in € million)
	Applicable caps on the inclusion of provisions in Tier 2			
76	Credit risk adjustments included in T2 in respect of exposures subject to standardised approach (prior to the application of the cap)	5.0	62	–
77	Cap on inclusion of credit risk adjustments in T2 under standardised approach	10.7	62	–
78	Credit risk adjustments included in T2 in respect of exposures subject to internal ratings based approach (prior to the application of the cap)	30.0	62	–
79	Cap for inclusion of credit risk adjustments in T2 under internal ratings-based approach	28.7	62	–
	Capital instruments subject to phase-out arrangements (only applicable between 1 Jan 2013 and 1 Jan 2022)			
80	Current cap on CET1 instruments subject to phase-out arrangements	–	484 (3), 486 (2) and (5)	–
81	Amount excluded from CET1 due to cap (excess over cap after redemptions and maturities)	–	484 (3), 486 (2) and (5)	–
82	Current cap on AT1 instruments subject to phase-out arrangements	0.8	484 (4), 486 (3) and (5)	–
83	Amount excluded from AT1 due to cap (excess over cap after redemptions and maturities)	–	484 (4), 486 (3) and (5)	–
84	Current cap on T2 instruments subject to phase-out arrangements	424.4	484 (5), 486 (4) and (5)	–
85	Amount excluded from T2 due to cap (excess over cap after redemptions and maturities)	–	484 (5), 486 (4) and (5)	–

The following Table 5 provides a description of the main features of the common equity Tier 1, Additional Tier 1 and Tier 2 capital instruments issued by MünchenerHyp pursuant to Article 437 (1) b) CRR. This information is presented using Annex II of the Commission Implementing Regulation (EU) No. 1423/2013 of 20 December 2013 laying down implementing technical standards with regard to disclosure of own funds requirements for institutions.

Legal rules pertaining to shares in the cooperative are based on the terms of the German Cooperatives Act and the Articles of Association of MünchenerHyp as a registered cooperative. MünchenerHyp's Articles of Association are available at the Bank's home page under Companies/members (https://www.muenchenerhyp.de/en/_ downloads/members/mhyp_Satzung_english_.pdf). All of the other equity instruments are defined in individual agreements with creditors, and for this reason issuing prospectuses are not relevant.

TABLE 5: KEY FEATURES OF CAPITAL INSTRUMENTS[1]

		Share in cooperative	Subord.	Subord.	Subord.
1	Issuer	MünchenerHyp	MünchenerHyp	MünchenerHyp	MünchenerHyp
2	Unique identifier (e.g. CUSIP, ISIN or Bloomberg identifier for private placement)	N / A	N / A	N / A	N / A
3	Governing law(s) of the instrument	German	German	German	German
4	Transitional CRR rules	CET1	Tier 2	Tier 2	Tier 2
5	Post transitional CRR rules	CET1	Tier 2	Tier 2	Tier 2
6	Eligible at solo/(sub-)consolidated/solo & (sub-) consolidated	Solo	Solo	Solo	Solo
7	Instrument type (types to be specified by each jurisdiction)	Share in cooperative	Profit-sharing rights capital	Subord. liabilities	Subord. liabilities
8	Amount recognised in regulatory capital (currency in million, as of most recent reporting date)	1,028.2	0.7	0.3	0.2
9	Nominal amount of instrument	1,028.2	15.0	3.0	2.0
9a	Issue price	1,028.2	15.0	3.0	2.0
9b	Redemption price	1,028.2	15.0	3.0	2.0
10	Accounting classification	Equity	Liability	Liability	Liability
11	Original date of issuance	Continuous since 1896	30.03.2009	03.07.2009	03.07.2009
12	Perpetual or dated	Perpetual	Dated	Dated	Dated
13	Original maturity date	N / A	01.04.2019	03.07.2019	03.07.2019
14	Issuer call subject to prior supervisory approval	N / A	Tax-related	Tax-related	Tax-related
15	Optional call date, contingent call dates and redemption amount	N / A	N / A	N / A	N / A
16	Subsequent call date, if applicable	N / A	N / A	N / A	N / A
17	Fixed or floating dividend/coupon	Floating	Floating	Fixed	Fixed
18	Coupon rate and any related index	N / A	3-M-Euribor + 3.25	6.425	6.425
19	Existence of dividend stopper	N / A	If non-compliant with legal equity capital requirements	If non-compliant with legal equity capital requirements	If non-compliant with legal equity capital requirements
20a	Fully discretionary, partially discretionary or mandatory (in terms of timing)	N / A	Mandatory	Mandatory	Mandatory
20b	Fully discretionary, partially discretionary or mandatory (in terms of amount)	N / A	Mandatory	Mandatory	Mandatory
21	Existence of step up or other incentive to redeem	N / A	N / A	N / A	N / A
22	Non-cumulative or cumulative	N / A	N / A	N / A	N / A
23	Convertible or non-convertible	no	no	no	no
24	If convertible, conversion trigger(s)	N / A	N / A	N / A	N / A
25	If convertible, fully or partially	N / A	N / A	N / A	N / A
26	If convertible, conversion rate	N / A	N / A	N / A	N / A
27	If convertible, mandatory or optional conversion	N / A	N / A	N / A	N / A
28	If convertible, specify instrument type convertible into	N / A	N / A	N / A	N / A
29	If convertible, specify issuer of instrument it converts into	N / A	N / A	N / A	N / A
30	Write-down features	N / A	yes	yes	yes
31	If write-down, write-down trigger(s)	Resolution approved by Delegates Meeting	Insolvency, insolvency proceedings or proceedings to avoid insolvency	Insolvency, insolvency proceedings or proceedings to avoid insolvency	Insolvency, insolvency proceedings or proceedings to avoid insolvency
32	If write-down, full or partial	Total and partial	Total and partial	Total and partial	Total and partial
33	If write-down, permanent or temporary	Permanent	Permanent	Permanent	Permanent
34	If temporary write-down, description of write-up mechanism	N / A	N / A	N / A	N / A
35	Position in subordination hierarchy in liquidation (specify instrument type immediately senior to instrument)	Subord.	N / A	N / A	N / A
36	Non-compliant transitional features	N / A	N / A	N / A	N / A
37	If yes, specify non-compliant features	N / A	N / A	N / A	N / A

[1] N / A is shown where category does not apply.

		Subord.	Subord.	Subord.	Subord.	Subord.	Subord.	Subord.	Subord.	Subord.	Subord.
1	Issuer	MünchenerHyp	MünchenerHyp	MünchenerHyp	MünchenerHyp	MünchenerHyp	MünchenerHyp	MünchenerHyp	MünchenerHyp	MünchenerHyp	MünchenerHyp
2	Unique identifier (e.g. CUSIP, ISIN or Bloomberg identifier for private placement)	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
3	Governing law(s) of the instrument	German	German	German	German	German	German	German	German	German	German
Regulatory treatment											
4	Transitional CRR rules	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2
5	Post transitional CRR rules	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2
6	Eligible at solo / (sub-)consolidated / solo & (sub-)consolidated	Solo	Solo	Solo	Solo	Solo	Solo	Solo	Solo	Solo	Solo
7	Instrument type (types to be specified by each jurisdiction)	Subord. liabilities	Subord. liabilities	Subord. liabilities	Subord. liabilities	Subord. liabilities	Subord. liabilities	Subord. liabilities	Subord. liabilities	Subord. liabilities	Subord. liabilities
8	Amount recognised in regulatory capital (currency in million, as of most recent reporting date)	0.1	0.8	0.9	0.2	0.4	0.1	0.7	1.6	3.8	1.2
9	Nominal amount of instrument	1.0	6.0	5.0	1.0	2.0	0.5	3.0	5.0	10.0	3.0
9a	Issue price	1.0	6.0	5.0	1.0	2.0	0.5	3.0	5.0	10.0	3.0
9b	Redemption price	1.0	6.0	5.0	1.0	2.0	0.5	3.0	5.0	10.0	3.0
10	Accounting classification	Liability	Liability	Liability	Liability	Liability	Liability	Liability	Liability	Liability	Liability
11	Original date of issuance	19.08.2009	19.08.2009	09.12.2009	19.01.2010	19.01.2010	04.03.2010	04.03.2010	20.08.2010	16.11.2010	09.12.2009
12	Perpetual or dated	Dated	Dated	Dated	Dated	Dated	Dated	Dated	Dated	Dated	Dated
13	Original maturity date	19.08.2019	19.08.2019	09.12.2019	19.01.2020	19.01.2020	04.03.2020	04.03.2020	20.08.2020	16.11.2020	09.12.2020
14	Issuer call subject to prior supervisory approval	Tax-related	Tax-related	Tax-related	Tax-related	Tax-related	Tax-related	Tax-related	Tax-related	Tax-related	Tax-related
15	Optional call date, contingent call dates and redemption amount	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
16	Subsequent call date, if applicable	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
Coupons / Dividends											
17	Fixed or floating dividend / coupon	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
18	Coupon rate and any related index	6.38	6.38	5.7	5.6	5.6	5.47	5.47	4.5	4.465	5.75
19	Existence of dividend stopper	If non-compliant with legal equity capital requirements	If non-compliant with legal equity capital requirements	If non-compliant with legal equity capital requirements	If non-compliant with legal equity capital requirements	If non-compliant with legal equity capital requirements	If non-compliant with legal equity capital requirements	If non-compliant with legal equity capital requirements	If non-compliant with legal equity capital requirements	If non-compliant with legal equity capital requirements	If non-compliant with legal equity capital requirements
20a	Fully discretionary, partially discretionary or mandatory (in terms of timing)	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory
20b	Fully discretionary, partially discretionary or mandatory (in terms of amount)	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory
21	Existence of step up or other incentive to redeem	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
22	Non-cumulative or cumulative	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A

		Subord.	Subord.	Subord.	Subord.	Subord.	Subord.	Subord.	Subord.	Subord.	Subord.
Capital											
23	Convertible or non-convertible	no	no	no	no	no	no	no	no	no	no
24	If convertible, conversion trigger(s)	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
25	If convertible, fully or partially	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
26	If convertible, conversion rate	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
27	If convertible, mandatory or optional conversion	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
28	If convertible, specify instrument type convertible into	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
29	If convertible, specify issuer of instrument it converts into	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
30	Write-down features	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
31	If write-down, write-down trigger(s)	Insolvency, insolvency proceedings or proceedings to avoid insolvency	Insolvency, insolvency proceedings or proceedings to avoid insolvency	Insolvency, insolvency proceedings or proceedings to avoid insolvency	Insolvency, insolvency proceedings or proceedings to avoid insolvency	Insolvency, insolvency proceedings or proceedings to avoid insolvency	Insolvency, insolvency proceedings or proceedings to avoid insolvency	Insolvency, insolvency proceedings or proceedings to avoid insolvency	Insolvency, insolvency proceedings or proceedings to avoid insolvency	Insolvency, insolvency proceedings or proceedings to avoid insolvency	Insolvency, insolvency proceedings or proceedings to avoid insolvency
32	If write-down, full or partial	Total and partial	Total and partial	Total and partial	Total and partial	Total and partial	Total and partial	Total and partial	Total and partial	Total and partial	Total and partial
33	If write-down, permanent or temporary	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent
34	If temporary write-down, description of write-up mechanism	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
35	Position in subordination hierarchy in liquidation (specify instrument type immediately senior to instrument)	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
36	Non-compliant transitional features	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
37	If yes, specify non-compliant features	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A

		Subord.	Subord.	Subord.	Subord.	Subord.	Subord.	Subord.	Subord.	Subord.	Subord.	Subord.
1	Issuer	MünchenerHyp	MünchenerHyp	MünchenerHyp	MünchenerHyp	MünchenerHyp	MünchenerHyp	MünchenerHyp	MünchenerHyp	MünchenerHyp	MünchenerHyp	MünchenerHyp
2	Unique identifier (e.g. CUSIP, ISIN or Bloomberg identifier for private placement)	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
3	Governing law(s) of the instrument	German	German	German	German	German	German	German	German	German	German	German
Regulatory treatment												
4	Transitional CRR rules	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2
5	Post transitional CRR rules	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2	Tier 2
6	Eligible at solo / (sub-)consolidated / solo & (sub-)consolidated	Solo	Solo	Solo	Solo	Solo	Solo	Solo	Solo	Solo	Solo	Solo
7	Instrument type (types to be specified by each jurisdiction)	Subord. liabilities	Subord. liabilities	Subord. liabilities	Subord. liabilities	Subord. liabilities	Subord. liabilities	Subord. liabilities	Subord. liabilities	Subord. liabilities	Subord. liabilities	Subord. liabilities
8	Amount recognised in regulatory capital (currency in million, as of most recent reporting date)	4.1	4.1	0.1	4.5	0.5	2.9	0.1	0.6	2.1	0.7	7.8
9	Nominal amount of instrument	10.0	10.0	0.2	9.0	1.0	4.5	0.2	0.8	3.0	1.0	10.0
9a	Issue price	10.0	10.0	0.2	9.0	1.0	4.5	0.2	0.8	3.0	1.0	10.0
9b	Redemption price	10.0	10.0	0.2	9.0	1.0	4.5	0.2	0.8	3.0	1.0	10.0
10	Accounting classification	Liability	Liability	Liability	Liability	Liability	Liability	Liability	Liability	Liability	Liability	Liability
11	Original date of issuance	19.01.2010	19.01.2010	27.04.2010	03.07.2009	03.07.2009	25.03.2010	07.07.2010	07.07.2010	07.07.2010	07.07.2010	01.12.2009
12	Perpetual or dated	Dated	Dated	Dated	Dated	Dated	Dated	Dated	Dated	Dated	Dated	Dated
13	Original maturity date	19.01.2021	19.01.2021	27.04.2021	05.07.2021	05.07.2021	25.03.2022	07.07.2022	07.07.2022	07.07.2022	07.07.2022	01.12.2022
14	Issuer call subject to prior supervisory approval	Tax-related	Tax-related	Tax-related	Tax-related	Tax-related	Tax-related	Tax-related	Tax-related	Tax-related	Tax-related	Tax-related
15	Optional call date, contingent call dates and redemption amount	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
16	Subsequent call date, if applicable	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A

		Subord.	Subord.	Subord.	Subord.	Subord.	Subord.	Subord.	Subord.	Subord.	Subord.	Subord.
Coupons / Dividends												
17	Fixed or floating dividend / coupon	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
18	Coupon rate and any related index	5.67	5.67	5.07	6.71	6.71	5.57	5.1	5.1	5.1	5.1	6.01
19	Existence of dividend stopper	If non-compliant with legal equity capital requirements	If non-compliant with legal equity capital requirements	If non-compliant with legal equity capital requirements	If non-compliant with legal equity capital requirements	If non-compliant with legal equity capital requirements	If non-compliant with legal equity capital requirements	If non-compliant with legal equity capital requirements	If non-compliant with legal equity capital requirements	If non-compliant with legal equity capital requirements	If non-compliant with legal equity capital requirements	If non-compliant with legal equity capital requirements
20a	Fully discretionary, partially discretionary or mandatory (in terms of timing)	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory
20b	Fully discretionary, partially discretionary or mandatory (in terms of amount)	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory
21	Existence of step up or other incentive to redeem	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
22	Non-cumulative or cumulative	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
Capital												
23	Convertible or non-convertible	no	no	no	no	no	no	no	no	no	no	no
24	If convertible, conversion trigger(s)	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
25	If convertible, fully or partially	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
26	If convertible, conversion rate	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
27	If convertible, mandatory or optional conversion	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
28	If convertible, specify instrument type convertible into	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
29	If convertible, specify issuer of instrument it converts into	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
30	Write-down features	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
31	If write-down, write-down trigger(s)	Insolvency, insolvency proceedings or proceedings to avoid insolvency	Insolvency, insolvency proceedings or proceedings to avoid insolvency	Insolvency, insolvency proceedings or proceedings to avoid insolvency	Insolvency, insolvency proceedings or proceedings to avoid insolvency	Insolvency, insolvency proceedings or proceedings to avoid insolvency	Insolvency, insolvency proceedings or proceedings to avoid insolvency	Insolvency, insolvency proceedings or proceedings to avoid insolvency	Insolvency, insolvency proceedings or proceedings to avoid insolvency	Insolvency, insolvency proceedings or proceedings to avoid insolvency	Insolvency, insolvency proceedings or proceedings to avoid insolvency	Insolvency, insolvency proceedings or proceedings to avoid insolvency
32	If write-down, full or partial	Total and partial	Total and partial	Total and partial	Total and partial	Total and partial	Total and partial	Total and partial	Total and partial	Total and partial	Total and partial	Total and partial
33	If write-down, permanent or temporary	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent
34	If temporary write-down, description of write-up mechanism	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
35	Position in subordination hierarchy in liquidation (specify instrument type immediately senior to instrument)	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
36	Non-compliant transitional features	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A
37	If yes, specify non-compliant features	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A

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4.2 Countercyclical Capital Buffer

The Countercyclical Capital Buffer (CCB) is regarded as a macroprudential instrument of banking supervision policy. The purpose of the CCB is to counteract the risk of excessive credit growth in the banking sector. The CCB is intended to ensure that banks build up an additional capital buffer during times of excessive credit growth. This buffer generally increases banks' ability to absorb losses. It is explicitly stated that the buffer may be completely depleted to absorb losses during times of crisis, thereby avoiding the formation of a credit crunch. The countercyclical capital buffer may amount to the equivalent of 0 to 2.5% of the total sum of risk-weighted assets.

MünchenerHyp took into account the requirements of the respective European supervisory authorities for disclosure of the institution-specific capital buffer for the defined country-specific countercyclical capital buffer (CCB) on the reporting date of 31 December 2018.

The institution-specific CCB is generally determined by multiplying the percentage figure of the institution-specific countercyclical capital buffer with the aggregate exposure amount pursuant to Article 82 para. 3 CRR.

In contrast, the determination of the institution-specific capital buffer is defined by the terms of Article 10d para. 2 of the German Banking Act. Based on this, the capital buffer is equal to the weighted average of the countercyclical capital buffer percentages in the individual countries where MünchenerHyp holds substantial positions. Substantial exposure positions are defined in Article 36 SolvV (all claim categories defined by Article 112 (a to f) CRR) and generally comprise private sector exposure positions.

The location of all substantial risk positions has to be determined in accordance with Commission Delegated Resolution (EU) No. 1152/2014 of 4 June 2014 in order to weight these substantial risk positions with the countercyclical capital buffer. Institutions have to disclose this geographic distribution of the substantial risk positions and the calculated amount of the institution-specific countercyclical capital buffer pursuant to the terms of Article 440 CRR in association with Commission Delegated Resolution (EU) No. 1555/2015 of 28 May 2015.

Institutions have to disclose this geographic distribution of substantial risk positions and the calculated amount of the institution-specific countercyclical capital buffer pursuant to the terms of Article 440 CRR in association with Commission Delegated Resolution (EU) No. 1555/2015 of 28 May 2015. This requirement is met with the following Tables 6 and 7.

TABLE 6: GEOGRAPHIC DISTRIBUTION OF KEY CREDIT EXPOSURE POSITIONS USED TO CALCULATE THE COUNTERCYCLICAL CAPITAL BUFFER[2]

		General credit exposure positions (in € m)		Exposure positions in the trading book (in € m)		Securitised positions (in € m)		Own funds requirements (in € m)					
	Breakdown by country	Value of exposure positions (SA)	Value of exposure positions (IRBA)	Total value of long and short positions in the trading book	Value of exposure positions in the trading book (internal model)	Value of exposure positions (SA)	Value of exposure positions (IRBA)	Of which: General credit exposure positions	Of which: Exposure positions in the trading book	Of which: Securitisation exposure positions	Total	Weighted own funds requirements (in %)	Quote of the countercyclical (in %)
		010	020	030	040	050	060	070	080	090	100	110	120
01	Germany	374.5	27,398.1	–	–	–	–	273.1	–	–	273.1	64.2802	0.0000
02	France	49.4	552.7	–	–	–	–	25.5	–	–	25.5	5.9992	0.0000
03	The Netherlands	0.0	441.3	–	–	–	–	11.0	–	–	11.0	2.5806	0.0000
04	Ireland	0.0	1.2	–	–	–	–	0.0	–	–	0.0	0.0117	0.0000
05	Denmark	0.0	90.9	–	–	–	–	1.6	–	–	1.6	0.3789	0.0000
06	Spain	25.8	471.5	–	–	–	–	14.8	–	–	14.8	3.4797	0.0000
07	Belgium	0.8	29.5	–	–	–	–	0.5	–	–	0.5	0.1209	0.0000
08	Luxembourg	4.0	1,606.9	–	–	–	–	32.5	–	–	32.5	7.6508	0.0000
09	Sweden	0.0	40.1	–	–	–	–	0.2	–	–	0.2	0.0534	2.0000
10	Finland	0.0	55.0	–	–	–	–	0.3	–	–	0.3	0.0683	0.0000
11	Austria	0.6	114.0	–	–	–	–	1.7	–	–	1.7	0.4014	0.0000
12	Switzerland	13.1	4,586.2	–	–	–	–	17.0	–	–	17.0	4.0073	0.0000
13	Gibraltar	0.0	55.3	–	–	–	–	3.0	–	–	3.0	0.7091	0.0000
14	Great Britain	0.0	200.1	–	–	–	–	1.5	–	–	1.5	0.3480	1.0000
15	Guernsey	0.0	49.4	–	–	–	–	1.4	–	–	1.4	0.3332	0.0000
16	Jersey	0.0	81.4	–	–	–	–	2.0	–	–	2.0	0.4798	0.0000
17	Isle of Man	0.0	22.4	–	–	–	–	0.7	–	–	0.7	0.1717	0.0000
18	USA	477.9	4.5	–	–	–	–	36.2	–	–	36.2	8.5319	0.0000
19	Bermuda	0.0	22.4	–	–	–	–	0.9	–	–	0.9	0.2078	0.0000
20	British Virgin Islands	0.0	9.3	–	–	–	–	0.4	–	–	0.4	0.0961	0.0000
21	Cyprus	0.0	11.9	–	–	–	–	0.4	–	–	0.4	0.0900	0.0000
22	**Total**	**946.1**	**35,844.1**	**–**	**–**	**–**	**–**	**424.7**	**–**	**–**	424.7	**100.0000**	

[2] The presentation does not constitute an overall breakdown of the loan portfolio, but is rather based on Article 440 (1a) CRR.

TABLE 7: AMOUNT OF INSTITUTION-SPECIFIC COUNTERCYCLICAL CAPITAL BUFFER

Line		Column
	12	010
010	Total amount of exposure	6,301.0
020	Institution-specific quota of the countercyclical capital buffer	0.0045 %
030	Claims on the institution-specific countercyclical capital buffer	0.3

4.3 Appropriateness

In principle MünchenerHyp applies IRBA for parts of its credit portfolio to calculate regulatory capital requirements in accordance with the CRR and pursuant to the approvals received from BaFin to use it. The basic IRBA is employed to determine the amount of equity capital required to back the major portion of the Corporates and Institutions category of loans. This means that the PD is estimated. The advanced IRBA will be used for the Retail Business Germany, Retail Business Small and Medium-Sized Enterprises (SME), and Retail Business PostFinance. This means that in addition to the PD, the LGD will also be estimated. In order to comply with regulatory requirements, the standardised approach for credit risk (KSA) will be applied to determine the level of equity capital required for the remainder of the portfolio.

With total required equity capital (required equity capital) of € 504.1 million on 31 December 2018, the total key figure was 22.89%, while the CET1 ratio was 21.74% and the T1 ratio was also 21.74%. This means that the T1 ratio of 8%, which is also required by the ECB's stress test, was exceeded by a wide margin. The split of equity capital required per 31 December 2018 in different risk categories and exposure classes is summarised in Tables 8 to 10. The equity capital required for counterparty risks from the IRBA positions amounts to € 383.0 million, and € 68.5 million for counterparty risks from the KSA positions. Equity capital required for operational risks and credit valuation adjustments is significantly lower with € 27.7 million and € 24.9 million, respectively. The basic indicator approach is used to calculate operational risks. The standard method is used to calculate equity capital requirements arising from credit valuation adjustments (CVA risk).

TABLE 8: EQUITY CAPITAL REQUIRED FOR COUNTERPARTY RISKS – IRBA PORTFOLIOS

Counterparty Risks for IRBA Portfolios		Equity Capital Requirement in € m
1.	Central governments	–
2.	Institutions	28.6
3.	Corporates	211.3
4.	Retail Business	135.2
5.	Equity investments	–
6.	Securitisations	–
	of which, re-securitisations	–
7.	Other non-credit obligation assets	7.9
	Total	**383.0**

TABLE 9: EQUITY CAPITAL REQUIRED FOR OPERATIONAL RISKS AND MARKET RISKS

Operational Risk and Market Risks		Equity Capital Requirement in € m
	Operational risk (basic indicator approach)	27.7
	CVA-risk (based on standardised method)	24.9

TABLE 10: EQUITY CAPITAL REQUIRED FOR COUNTERPARTY RISKS – KSA PORTFOLIOS

Counterparty Risks for KSA Portfolios		Equity Capital Requirement in € m
1.	Sovereigns and central banks	0.8
2.	Regional and local administrative authorities	0.4
3.	Public entities	0.3
4.	Multilateral development banks	–
5.	Institutions	2.5
6.	Corporates	41.0
7.	Retail Business	0.2
8.	Exposures secured by properties	5.8
9.	Positions associated with particularly high risk	6.5
10.	Equity investments (grandfathering)	9.3
11.	Other positions	0.3
12.	Positions in default	1.4
	Total	**68.5**

The level of required equity capital is planned as part of MünchenerHyp's multi-year planning calculations and care is taken to ensure that the equity capital requirements demanded by the regulatory authority are fully met at all times. MünchenerHyp internally judges the appropriateness of own funds in line with the regulatory requirements arising from CRR/CRD IV.

4.4 Balance Sheet Reconciliation

MünchenerHyp is not a member of a consolidated group of companies in terms of German commercial law or in terms of regulatory requirements. The audited and published annual financial statements are prepared in accordance with German commercial law and therefore contain all of the positions that are elements of regulatory equity capital and are to be deducted therefrom including assets, liabilities such as promissory notes, or other on-balance sheet items that influence regulatory capital such as intangible assets. For this reason, a transfer of the on-balance sheet items of companies included in consolidation for regulatory purposes does not take place.

Table 11 (below) presents the transfer of equity capital as reported on the balance sheet to regulatory equity capital.

TABLE 11: RECONCILIATION OF ON-BALANCE SHEET EQUITY CAPITAL TO REGULATORY EQUITY CAPITAL
IN € M

	31.12.2018
Equity capital reported on-balance sheet	**1,388.1**
Paid-up capital	1,032.6
Silent participations	2.0
Revenue reserves	320.0
Unappropriated profit	33.5
Funds for general banking risks	35.0
Total reported on-balance sheet	**1,423.1**
Regulatory adjustments to items reported on-balance sheet	
Accrued future dividends	–33.5
Silent participations	–2.0
Terminated paid up capital	–4.4
Allocations to funds for general banking risks reported in annual financial statements	0.0
Fixed deposits for the banking levy	–9.9
Allocation to revenue reserves from annual results	0.0
Intangible assets (amount of reduction in Tier 1)	–3.7
As reported on-balance sheet	–3.7
Residual amounts deducted from Additional Tier 1 capital with regard to deduction from Common equity Tier 1 capital during the transitional period pursuant to Article 472 CRR	–
Shortfall of provisions to expected losses (amount of reduction in Tier 1)	–
Common equity Tier 1 capital	**1,369.6**
Hybrid capital instruments	
As reported on-balance sheet	–
Regulatory adjustments	–
Deductions from Additional Tier 1 capital	–
Intangible assets (amount of reduction in Tier 1)	–
Shortfall of provisions to expected losses (amount of reduction in Tier 1)	–

	31.12.2018
Additional Tier 1 capital	**–**
Tier 1 capital	**1,369.6**
Subordinated liabilities	38.7
As reported on-balance sheet	106.2
Regulatory adjustments	–67.5
Profit participation capital	–
As reported on-balance sheet	–
Regulatory adjustments	–
Other (credit risk adjustments)	33.7
Deductions from Tier 2 capital	–
Shortfall of provisions to expected losses (amount of reduction in Tier 1)	
Tier 2 capital	**72.4**
Total regulatory equity capital	**1,442.0**

There were no material differences between the regulatory exposures and the book values recorded in the annual statement of accounts. For this reason, a detailed accounting has not been prepared.

5 Counterparty Risk

5.1 Containment

Counterparty risk – also referred to as credit risk – is of major significance for MünchenerHyp. Counterparty risk describes the danger that a counterparty or group of counterparties may delay, make partial payments, or even default on repaying a loan to the lender. Migration risk is included as a credit risk. Migration risk is defined as the danger of loss in present value arising over the period of a loan due to a drop in ratings, which is normally accompanied by an implied increase in yield.

5.2 Strategies and Processes

Strategies and Processes which are relevant for managing lending risks are documented in the business and risk strategies, as well as in the Credit Handbook. The business and risk strategies contain extensive explanations about the partial strategies concerning target customers and target markets, as well as requirements regarding the measurement and management of lending risks at the individual transaction and portfolio levels. The competencies and procedural requirements of entities involved in the lending business are contained in the Credit Handbook.

5.3 Risk Management Structure and Organisation

Credit risk management begins with selecting the target business for loan conditioning. Risk cost functions are used, which are validated in an ongoing back-testing process. Depending on the category and risk level of the business, various rating and scoring procedures are used. In addition, an IT-supported early warning system is used in order to recognise risks at an early stage.

The expected loss (EL) is taken into account within the framework of calculating the individual transaction by applying standard risk costs during the lending process. Based on the credit portfolio model, the unexpected loss (UL) is measured using a Credit-Value-at-Risk procedure (CVaR). The CVaR describes, with a certain level of probability, the maximum losses for a credit portfolio within a specific period. The UL is derived by subtracting the EL for the portfolio from this amount.

With respect to counterparty risks, MünchenerHyp calculates its positions according to the market valuation method. Compensation effects from correlation are not taken into account in this context.

5.4 Rating Systems and Customer Segments

MünchenerHyp uses specific customer-segment rating systems to evaluate creditworthiness. In this context, customers or claims are classified into segments (customer segments). The objective of this segmentation is to assign customers with homogeneous risk profiles to appropriate customer segments, which can in turn be assigned to IRBA exposure classes as defined by the supervisory authority. Rating systems appropriate to the risk profile are used to determine the rating class, and thus the risk level of positions in the various customer segments. This guarantees risk-appropriate and supervision-compliant allocation of claims to customer segments, rating systems and regulatory-related exposure classes. Customer segments and rating systems share the same names at MünchenerHyp in order to express the close relationship between customer segments and rating systems. Guidelines for customer segmentation and ratings application are established in the corresponding specialised instructions and implemented in the relevant data processing systems.

Rating systems consist of rating methods, processes and IT systems. A rating procedure processes all of the creditworthiness-related information about a borrower or a claim, using a specific algorithm, and combines it into a creditworthiness evaluation (rating method). The processes relate to the work flows and management/monitoring procedures that are used in the rating system. The IT systems are based on the category and method of data delivery or data-related processing of creditworthiness-related information. In this context, MünchenerHyp makes a distinction between IRBA rating systems and non-IRBA rating systems. IRBA rating systems are rating systems that have received IRBA approval from the regulatory authorities. These rating systems are used to evaluate the creditworthiness of the IRBA exposure classes. Non-IRBA rating systems are systems for which no IRBA approval is intended because the ratings-related portfolio is less important for MünchenerHyp (permanent partial use – PPU). The exception to this is the Bank's resumed business activities in the USA, which should be included in the IRBA. These rating systems are used to evaluate the creditworthiness of the KSA exposure classes.

5.4.1 IRBA Exposure Classes

The rating systems or customer segments that have received IRBA approval are summarised in Table 11. This table also shows the associated IRBA exposure classes. These are the exposure classes used to determine the necessary equity capital pursuant to the supervisory authority's requirements on the basis of the approved rating systems.

TABLE 12: IRBA RATING SYSTEMS AND EXPOSURE CLASSES

Seq. no.	Customer Segment/Rating System	IRBA Exposure Classes
1.	Banks	Institutions
2.	Intra-Group claims	Institutions
3.	Property companies, domestic	Corporates
4.	Property companies, foreign	Corporates
5.	Housing companies	Corporates
6.	Closed funds, domestic	Corporates
7.	Closed funds, foreign	Corporates
8.	Investors, domestic	Corporates
9.	Investors, foreign	Corporates
10.	Open funds (special assets), domestic	Corporates
11.	Open funds (special assets), foreign	Corporates
12.	Retail Business, domestic	Retail business
13.	Retail Business, SME	Retail business
14.	Retail Business PostFinance	Retail business
15.	Non-credit obligation assets	Other assets, without loan commitments

1. Banks

This customer segment includes claims against banks and financial institutions that are not members of the protection scheme of the Federal Association of German Volksbanken and Raiffeisenbanken (BVR), or are not considered to be a multilateral development bank or a development bank for regulatory purposes.

The VR Rating Banks is used to evaluate the creditworthiness of claims in this segment. The VR Rating Banks was developed in the Cooperative Financial Network under the leadership of DZ BANK AG and was approved as an IRBA rating procedure. The ratings are provided to MünchenerHyp by the rating desk at DZ BANK AG. The provided ratings are subjected to a plausibility check by the analysts at MünchenerHyp and adjusted if necessary.

2. Intra-Group claims

This customer segment includes MünchenerHyp's claims against members of the National Association of German

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Cooperative Banks (BVR) that belong to the BVR protection scheme. Intra-Group claims are assigned to the "Institutions" IRBA exposure category, and are shown with a risk weighting of 0%.

The creditworthiness of claims in this segment is evaluated using the VR Rating Banks employed by DZ BANK AG's Rating Desk.

3. Property companies, domestic
The customer segment of domestic property companies includes special purpose companies that keep property in their portfolio and handle the long-term management of rented/leased properties. This customer segment includes contracts with property companies in the Federal Republic of Germany. The federal state in which the property is located is of relevance in this context.

The creditworthiness evaluation for claims in this segment is based on the VR Immo Rating. The VR Immo Rating was developed in the Cooperative Financial Network under the leadership of DZ HYP, and was approved as an IRBA rating procedure. The VR Immo Rating consists of various partial modules that are developed, implemented and validated independently in consideration of the special risk characteristics of the customer segments. The VR Property Companies rating module is used to evaluate the creditworthiness of claims in the domestic property companies segment.

4. Property companies, foreign
This customer segment is defined analogously to property companies, domestic. The difference is that properties in this segment are located outside of Germany.

The creditworthiness of claims in this segment is evaluated using the Rating Process for Commercial Real Estate developed by CredaRate Solutions GmbH. This rating process has been approved as an IRBA rating process and takes company and property-specific attributes into consideration.

5. Housing companies
This customer segment includes claims against housing companies. These are companies that make available, manage and renovate residential housing for private individuals. Customers in this segment are usually housing construction companies, municipal housing companies and private housing companies. The property must be located in the Federal Republic of Germany.

The creditworthiness evaluation for claims in this segment is based on the VR Immo Rating, using the VR Housing Companies module.

6. Closed funds, domestic
This segment includes funds that were created to finance firmly defined, generally larger, investment projects. This customer segment encompasses investment properties or projects within the Federal Republic of Germany. The federal state in which the property is located is of relevance in this context.

The creditworthiness evaluation for claims in this segment is based on the VR Immo Rating, using the VR Closed Funds module.

7. Closed funds, foreign
This customer segment is defined just like the aforementioned customer segment, except that the properties in this segment are located outside of Germany.

The creditworthiness evaluation for claims in this segment is based on the CredaRate rating process.

8. Investors, domestic
Investors are both natural and legal entities who invest in residential and commercial properties. Investors provide financial resources for their own investment properties; they do not build or develop properties for third parties. The financed properties in this customer segment must be located in the Federal Republic of Germany.

The creditworthiness evaluation for claims in this segment is based on the VR Immo Rating, using the VR Investors module.

9. Investors, foreign
This customer segment is defined just like "Investors, domestic", except that the properties in this segment are located outside of Germany.

The creditworthiness evaluation for claims in this segment is based on the CredaRate rating process.

10. Open funds (special assets), domestic
This segment includes classes of financing in which asset management companies take out loans for the account of special assets. The main property must be located in the Federal Republic of Germany.

The CredaRate rating process is used to evaluate the creditworthiness of claims in this segment.

11. Open funds (special assets), foreign
Professionally, the definition of international open funds corresponds to that of domestic open funds. However, the main property must be located outside the Federal Republic of Germany.

The CredaRate rating process is also used to evaluate the creditworthiness of claims in this segment.

12. Retail business, domestic
The "Retail business, domestic" customer segment includes claims against individual persons or private entities owning properties within the Federal Republic of Germany, up to a total maximum liability of € 1 million. Employees of MünchenerHyp are excluded from this segment.

The creditworthiness evaluation is based on an application score and a behavioural score. In this customer segment, loss rates are estimated internally in the event of default (Loss Given Default, LGD). The Credit Conversion Factor (CCF) is conservatively estimated at a standard 100% for the required underlying equity.

13. Retail Business, SME
This customer segment includes exposure to properties located within the Federal Republic of Germany that have the following characteristics of small and medium-sized enterprises (SMEs) up to a maximum total liability of € 1 million:

- Corporates (including commercial partnerships) with annual sales of € 50 million
- Economically independent private persons (self-employed professionals, businessmen, majority shareholders controlling 50% of the company shares)

Certain industries and legal forms are excluded. The creditworthiness evaluation is based on an application score and a behavioural score. These scores were calibrated using the specifics of the SME segment. In this customer segment, loss rates are estimated internally in the event of default (Loss Given Default, LGD). The Credit Conversion Factor (CCF) is conservatively estimated at a standard 100% for the required equity.

14. Retail Business PostFinance
This segment contains all of Retail business exposure arising from business generated by PostFinance. Claims in this segment are solely claims against properties located in Switzerland. In accordance with the limits placed on Retail Business transactions, claims against individual persons or private entities in this segment are limited to a total maximum liability of CHF 1.2 million.

The creditworthiness evaluation takes place based on a specific customer segment application score and a behavioural score. An internal procedure was developed to estimate LGD. The Credit Conversion Factor (CCF) is conservatively set at a standard 100% for the required equity.

15. Non-credit obligation assets
To the extent that non-credit obligation assets pose a counterparty risk to MünchenerHyp, these are allocated to the "other assets" IRBA exposure category. They include, for instance, fixed assets and prepayments counted as assets that cannot be allocated to a borrower. The risk is weighted in the same way as in the KSA.

The results of the various rating segments are standardised using the VR master scale and are thus comparable on a common basis. The VR master scale also serves to standardise the numerous rating systems used by the companies within the Cooperative Financial Network by way of a Network-wide rating scale, thus creating a uniform standard for all of the rating systems used in the Cooperative Financial Network. This is an important factor that allows the use of the Rating Desk approach, among other things, within the Cooperative Financial Network. The VR master scale is shown in Table 13 in the context of the external ratings.

TABLE 13: VR MASTER SCALE AND KSA-RELEVANT EXTERNAL RATINGS

Rating Class	Probability of Default	S&P; Fitch	Moody's
0a	0.01 %	AAA to AA	Aaa to Aa2
0b	0.02 %	AA-	Aa3
0c	0.03 %		
0d	0.04 %	A+	A1
0e	0.05 %		
1a	0.07 %	A	A2
1b	0.10 %	A-	A3
1c	0.15 %	BBB+	Baa1
1d	0.23 %	BBB	Baa2
1e	0.35 %		
2a	0.50 %	BBB-	Baa3
2b	0.75 %	BB+	Ba1
2c	1.10 %	BB	Ba2
2d	1.70 %		
2e	2.60 %	BB-	Ba3
3a	4.00 %	B+	B1
3b	6.00 %	B	B2
3c	9.00 %	B-	B3
3d	13.50 %		
3e	30.00 %	CCC+ to C	Caa1 to C
4a	100.00 %		
4b	100.00 %		
4c	100.00 %		
4d	100.00 %		
4e	100.00 %		

Processes and IT systems relevant for rating purposes are constructed in a rating system-specific manner and fully comply with regulatory requirements. In this context, there is a strict separation for all of the rating systems between the areas of market, transaction management and counterparty risk monitoring. The rating systems are validated by the Credit Risk-Controlling department and are thereby monitored by a unit which operates independently and is not involved in initiating and closing business transactions. In regard to the validation of rating systems, a distinction is made between a pool validation, which is a rating process applied on a shared basis with other institutions and takes place in part centrally at the rating providers, the VR Immo Rating, the VR-Rating Banks and at CredaRate, and a MünchenerHyp-specific validation. In addition to validating the rating procedure, the validation process also examines the procedural and IT-related application of the rating systems at MünchenerHyp.

In addition to using the results from the rating systems as the foundation for determining regulatory requirements for underlying equity capital, they are also used as a basis for risk-adjusted pricing. The use of the rating results as a basis for determining the standard risk costs or equity costs is dependent upon the rating system. However, it is unrelated to the IRBA approval of the rating systems. Non-IRBA rating systems are thus also used for this purpose.

Table 14ff below presents the most important parameters used to calculate own funds requirements for IRB rating systems. Exposure classes are shown by PD to allow an evaluation of the credit quality of the portfolio. Using the IRB approach there were no risk weightings for an unexpected loss of IRBA exposures in default. In this case, risk backing takes place by comparing the expected loss to provisions made for adjustments to value. For this reason, no average risk weighting is shown for these exposures in the following tables.

In the interest of greater clarity and understanding the various exposure classes are presented in individual tables. They are followed by an overview of all classes in Table 14f.

The Institutions exposure category details the intra-group exposures with a risk weighting of 0%. The exposure values are shown as the sum of the outstanding credit amounts and non-utilised credit approvals, as well as the average risk weight for these exposures. The factors established by the supervisory authority for this exposure category are used as conversion factors. Claims subject to the alternative risk weighting, as well as non-credit obligation assets and securitisations are not shown in Table 14ff. The standard approach is applied for exposure to central governments and investments without exception. Exposures arising from derivatives, security financing transactions (SFT), etc., are reviewed in the CCR framework, which is why they are not presented here.

MünchenerHyp only maintains the subportfolio of claims secured by mortgage liens in the IRBA Retail Business. These positions are divided into the significant Expected Loss bands for MünchenerHyp as shown in Tables 14 d and e. The tables disclose the exposure value, the exposure value weighted by the average risk weight, and the average loss rate in the event of default weighted with the exposure value. The IRBA exposure is the product of the IRBA risk exposure value and the IRBA conversion factor. In the Retail Business, the conversion factor is uniformly set at 100% as a conservative standard.

TABLE 14A: EU CR6 – IRB APPROACH – CREDIT RISK EXPOSURE BY EXPOSURE CLASS AND PD RANGE EXPOSURE CLASS – INSTITUTIONS

IRBA Exposure Class – Institutions:

		a	b	c	d	e	f	g	h	i	j	k	l
	PD scale	Original on-balance sheet gross exposures (in € m)	Off-balance sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF (in €m)	Average PD	Number of obligors	Average LGD	Average maturity	RWAs (in € m)	RWA density	EL (in € m)	Value adjustments and provisions (in € m)
		010	020	030	040	050	060	070	080	090	100	110	120
010	0.00 to < 0.15	404.8	–	–	394.1	0.07	18	17.99	913	53.6	0.14	0.1	0.0
020	0.15 to < 0.25	61.8	–	–	61.8	0.15	2	11.25	913	8.2	0.13	0.0	0.0
030	0.25 to < 0.50	103.4	–	–	103.4	0.35	3	11.25	913	21.3	0.21	0.0	0.0
040	0.50 to < 0.75	14.8	–	–	14.8	0.50	2	45.00	913	14.3	0.97	0.0	0.0
050	0.75 to < 2.50	134.2	–	–	134.2	1.17	3	30.29	913	116.0	0.86	0.5	0.3
060	2.50 to < 10.00	–	–	–	–	–	–	–	–	–	–	–	–
070	10.00 to < 100.00	–	–	–	–	–	–	–	–	–	–	–	–
080	100.00 (default)	–	–	–	–	–	–	–	–	–	–	–	–
090	**Subtotal**	**719.0**	**–**	**–**	**708.3**	**0.34**	**28**	**19.29**	**913**	**213.4**	**0.30**	**0.6**	**0.3**

TABLE 14B: EU CR6 – IRB APPROACH – CREDIT RISK EXPOSURE BY EXPOSURE CLASS AND PD RANGE EXPOSURE CLASS – CORPORATES, SME

IRBA Exposure Class – Corporates, SME:

		a	b	c	d	e	f	g	h	i	j	k	l
	PD scale	Original on-balance sheet gross exposures (in € m)	Off-balance sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF (in €m)	Average PD	Number of obligors	Average LGD	Average maturity	RWAs (in € m)	RWA density	EL (in € m)	Value adjustments and provisions (in € m)
		010	020	030	040	050	060	070	080	090	100	110	120
010	0.00 to < 0.15	3,161.8	267.8	75.00	3,361.7	0.07	331	36.90	913	541.3	0.16	0.8	3.8
020	0.15 to < 0.25	2,298.7	38.2	75.00	2,327.3	0.19	214	36.99	913	701.9	0.30	1.7	4.7
030	0.25 to < 0.50	657.6	8.3	75.00	663.8	0.35	73	37.85	913	276.7	0.42	0.9	1.8
040	0.50 to < 0.75	376.5	14.9	75.00	387.7	0.50	66	36.07	913	185.8	0.48	0.7	1.2
050	0.75 to < 2.50	233.3	5.3	75.00	237.3	0.94	54	38.07	913	150.3	0.63	0.8	1.2
060	2.50 to < 10.00	21.0	–	–	21.0	6.84	7	37.32	913	23.5	1.12	0.5	0.3
070	10.00 to < 100.00	5.1	0.0	75.00	5.1	23.51	6	35.17	913	7.9	1.56	0.4	0.0
080	100.00 (default)	17.2	–	–	17.2	100.00	3	45.00	913	–	–	7.8	2.2
090	**Subtotal**	**6,771.2**	**334.5**	**75.00**	**7,021.1**	**0.47**	**754**	**37.03**	**913**	**1,887.4**	**0.27**	**13.6**	**15.2**

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TABLE 14C: EU CR6 – IRB APPROACH – CREDIT RISK EXPOSURE BY EXPOSURE CLASS AND PD RANGE EXPOSURE CLASS – CORPORATES, OTHER ENTITIES

		IRBA Exposure Class – Corporates, Other Entities:											
		a	b	c	d	e	f	g	h	i	j	k	l
	PD scale	Original on-balance sheet gross exposures (in € m)	Off-balance sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF (in €m)	Average PD	Number of obligors	Average LGD	Average maturity	RWAs (in € m)	RWA density	EL (in € m)	Value adjustments and provisions (in € m)
		010	020	030	040	050	060	070	080	090	100	110	120
010	0.00 to < 0.15	1,568.5	67.0	75.00	1,618.8	0.07	78	35.92	913	327.2	0.20	0.4	1.9
020	0.15 to < 0.25	282.0	141.4	75.00	388.0	0.18	36	37.93	913	142.1	0.37	0.3	0.5
030	0.25 to < 0.50	147.3	38.6	75.00	176.2	0.35	15	38.61	913	94.2	0.53	0.2	0.4
040	0.50 to < 0.75	12.9	251.2	75.00	201.3	0.50	10	44.68	913	147.3	0.73	0.4	0.1
050	0.75 to < 2.50	27.6	–	–	27.6	0.78	7	35.14	913	19.1	0.69	0.1	0.1
060	2.50 to < 10.00	0.6	–	–	0.6	4.00	1	35.00	913	0.7	1.15	0.0	0.0
070	10.00 to < 100.00	–	–	–	–	–	–	–	–	–	–	–	–
080	100.00 (default)	–	–	–	–	–	–	–	–	–	–	–	–
090	**Subtotal**	**2,038.9**	**498.2**	**75.00**	**2,412.5**	**0.15**	**147**	**37.16**	**913**	**730.6**	**0.30**	**1.4**	**3.0**

TABLE 14D: EU CR6 – IRB APPROACH – CREDIT RISK EXPOSURE BY EXPOSURE CLASS AND PD RANGE EXPOSURE CLASS – RETAIL BUSINESS, SME

		IRBA Exposure Class – Retail Business, SME											
		a	b	c	d	e	f	g	h	i	j	k	l
	PD scale	Original on-balance sheet gross exposures (in € m)	Off-balance sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF (in €m)	Average PD	Number of obligors	Average LGD	Average maturity	RWAs (in € m)	RWA density	EL (in € m)	Value adjustments and provisions (in € m)
		010	020	030	040	050	060	070	080	090	100	110	120
010	0.00 to < 0.15	718.2	49.1	100.00	767.3	0.09	5,196	8.93	–	12.0	0.02	0.1	1.0
020	0.15 to < 0.25	1,263.4	98.8	100.00	1,362.3	0.18	10,868	11.76	–	47.6	0.03	0.3	2.5
030	0.25 to < 0.50	393.0	39.9	100.00	432.9	0.35	3,641	13.13	–	27.8	0.06	0.2	1.1
040	0.50 to < 0.75	335.8	78.4	100.00	414.2	0.50	3,204	15.75	–	41.1	0.10	0.3	1.1
050	0.75 to < 2.50	214.9	74.8	100.00	289.6	0.96	1,681	19.56	–	54.5	0.19	0.5	1.0
060	2.50 to < 10.00	175.9	4.3	100.00	180.2	4.65	1,475	14.02	–	61.9	0.34	1.2	1.7
070	10.00 to < 100.00	24.3	0.4	100.00	24.7	27.65	199	16.18	–	18.5	0.75	1.1	0.6
080	100.00 (default)	19.7	0.9	100.00	20.6	100.00	154	18.14	–	65.8	3.19	3.7	4.4
090	**Subtotal**	**3,145.2**	**346.6**	**100.00**	**3,491.8**	**1.30**	**26,418**	**12.61**	**–**	**329.2**	**0.09**	**7.4**	**13.4**

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TABLE 14E: EU CR6 – IRB APPROACH – CREDIT RISK EXPOSURE BY EXPOSURE CLASS AND PD RANGE EXPOSURE CLASS – RETAIL BUSINESS, NON-SME

		IRBA Exposure Class Retail Business, Non-SME											
		a	b	c	d	e	f	g	h	i	j	k	l
	PD scale	Original on-balance sheet gross exposures (in € m)	Off-balance sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF (in €m)	Average PD	Number of obligors	Average LGD	Average maturity	RWAs (in € m)	RWA density	EL (in € m)	Value adjustments and provisions (in € m)
		010	020	030	040	050	060	070	080	090	100	110	120
010	0.00 to < 0.15	14,552.6	2,297.0	100.00	16,849.7	0.06	160,545	14.14	–	425.0	0.03	1.6	16.9
020	0.15 to < 0.25	3,200.5	470.8	100.00	3,671.3	0.17	39,107	19.65	–	278.6	0.08	1.3	6.3
030	0.25 to < 0.50	599.3	69.0	100.00	668.3	0.35	7,706	20.48	–	87.7	0.13	0.5	1.7
040	0.50 to < 0.75	220.5	16.0	100.00	236.5	0.50	2,600	21.88	–	42.8	0.18	0.3	0.7
050	0.75 to < 2.50	194.8	22.2	100.00	217.0	0.87	2,293	25.69	–	66.9	0.31	0.5	0.8
060	2.50 to < 10.00	508.9	7.7	100.00	516.6	5.39	5,149	15.63	–	294.0	0.57	4.5	5.5
070	10.00 to < 100.00	38.9	1.6	100.00	40.5	14.08	445	21.11	–	46.1	1.14	1.2	0.6
080	100.00 (default)	32.4	3.3	100.00	35.6	100.00	353	16.95	–	120.4	3.38	6.0	4.6
090	**Subtotal**	**19,347.9**	**2,887.6**	**100.00**	**22,235.5**	**0.41**	**218,198**	**15.49**	**–**	**1,361.5**	**0.06**	**15.9**	**37.1**

TABLE 14F: EU CR6 – IRB APPROACH – CREDIT RISK EXPOSURE BY EXPOSURE CLASS AND PD RANGE – TOTAL EXPOSURE VALUES

		IRBA Total Exposure Values											
		a	b	c	d	e	f	g	h	i	j	k	l
	PD scale	Original on-balance sheet gross exposures (in € m)	Off-balance sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF (in €m)	Average PD	Number of obligors	Average LGD	Average maturity	RWAs (in € m)	RWA density	EL (in € m)	Value adjustments and provisions (in € m)
		010	020	030	040	050	060	070	080	090	100	110	120
010	0.00 to < 0.15	20,405.9	2,680.9	96.88	22,991.6	0.06	166,167	18.89	–	1,359.1	0.06	3.0	23.6
020	0.15 to < 0.25	7,106.4	749.2	94.01	7,810.7	0.18	50,227	24.28	–	1,178.4	0.15	3.6	14.0
030	0.25 to < 0.50	1,900.6	155.8	92.48	2,044.6	0.35	11,438	25.66	–	507.7	0.25	1.8	5.0
040	0.50 to < 0.75	960.5	360.5	81.55	1,254.5	0.50	5,882	28.17	–	431.3	0.34	1.7	3.1
050	0.75 to < 2.50	804.8	102.3	98.71	905.7	0.96	4,038	27.94	–	406.8	0.45	2.4	3.4
060	2.50 to < 10.00	706.4	12.0	100.00	718.4	5.25	6,632	15.88	–	380.1	0.53	6.2	7.5
070	10.00 to < 100.00	68.3	2.0	99.51	70.3	19.53	651	20.40	–	72.5	1.03	2.7	1.2
080	100.00 (default)	69.3	4.2	100.00	73.4	100.00	510	23.85	–	186.2	2.54	17.5	11.2
090	**Subtotal**	**32,022.2**	**4,066.9**	**94.88**	**35,869.2**	**0.49**	**245,545**	**20.96**	**–**	**4,522.1**	**0.13**	**38.9**	**69.0**

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No material fluctuations occurred in the RWA reported in the IRBA portfolios in 2018. Changes were primarily due to inflows and outflows.

Table 15 shows a comparison of the expected losses with actual losses recognised on the balance sheet for the IRB exposure classes Institutions, Corporates and Retail Business for the period 2013 to 2018. The table reflects MünchenerHyp's conservative approach used to calculate the PD figure.

The IRBA portfolio recorded net income of € 1 million for the 2018 reporting year and is the net sum of additions to individual adjustments to value (IAV), IAV reversals, as well as direct write-downs. This figure consists of € 2 million of expenses incurred in the Bank's Retail Business and € 3 million in reversals of adjustments to values in the Corporates exposure class. The comparison reveals that – as was already the case in the past – expected losses were several times larger than actual losses.

TABLE 15: COMPARISON OF EXPECTED LOSSES TO ACTUAL LOSSES RECOGNISED ON THE BALANCE SHEET
IN € M

Comparison of expected losses versus actual losses recognised in the balance sheet as reported in the IRBA rating systems

	2013		2014		2015		2016		2017		2018	
IRBA exposure class	Expected loss	Actual loss	Expected loss	Actual loss	Expected loss	Actual loss	Expected loss	Actual loss	Expected loss	Actual loss	Expected loss	Actual loss
Institutions	4	0	4	0	4	0	2	0	1	0	1	0
Corporates	35	0	36	4	25	6	37	12	18	−8	16	−3
Retail Business	11	6	11	4	14	2	16	2	17	4	14	2

The estimated loss is the expected loss per IRB report made on the basis of PD and LGD.

The expected loss stated in the previous annual report (i.e. 2018) is used as a (legal regulatory) loss forecast for a year (i.e. 31 December 2017). This figure already takes existing individual adjustments to value (IAV) into account. The loss recognised on the balance sheet is the sum of the direct write-downs and IAVs taken less recoveries of IAVs. Minor effects could arise due to fluctuations in currency rates.

In the past the expected regulatory loss was always substantially higher than the actual losses that were recognised on the balance sheet. This is because there were only low or no losses realised in the IRBA rating systems outside of the retail areas of business (banks, individual mortgage business). In addition, rules related to CRR require "raised" expectations for regulatory-defined losses such as safety margins in the Retail Business (scorecards, downturn-LGD) or the high regulatory LGD-values for mortgage loans in the IRBA-based approach.

Actual losses recognised on the balance sheet for the IRBA rating systems in 2018 were immaterial.

The current situation in the property market offering good settlement possibilities played an important role in the low level of Retail Business losses recognised on the balance sheet. Calibration is basically possible in Retail areas of business where application scorecards are employed. The actual default rates are to some extent lower than the rates predicted by the behaviour scorecards. All of the behaviour scorecards, as well as the PostFinance application scorecards, are being currently revised.

5.4.2 KSA Exposure Class

The customer segments or rating systems used to evaluate the creditworthiness of the KSA portfolios are summarised in Table 16. Rating procedures for non-IRBA rating systems are not used as a basis for determining regulatory required own funds. However, similar standards apply for the use and validation of rating systems at MünchenerHyp as for the IRBA rating systems. The results of these rating systems are used as a basis for determining a risk-adjusted price and for additional bank management purposes. The rating results from non-IRBA rating systems are also standardised on a common basis using the VR master scale. If no internal rating procedures are available, external ratings are used to determine creditworthiness. In this context, only ratings from the leading agency Fitch Ratings are used. The transfer

of ratings from this agency to the VR master scale is shown in Table 13. As a basic principle, MünchenerHyp does not transfer ratings for its issues to its claims.

TABLE 16: NON-IRBA RATING SYSTEMS AND KSA EXPOSURE CLASSES

Seq. no.	Customer Segment/Rating	KSA Exposure Classes
1.	Central governments (excl. EEA with zero weighting)	Sovereigns and central banks
2.	Central governments (EEA with zero weighting)	Sovereigns and central banks
3.	LRG (excluding EEA with zero weighting)	Regional and local administrative authorities
4.	LRG (EEA with zero weighting)	Regional and local administrative authorities
5.	Development banks	Public entities
6.	Special customers, residential housing	Corporates
7.	Investments	Investments
8.	Other	N/A
9.	Discontinued business	N/A

1. Central governments (excluding EEA with zero weighting)

This customer segment includes sovereign states as well as the associated central banks, and development banks with the status of Multilateral Development Bank (MDB), with the exception of those in the European Economic Area (EEA) and using zero weighting pursuant to CRR. This customer segment is maintained in the Permanent Partial Use (PPU) area at MünchenerHyp.

The VR Rating Countries is used to evaluate the creditworthiness of claims in this segment. The VR Rating Banks was developed in the Cooperative Financial Network under the leadership of DZ BANK AG, and was approved by BaFin and the Bundesbank as an IRBA ratings procedure. The ratings are provided to MünchenerHyp by DZ BANK AG in the context of a rating desk. The provided ratings are subjected to a plausibility check by the analysts at MünchenerHyp and adjusted if necessary.

2. Central governments (EEA, using zero weighting)

This customer segment includes sovereign states, as well as associated central banks, and development banks with the status of Multilateral Development Bank (MDB) within the EEA, using a zero weighting pursuant to CRR. This customer segment is maintained in Permanent Partial Use (PPU) at MünchenerHyp.

The VR Rating Countries is used to evaluate the creditworthiness of claims in this segment.

3. LRG (excluding EEA with zero weighting)

The customer segment of Local and Regional Government (LRG) includes all of the regional governments, local authorities and public bodies, with the exception of those in the EEA, and uses a zero weighting pursuant to CRR. This customer segment is maintained in Permanent Partial Use (PPU) at MünchenerHyp.

The creditworthiness of claims in this customer segment is evaluated on the basis of the LRG rating. The LRG rating was developed under the leadership of the Association of German Pfandbrief Banks (vdp) with the participation of numerous German banks, including MünchenerHyp. The rating procedure was approved by the regulatory authorities for IRBA. The LRG rating takes into account, among other things, the financial strength and debt level of local and regional authorities.

4. LRG (EEA, with zero weighting)

This customer segment includes all of the regional governments, local authorities and public bodies within the EEA and using a zero weighting pursuant to the CRR. This customer segment is maintained in Permanent Partial Use (PPU) at MünchenerHyp.

The creditworthiness of claims in this customer segment is evaluated on the basis of the aforementioned LRG rating.

5. Development banks

This category consists of development banks that do not fulfil German Banking Act requirements to be classified as multilateral development banks. Development banks are contained in the "Public entities" category. They are carried under PPU.

The creditworthiness evaluation of these claims is based on DZ BANK AG's VR Rating Banks.

6. Special customers, residential housing

This customer segment in principle contains claims relating to residential properties and where less than 50% of the

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customers' income is generated by property-related activities. This customer segment is shown in the PPU.

The creditworthiness of claims in this customer segment is evaluated using an expert-based classification procedure (decision matrix).

7. Investments

MünchenerHyp's investment portfolio can be classified as an insignificant investment portfolio per Article 150 CRR. This is because the average accounting value of the investment portfolio, excluding items for legally regulated programmes to support specific industrial sectors, was less than 10% of the modified available equity capital over the past one-year period. As long as this ratio of "accounting value of investment items" to the "modified available equity capital" remains the same, investments will be administered in the PPU.

8. Other

The category of "Other" includes all claims that do not have the characteristics of one of the abovementioned customer segments. The claims in this segment are generally of marginal significance for MünchenerHyp's credit portfolio and are administered in the PPU. Due to the resumption of the commercial property financing business in the USA, current exposures as well as new business are carried under the "Other" category of claims. The creditworthiness evaluation takes place using an appropriate method, frequently on the basis of the expert-based decision matrix.

9. Discontinued business

Pursuant to the terms of Section 14 of the German Solvency Regulation (SolvV), the "Discontinued Business" category defines areas of business where the Bank does not anticipate entering into new exposures or expanding its existing exposures. This category currently includes Geno loans (cooperative loans) with and without release from liability, Mezzanine financing deals outside of Germany, credit lines secured by mortgages, as well as government guaranteed corporate bonds. Discontinued business is administered in the PPU.

In most cases the creditworthiness evaluation takes place either on the basis of the IPRE rating or the decision matrix. These rating procedures are expert-based classification procedures.

Table 17 below provides a breakdown of exposures by exposure class and risk weighting using the standardised approach (in accordance with the risk content allocated to the exposure in the standardised approach). The risk weights shown in Table 17 encompass all those assigned to each credit quality step according to Article 113 to 134 of Part Three, Title II Chapter 2 of the CRR (own funds requirements/own funds requirements for credit risks/standardised approach). The statement of risk exposure value for KSA is shown after the inclusion of credit risk mitigation effects from collateral. In this context, the total amount after credit risk mitigation is higher than before credit risk mitigation because positions from the IRBA portfolio are moved to the KSA portfolio through the provision of collateral. Exposure values of derivatives, securities financing transactions (SFT), etc., are treated under the terms of CCR and for this reason are not shown here.

TABLE 17: EU CR5 – STANDARDISED APPROACH
VALUES ARE SHOWN IN € M

		Risk Weight																
	Exposure class	0%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	250%	370%	1,250%	Other	Deducted	Total	Unrated
		010	020	030	040	050	060	070	080	090	100	110	120	130	140	150	160	170	180
010	Central governments of central banks	835.3	–	20.6	–	45.3	–	–	–	–	–	–	–	–	–	–	–	901.2	10.7
020	Regional governments or local authorities	2,875.4	–	–	–	27.0	–	–	–	–	–	–	–	–	–	–	–	2,902.4	1.0
030	Public sector entities	291.4	–	–	–	–	–	–	–	–	3.8	–	–	–	–	–	–	295.2	3.8
040	Multilateral development banks	77.1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	77.1	77.1
060	Institutions	17.5	–	–	–	0.2	–	–	–	–	30.7	–	–	–	–	–	–	48.4	17.5
070	Corporates	–	–	–	–	–	–	–	–	–	513.4	–	–	–	–	–	–	513.4	512.3
080	Retail	–	–	–	–	–	–	–	–	2.7	–	–	–	–	–	–	–	2.7	2.7
090	Secured by mortgages on immovable property	–	–	–	–	–	73.5	94.7	–	–	–	–	–	–	–	–	–	168.2	168.2
100	Exposures in default	–	–	–	–	–	–	–	–	–	0.7	11.7	–	–	–	–	–	12.4	12.4
140	Collective investment undertakings	–	–	–	–	–	–	–	–	–	–	–	–	–	–	129.8	–	129.8	129.8
150	Equity exposures	–	–	–	–	–	–	–	–	–	115.7	–	–	–	–	–	–	115.7	115.7
160	Other items	0.0	–	–	–	–	–	–	–	–	3.8	–	–	–	–	–	–	3.8	3.8
170	**Total**	**4,096.7**	**–**	**20.6**	**–**	**72.5**	**73.5**	**94.7**	**–**	**2.7**	**668.1**	**11.7**	**–**	**–**	**–**	**129.8**	**–**	**5,170.3**	**1,055.0**

5.5 Structure of Portfolio

This chapter classifies and presents MünchenerHyp's exposures according to various criteria. The information in this chapter is based on the exposure values before the inclusion of credit risk mitigation (CRM). The Bank did not hold any specialised lending exposures or securitisations in 2018.

Table 18 below provides an overview of total RWA forming the denominator of the risk-based capital requirements pursuant to Article 92 CRR. The capital requirements on the disclosure date are compared with the RWA disclosed in the previous interim period thereby providing an overview of RWA development at MünchenerHyp within the respective disclosure periods. The previous reporting period stated as T-1 in the below table refers to the 31 December 2017 date of record.

Table 19 below provides a breakdown of exposures (KSA and IRBA) after deduction of adjustments to value by industry type. The breakdown by exposure class, industry or counterparty types reflects the exposure classes, industries or counterparty types which are defined as significant pursuant to exposure EBA Guideline 2014/14.

The IRBA shows all of the exposure values in the basic IRBA with the exception of Domestic Retail Business, SME and the Retail Business PostFinance. The advanced IRBA is used for domestic Retail Business, SME and the Retail Business PostFinance. The IRBA portfolio for the Retail Business only includes items secured by mortgage liens. The KSA shows all of the exposure values using the standard approach, either as part of the PU or the PPU.

Table 20 shows the geographic distribution of the exposure values (net values of on-balance sheet and off-balance sheet exposures) split by main countries and regions, and classified by exposure classes. The geographic attribution of loans secured by mortgage liens is shown by the country in which the main property is located. All other items are assigned geographically according to the country where the borrower is legally domiciled. Exposures in Switzerland are largely based on the partnership with PostFinance. Exposures in North America refer to the resumption of business in the international commercial property area. The primary focus of the Bank's European business is on commercial real estate financing in France, the Benelux countries, Spain, and Great Britain. Individual exposures outside of the listed main countries and regions are shown in the "Other countries" column.

TABLE 18: EU OV1 – OVERVIEW OF RISK-WEIGHTED ASSETS (RWA)

EU OV1 – Overview of Risk-Weighted Assets (RWA)

			RWA		Minimum capital requirements
			T	T-1	T
			010	020	030
010		Credit risk (excluding CCR)	5,498.7	4,778.3	439.9
020	Article 438 (c)(d)	of which standardised approach (SA)	855.5	590.5	68.4
030	Article 438 (c)(d)	of which the foundation IRB (FIRB) approach	2,952.6	2,672.6	236.2
040	Article 438 (c)(d)	of which the advanced IRB (AIRB) approach	1,690.6	1,515.2	135.2
050	Article 438 (d)	of which equity IRB under the simple risk-weight approach or the IMA			
060	Article 107, Article 438 (c)(d)	CCR	144.1	150.0	11.5
070	Article 438 (c)(d)	of which mark to market	144.1	150.0	11.5
080	Article 438 (c)(d)	of which original exposure			
090		of which standardised approach			
100		of which internal model method (IMM)			
110	Article 438 (c)(d)	of which risk exposure amount for contributions to the default fund of a CCP	0.2	0.1	0.0
120	Article 438 (c)(d)	of which CVA	311.6	326.6	24.9
130	Article 438 (e)	Settlement risk			
140	Article 449 (o), (i)	Securitisation exposures in banking book (after the cap)			
150		of which IRB approach			
160		of which IRB supervisory formula approach (SFA)			
170		of which internal assessment approach (IAA)			
180		of which standardised approach			
190	Article 438 (e)	Market risk			
200		of which standardised approach			
210		of which IMA			
220	Article 438 (e)	Large exposures			
230	Article 438 (f)	Operational risk	346.4	268.8	27.7
240		of which basic indicator approach	346.4	268.8	27.7
250		of which standardised approach			
260		of which advanced measurement approach			
270	Article 437, para. 2, Article 48, Article 60	Amounts below the thresholds for deduction (subject to 250% risk weight)			
280	Article 500	Floor adjustment			
290		**Total**	**6,301.0**	**5,523.7**	**504.1**

TABLE 19: EU CRB-D – CONCENTRATION OF EXPOSURES BY INDUSTRY OR COUNTERPARTY TYPES

IN € M

		Financial entities and economically independent private persons in the financial sector	Non-financial entities and economically independent private persons in the non-financial sector	Economically dependent and other private persons	Public budgets	Non-profit organisations	Total
		10	20	30	40	50	60
2	Institutions	718.6	–	–	–	–	718.6
3	Corporates	1,494.8	8,169.0	7.7	–	–	9,671.5
5	of which: SME	1,406.8	5,719.7	–	–	–	7,126.5
6	Retail Business	140.4	3,337.5	22,198.4	–	0.5	25,676.8
7	Secured by mortgages on immovable property	140.4	3,337.5	22,198.4	–	0.5	25,676.8
8	SME	140.4	3,337.5	–	–	0.5	3,478.3
9	Non-SME	–	–	22,198.4	–	–	22,198.5
15	**Total IRB approach**	**2,353.8**	**11,506.5**	**22,206.1**	**–**	**0.5**	**36,066.9**
16	Central governments or central banks	289.4	–	–	486.1	–	775.5
17	Regional governments or local authorities	–	27.1	–	2,859.7	–	2,886.8
18	Public sector entities	179.1	–	–	116.1	–	295.2
19	Multilateral development banks	77.1	–	–	–	–	77.1
21	Institutions	48.4	–	–	–	–	48.4
22	Corporates	27.1	664.1	3.0	–	1.1	695.3
23	of which: SME	–	310.2	–	–	0.2	310.4
24	Retail Business	–	0.4	3.1	–	–	3.5
25	of which: SME	–	0.4	–	–	–	0.4
26	Secured by mortgages on immovable property	2.8	140.3	25.7	–	6.4	175.2
27	of which: SME	–	47.0	–	–	6.4	53.4
28	Exposures in default	–	12.2	0.1	–	–	12.3
32	Collective investments undertakings	129.8	–	–	–	–	129.8
33	Equity	104.4	11.3	–	–	–	115.7
34	Other items	–	3.8	–	–	–	3.8
35	**Total standardised approach**	**858.1**	**859.2**	**31.9**	**3,461.9**	**7.5**	**5,218.6**
36	**Total**	**3,211.9**	**12,365.7**	**22,238.0**	**3,461.9**	**8.0**	**41,285.5**

TABLE 20: EU CRB-C – GEOGRAPHICAL BREAKDOWN OF EXPOSURES

		Germany	Europe ex Germany and Switzerland	North America	Switzerland	Other countries	Total
		10	20	30	40	50	60
2	Institutions	178.7	538.7	0.7	0.5		718.6
3	Corporates	7,213.4	2,458.1				9,671.5
5	of which: SME	5,192.7	1,933.8				7,126.5
6	Retail Business	21,096.3			4,580.5		25,676.8
7	Secured by real estate property				4,580.5		25,676.8
8	SME	3,353.1			125.2		3,478.4
9	Non-SME	17,743.2			4,455.3		22,198.4
15	**Total IRB approach**	**28,488.4**	**2,996.8**	**0.7**	**4,581.0**		**36,066.9**
16	Central governments or central banks	289.4	486.1				775.5
17	Regional governments or local authorities	2,670.5	189.3		27.0		2,886.8
18	Public sector entities	182.9	112.3				295.2
19	Multilateral development banks					77.1	77.1
21	Institutions	48.4					48.4
22	Corporates	70.3	191.0	431.1	2.9		695.3
23	of which: SME	19.4	0.1	290.9			310.4
24	Retail Business	3.5	0.0				3.5
25	of which: SME	0.4					0.4
26	Secured by real estate property	102.5		62.5	10.2		175.2
27	of which: SME	29.8		23.6			53.4
28	Exposures in default	0.1		12.2			12.3
32	Collective investments undertakings	125.8	4.0				129.8
33	Equity	115.7					115.7
34	Other items	0.0		3.8			3.8
35	**Total standardised approach**	**3,609.1**	**982.7**	**509.6**	**40.1**	**77.1**	**5,218.6**
36	**Total**	**32,097.5**	**3,979.5**	**510.3**	**4,621.1**	**77.1**	**41,285.5**

Table 21 presents the total and average net exposure values (corresponding to the accounting values resented in the financial statements) during the reporting period and split by exposure classes. The net value of on-balance sheet items is calculated by deducting value adjustments or write-downs from the gross amount. For off-balance sheet items the net value equals the gross amount of the respective exposure item less provisions. Column B of the table shows the average net exposure values as recorded at the end of each quarter of the reporting period.

TABLE 21: EU CRB-B – TOTAL AND AVERAGE NET AMOUNT OF EXPOSURES

		a	b
		Net exposure at the end of the period	Average net exposure over the reporting period
		010	020
2	Institutions	718.6	953.7
3	Corporates	9,671.5	9,041.9
5	of which: SME	7,126.5	6,283.0
6	Retail Business	25,676.8	25,057.0
7	Secured by real estate property	25,676.8	25,057.0
8	SME	3,478.4	3,443.5
9	Non-SME	22,198.4	21,613.5
15	**Total IRB approach**	**36,066.9**	**35,052.6**
16	Central governments or central banks	775.5	650.4
17	Regional governments or local authorities	2,886.8	3,358.6
18	Public sector entities	295.2	381.6
19	Multilateral development banks	77.1	78.4
21	Institutions	48.4	40.5
22	Corporates	695.3	562.2
23	of which: SME	310.4	148.7
24	Retail Business	3.5	14.3
25	of which: SME	0.4	1.1
26	Secured by real estate property	175.2	141.6
27	of which: SME	53.4	39.7
28	Exposures in default	12.3	12.9
32	Collective investments undertakings	129.8	138.1
33	Equity	115.7	115.7
34	Other items	3.8	5.2
35	**Total standardised approach**	**5,218.6**	**5,499.5**
36	**Total**	**41,285.5**	**40,552.1**

Table 22 provides a breakdown of the net values of on-balance sheet exposures (excluding commitments) by contractual residual maturities.

TABLE 22: EU CRB-E – RESIDUAL MATURITY OF EXPOSURES

		a	b	c	d	e	f
		Net exposure value					
		On demand	<= 1 year	> 1 year <= 5 years	> 5 years	No stated maturity	Total
		10	20	30	40	50	60
2	Institutions	12.7	88.7	415.7	201.5	0.0	718.6
3	Corporates	0.0	194.3	2,539.3	6,091.7	10.1	8,835.4
5	of which: SME	0.0	194.1	2,119.2	4,468.1	10.1	6,791.5
6	Retail Business		620.8	2,396.9	19,419.9	5.0	22,442.6
7	Secured by real estate property		620.8	2,396.9	19,419.9	5.0	22,442.6
8	SME	0.0	27.4	152.5	2,950.8	1.0	3,131.7
9	Non-SME	0.0	593.4	2,244.4	16,469.1	4.0	19,310.9
15	**Total IRB approach**	**12.7**	**903.8**	**5,351.9**	**25,713.1**	**15.1**	**31,996.6**
16	Central governments or central banks	289.3	45.3	54.8	386.1	0.0	775.5
17	Regional governments or local authorities	0.0	5.3	587.1	2,294.4	0.0	2,886.8
18	Public sector entities	0.0	9.9	111.8	173.5	0.0	295.2
19	Multilateral development banks	0.0	0.0	12.8	64.3	0.0	77.1
21	Institutions	17.2	0.0	0.0	22.9	8.3	48.4
22	Corporates	0.0	139.2	335.5	114.2	0.0	588.9
23	of which: SME	0.0	23.4	249.5	16.3	0.0	289.2
24	Retail business	0.0	0.0	0.5	2.2	0.0	2.7
25	of which: SME	0.0	0.0	0.4	0.0	0.0	0.4
26	Secured by mortgages on immovable property	0.0	0.0	36.1	125.1	0.0	161.2
27	of which: SME	0.0	0.0	25.7	23.2	0.0	48.9
28	Exposures in default	0.0	11.5	0.0	0.1	0.7	12.3
32	Collective investments undertakings	0.0	0.0	0.0	0.0	129.8	129.8
33	Equity	0.0	0.0	0.0	0.0	115.7	115.7
34	Other items	0.0	0.0	0.0	0.0	3.8	3.8
35	**Total standardised approach**	**306.5**	**211.2**	**1,138.6**	**3,182.8**	**258.3**	**5,097.4**
36	**Total**	**319.2**	**1,115.0**	**6,490.5**	**28,895.9**	**273.4**	**37,094.0**

5.6 Risk Mitigation and Hedging

Both the IRBA and the KSA permit institutions to take the applied credit risk mitigation techniques (collateral) into account when calculating their regulatory own funds requirements. In order to take collateral into account when calculating own funds requirements, the institutions must meet minimum requirements that are explicitly regulated in the CRR and the KWG, as well as in the interpretation decisions developed by the supervisory authority and in circulars. All of the classes of collateral used to mitigate credit risk at MünchenerHyp are recognised pursuant to CRR.

MünchenerHyp's principles of collateralisation are an integral part of its business and risk strategy, and are regulated in detail by internal organisational instructions. This involves the definition of category and fundamental framework conditions for recognising, evaluating, monitoring and reviewing collateral accepted by MünchenerHyp as a Pfandbrief bank. The collateral in question is defined in detail in the internal organisational guidelines, and separated by country, property category, intended usage and other characteristics.

MünchenerHyp does not practice balance sheet netting. With regard to derivative items, net market values are offset vis-a-vis a counterparty using cash deposits that were provided. Volatility adjustments are only relevant as factors for calculating securities positions in connection with repurchase agreements.

Eligible collateral is described in Article 194 (3) 3 CRR in association with Articles 197–200 CRR. As a general rule, the following categories of collateral are recognised at MünchenerHyp:

- Residential and commercial property[3] secured by mortgage liens pursuant to Article 199 CRR. Because of its strategic direction, MünchenerHyp primarily uses mortgage securities for completed security objects, or for security objects that are to be completed by the time the credit has been paid out in full.
- Warranties in the form of guarantees / bonds: the issuer of warranties that MünchenerHyp considers to be risk mitigating are primarily central governments, regional governments and local authorities pursuant to Article 201 (1) CRR.
- Pursuant to Article 193 (4) CRR, MünchenerHyp defines financial collateral exclusively in the context of calculating cash securities (collateral) for derivatives and repo transactions. The exposures are determined based on netting, and collateral offsetting.

MünchenerHyp monitors possible risk concentrations and cluster risks that it enters into on the basis of its strategic orientation as a mortgage bank. Here the sizes, property categories and regional distribution of the properties play a role. These risk drivers are subject to strict monitoring. In this context, the publication per Article 28 PfandBG (German Pfandbrief Act) should be noted, which clearly explains potential cluster risks in MünchenerHyp's cover funds on a quarterly basis.

In a quantitative sense, this chapter discloses collateral that has a risk-mitigating effect on regulatory capital backing requirements. Collateral is taken into consideration in accordance with CRR either in the Probability of Default (PD), the Loss Given Default (LGD), or using a risk weighting set defined by the supervisory authority for the secured claim. In the Retail Business, which is subject to the advanced IRBA, collateral secured by mortgage liens is implicitly taken into account via the LGD.

Table 23 shows all of the collateral and financial guarantees used by MünchenerHyp to mitigate credit risk for all secured exposures irrespective of whether the calculation of RWA was made using the standardised approach or the IRB approach. MünchenerHyp does not use credit derivatives as collateral.

[3] For MünchenerHyp, pure loan financing for property is relevant here in terms of the requirements defined by the supervisory authority. MünchenerHyp does not appear as a lease provider (and therefore an owner) of properties. The regulations for property leasing are thus not relevant to MünchenerHyp at this time.

The KSA position "Equity exposures" is not included in this table.

The row "off-balance sheet" was added for the purpose of maintaining consistency with disclosure template CR1-A (Table 25).

TABLE 23: EU CR3 – CRM TECHNIQUES - OVERVIEW

		a	b	c	d	e
		Exposures unsecured: Carrying amount	Exposures secured Carrying amount	Exposures secured collateral	Exposures secured financial guarantee	Exposures secured credit derivative
		10	20	30	40	50
1	Total loans	4,334.8	30,245.4	30,119.1	126.3	
2	Total debt securities	2,382.0	15.0		15.0	
2,5	Off-balance sheet	817.5	3,375.1	3,375.1		
3	**Total exposures**	**7,534.3**	**33,635.5**	**33,494.2**	**141.3**	
4	of which defaulted	18.4	56.2	56.2		

Table 24 shows collateral taken into account for KSA exposures. As with the IRBA exposure classes, KSA exposure classes do not take risk mitigation into account for any financial collateral.

TABLE 24: EU CR4 – STANDARDISED APPROACH AND CREDIT RISK MITIGATION (CRM) EFFECTS

		a	b	c	d	e	f
		Exposures before CCF and CRM		Exposures post CCF and CRM		RWA and RWA density	
	Exposure Class	On-balance sheet amount	Off-balance sheet amount	On-balance sheet amount	Off-balance sheet amount	RWA	RWA density
		10	20	30	40	50	60
1	Central governments or central banks	775.5		901.2		9.9	1.1 %
2	Regional government or local authorities	2,886.8		2,902.4		5.4	0.2 %
3	Public sector entities	295.2		295.2		3.8	1.3 %
4	Multilateral development banks	77.1		77.1		0.0	0.0
6	Institutions	48.4		48.4		30.7	63.4 %
7	Corporates	588.9	106.3	459.7	53.7	513.1	100.0 %
8	Retail business	2.7	0.8	2.3	0.4	2.0	74.1 %
9	Secured by mortgages on immovable property	161.2	14.0	161.2	7.0	72.2	42.9 %
10	Exposures in default	12.4		12.4		18.2	148.0 %
14	Collective investments undertakings	129.8		129.8		80.7	62.2 %
15	Equity	115.7		115.7		115.7	100.0 %
16	Other items	3.8		3.8		3.8	100.0 %
17	**Total**	**5,097.4**	**121.1**	**5,109.1**	**61.1**	**855.5**	**16.6 %**

5.7 Non-Performing Loans and Provisions for Risk
In view of MünchenerHyp's extremely low number of non-performing loans (NPL) it is not to be referred to as a "high NPL bank" as described in the ECB's Guidance to Bank's on Non-Performing Loans.

The procedures related to NPLs and the avoidance of NPLs that have been implemented by MünchenerHyp for a long time enabled the Bank to successfully avoid NPLs to a great extent in the 2018 business year and in the past.

Based on the figures regarding NPLs disclosed in the tables shown below, MünchenerHyp had a NPL ratio of 0.28%, which reflects the total volume of NPLs to the total loan portfolio, Therefore, MünchenerHyp's NPL ratio qualifies as being particularly low.

As a "Non-NPL-Bank" MünchenerHyp naturally adheres to the rules set out in the ECB's Guidance to Bank's on Non-Performing Loans. However, due to reasons of proportionality, the Bank does not present comprehensive disclosure of information in the disclosure tables contained in Annex 7.

MünchenerHyp defines Non-Performing Exposures/ Non-Performing Loans as claims

- Where a default event pursuant to the definition of "default" has occurred, or
- Forbearance measures have already been granted to the debtor and
  - » a) Additional concessions have been made within the 2-year forbearance probation period or
  - » b) Despite concessions made within the 2-year probation period, the debtor is still more than 30 days in arrears.

MünchenerHyp defines affected loans as being in "**Default**" when certain criteria are met. These criteria include: 90 days past due, creation of an individual adjustment to value, debtor is unlikely to pay, application for insolvency, termination, adjustment to value is required, restructuring with economic loss. Loans in default are always considered to be non-performing loans.

All loans that have had their individual value adjusted are defined as "**impaired**" loans.

The debtor is considered to be in default if restructuring results in a substantial economic loss or a significant delay in time, and is to be identified accordingly as "Restructuring (with material loss)".

A substantial economic loss is considered to take place if

- More than 2.5% of the currently committed loan amount (total exposure) is waived, or
- The member of the Board of Management responsible for granting waivers and allowances (in accordance with currently valid definitions of responsibility) declare a waiver.

MünchenerHyp classifies exposures that are not categorised as "Non-Performing Exposures" as "Performing Exposures". There is no overlap between the two subsets.

In accordance with Annex 7 of the ECB's Guidance to Bank's on Non-Performing Loans, MünchenerHyp employs the following assumptions to identify impaired assets.

- **Materiality thresholds:** € 100 in arrears and 2.5% of the total amount authorised
- **90 day past due criterion:** Method used to count days past due. Every working day an assessment takes place at debtor level to determine if a material delay exists. The first day past due is counted the first time a debtor misses a payment. For every day thereafter when a material delay takes place the number of past due days is raised by one day. As soon as the debtor is no longer materially past due the number of past due days is reduced to zero.
- **Indicators of unlikeliness to pay:** In accordance with Article 178 (1) a CRR, MünchenerHyp assesses that a debtor is highly unlikely to repay his obligations in full unless certain measures are taken such as the recovery of collateral (repossession and sale of collateral).

This default event is to be interpreted as, and applied, under the term "Other default events" to the extent that a classification is not possible under one of the other listed default events.

Examples of **"Sufficient Evidence"** of the unlikeliness of repayment are:

1. Unsuccessful personal foreclosure measures before termination
2. Recovery of additional collateral
3. Private sale/ distressed sale of property due to creditworthiness issues as alternative to a material foreclosure action by the bank (irrespective of whether this action results in the partial or full repayment of the amount due)
4. Entry into the debtors' list
5. Permanent serious limitations of ability to make compensatory capital repayments which are past due for three months or longer because of creditworthiness issues
6. Ongoing interest payment charges have been waived

"Possible Evidence" of the unlikeliness of repayment could be information available from external credit agencies (e.g. SCHUFA or Creditreform), and especially pertinent proceedings such as debt collection and asset seizures.

- **Impairment policies** related to non-performing exposures: MünchenerHyp has established certain criteria in its credit business that if triggered will lead to a mandatory assessment to determine if an individual adjustment to value (IAV) of an exposure is required. In addition, so-called soft criteria also exist which may make it professionally feasible to assess the need for an IAV and thus could serve as a trigger for an IAV.

Criteria which will lead to a mandatory assessment of the need for an IAV are:

1. For all business divisions :defaulted exposures
2. Complementary to the Retail Business: Past due over 45 days (individual exposure level) and payment arrears of over € 2,500 and € 0 amount covered by collateral, or past due more than 45 days (individual exposure level), € 0 amount covered by collateral and payment arrears of over € 10,000.
3. Complementary to the individual business: rating of ≥ 3e, or overdue more than 45 days (individual exposure level) and payment arrears of over € 2,500.

If significant new information is received for a loan that already has had an IAV taken the loan will require a renewed assessment and, if needed, an adjustment (increase, reduction, or complete write-off) of the IAV. Irrespective of this, an updated assessment of the IAV taken will take place on the date of record, 30 September, every year.

The managerial instructions which form the basis for the IVA assessment are examined every year by the specialised unit responsible for IVA management. The Board of Management will decide on proposals concerning adjustments that may arise from this review.

Beyond these measures, MünchenerHyp created a general adjustment to value (GAV) as a precautionary measure to cover latent lending risks. The basis for calculating this GAV are the terms contained in a Federal Ministry of Finance notice dated 10 January 1994. The GAV is calculated based on the average volume of defaults that took place over the last five years in relation to the average volume of loans-at-risk made during this period. Furthermore, contingency reserves under Article 340f German Commercial Code (HGB) were also created. These contingency reserves are based on a prudent commercial judgement of reserves required to contain the special risks arising from the Banks business operations.

Table 25 below shows the distribution of defaulted and non-defaulted exposures by exposure category. This table provides a comprehensive overview of the credit quality of MünchenerHyp's on-balance sheet and off-balance sheet exposures.

It should be noted that MünchenerHyp does not account for reserves allocated to the KSA portfolio, and especially reserves pursuant to Article 340 f of the German Commercial Code, as general adjustments to value. The corresponding amount of about € 5 million is treated as supplementary capital.

MünchenerHyp discloses figures from its 2018 business year in column f in the below table.

TABLE 25: EU CR1-A – CREDIT QUALITY OF EXPOSURES BY EXPOSURE CLASS AND INSTRUMENT

		a	b	c	d	e	f	g
		Gross carrying values of					Credit risk adjustment charges of the period	Net values
		Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs		(a+b-c-d)
		10	20	30	40	50	60	70
2	Institutions		719.0		0.4			718.6
3	Corporates	17.2	9.672.6	2.2	16.1		0.1	9.671.5
5	of which: SME	17.2	7.124.5	2.2	13.0		0.1	7.126.5
6	Retail Business	56.2	25.671.1	9.0	41.5		3.4	25.676.8
7	Secured by real estate property	56.2	25.671.1	9.0	41.5		3.4	25.676.8
8	SME	20.6	3.471.1	4.4	9.0		1.3	3.478.3
9	non-SMU	35.6	22.200.0	4.6	32.5		2.1	22.198.4
15	**Total IRB approach**	**73.4**	**36.062.7**	**11.2**	**58.0**		**3.5**	**36.066.9**
16	Central governments or central banks		775.5					775.5
17	Reginal governments or local authorities		2.886.8					2.886.8
18	Public sector entities		295.2					295.2
19	Multilateral development banks		77.1					77.1
21	Institutions		48.4					48.4
22	Corporates		695.3					695.3
23	of which: SME		310.4					310.4
24	Retail Business		3.5					3.5
25	of which: SME		0.4					0.4
26	Secured by mortgages on immovable property		175.2					175.2
27	of which: SME		53.4					53.4
28	Exposures in default	41.8		29.5			2.2	12.3
32	Collective investments undertakings		129.8					129.8
33	Equity		115.7					115.7
34	Other items		3.8					3.8
35	**Total standardised approach**	**41.8**	**5.206.3**	**29.5**			**2.2**	**5.218.6**
36	**Total**	**115.2**	**41.269.0**	**40.6**	**58.0**		**5.7**	**41.285.5**
37	of which: Loans	111.0	34.569.0	40.6	58.0		5.7	34.581.3
38	of which: Debt securities		2.397.0					2.397.0
39	of which: Off-balance sheet exposures	4.2	4.187.3					4.191.4

Rows 37 to 39 provide a breakdown of the total shown in row 36, although "Equity instruments" was not shown.

The following chart provides a breakdown by industry or counterparty types.

TABLE 26: EU CR1-B – CREDIT QUALITY OF EXPOSURES BY INDUSTRY OR COUNTERPARTY TYPES

		a	b	c	d	e	f	g
		Gross carrying values of						Net values
		Defaulted exposures (in € m)	Non-defaulted exposures (in € m)	Specific credit risk adjustment (in € m)	General credit risk adjustment (in € m)	Accumulated write-offs (in € m)	Charges for credit risk adjustments	(a+b-c-d)
		010	020	030	040	050	060	070
010	Financial entities and economically independent private persons in the financial sector	5.0	3,211.1	0.6	3.6		0.1	3,211.9
020	Non-financial entities and economically independent private persons in the non-financial sector	73.7	12,348.4	34.5	21.9		3.1	12,365.7
030	Economically dependent and other private persons	35.8	22,239.6	4.9	32.5		2.2	22,238.0
040	Public budgets		3,461.9					3,461.9
050	Non-profit organisations	0.7	8.0	0.7	0.0		0.3	8.0
060	**Total**	**115.2**	**41,269.0**	**40.6**	**58.0**		**5.7**	**41,285.5**

Table 27 provides the geographic attribution of loans secured by mortgage liens by the country in which the main property is located. All other items are assigned according to the country where the commercial borrower is legally domiciled.

TABLE 27: EU CR1-C - CREDIT QUALITY OF EXPOSURE BY GEOGRAPHY

		a	b	c	d	e	f	g
		Gross carrying values of					Charge for credit risk adjustments	Net values
		Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs		(a+b-c-d)
	005	010	020	030	040	050	060	070
010	Germany	59,3	32.095,4	9,2	48,0		3,1	32.097,5
020	Europe ex Germany and Switzerland	13,2	3.973,0	1,9	4,8		0,1	3.979,5
030	North America	41,5	498,0	29,2			2,1	510,3
040	Switzerland	1,2	4.625,5	0,4	5,2		0,4	4.621,1
050	Other geographical areas		77,1					77,1
060	**Total**	**115,2**	**41.269,0**	**40,6**	**58,0**		**5,7**	**41.285,5**

Table 28 below provides a breakdown of the ageing of past due on-balance sheet amounts (excluding commitments) irrespective of their impairment status. The amounts shown are the gross carrying values (corresponding to carrying values before write-downs of values and provisions as stated in the annual statement of accounts).

TABLE 28: EU CR1-D – AGEING OF PAST-DUE EXPOSURES

		a	b	c	d	e	f
		Gross carrying values					
		≤ 30 days	> 30 days ≤ 60 days	> 60 days ≤ 90 days	> 90 days ≤180 days	> 180 days ≤ 1 year	> 1 year
		10	20	30	40	50	60
10	Loans	27.9	1.3	1.6	4.3	8.3	67.7
20	Debt securities						-
30	Total exposures	27.9	1.3	1.6	4.3	8.3	67.7

Table 29 below provides a breakdown of impaired exposures pursuant to Commission Implementing Regulation (EU) No. 680/2014. The gross carrying values shown here correspond to the carrying values before impairment, provisions and negative changes in the fair value of amounts due to credit risk as reported in the annual statement of accounts.

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TABLE 29: EU CR1-E – NON-PERFORMING AND FORBORNE EXPOSURES

		a	b	c	d	e	f	g	h	i	j	k	l	m
		Gross carrying amount of performing and non-performing exposures							Accumulated impairment and provisions and negative fair value adjustments due to credit risk				Collateral and financial guarantees received	
			Of which performing but	Of which	Of which non-performing				On performing exposures		On non-performing exposures		On non-performing exposures	Of which forborne exposures
			Past due > 30 days and <= 90 days	performing forborne		of which defaulted	of which impaired	of which forborne		of which forborne		of which forborne exposures		
10	Debt securities	3,613.0												
20	Loans and advances	36,207.2	3.5	0.7	110.5	110.2	69.9	5.9	63.0	0.0	40.6	0.0	69.0	6.2
30	Off-balance sheet exposures	4,191.4			4.2	4.2							4.1	

Table 30 discloses the changes in MünchenerHyp's stock of general and specific credit risk adjustments held against loans and debt securities that are defaulted or impaired. The figures shown are the amounts of accumulated specific and general credit risk adjustments for impaired and defaulted loans and debt securities. MünchenerHyp shows the previous business year's figures as amounts for the previous reporting figure. NEW 3 May: Pursuant to § 340f of the German Commercial Code (HGB), accumulated general credit adjustments included reserves of € 50 million on the date of record while general adjustments to value included reserves of € 13 million on the date of record.

TABLE 30: EU CR2-A – CHANGES IN THE STOCK OF GENERAL AND SPECIFIC CREDIT RISK ADJUSTMENTS

		a	b
		Accumulated specific credit risk adjustment	Accumulated general credit risk adjustment
		010	020
1	**Opening balance**	**46.5**	**53.0**
2	Increases due to amounts set aside for estimated loan losses during the period	4.9	
3	Decreases due to amounts reversed for estimated loan losses during the period	5.8	
4	Decreases due to amounts taken against accumulated credit risk adjustments	6.3	
5	Transfers between credit risk adjustments		
6	Impact of exchange rate differences	1.3	
7	Business combinations, including acquisitions and disposals of subsidiaries		
8	Other adjustments		10.0
9	**Closing balance**	**40.6**	**63.0**
10	Recoveries on credit risk adjustments recorded directly to the statement of profit or loss		
11	Specific credit risk adjustments directly recorded to the statement of profit or loss	0.8	

Table 31 below discloses changes in MünchenerHyp's stock of defaulted loans and debt securities excluding commitments made by the Bank.

The item "Other changes" in row 5 primarily reflects currency fluctuations as well as redemptions of existing impaired loans.

TABLE 31: EU CR2-B – CHANGES IN THE STOCK OF DEFAULTED AND IMPAIRED LOANS AND DEBT SECURITIES

		a
		Gross carrying value defaulted exposures
1	**Opening balance**	**143.3**
2	Loans and debt securities that have defaulted or impaired since the last reporting period	25.3
3	Returned to non-defaulted status	−4.1
4	Amounts written off	−6.7
5	Other changes	−43.4
6	**Closing balance**	**114.4**

5.8 Risk Reports and Management Information Systems

Risk reports provide the foundation for management decisions. These reports are regularly prepared for various groups.

The Bank's credit risk situation is extensively presented in the Credit Risk Report, which is prepared on a quarterly basis. Particular attention is devoted to the following risk-relevant subjects in risk reporting: portfolio structure, limit utilisation, quantification of risk, cluster and concentration risks, provisions for risk, workout management's portfolio, intensive attention portfolio, as well as the development of new business. All risk-relevant key figures are reviewed within the context of the quarterly risk report, including expected and unexpected losses as applicable to both the consolidated portfolio and sub-portfolio level. In addition, for each consolidation level, each portfolio is split by rating classification, size category, loan-to-value ratio, type of property, region and broker, among other criteria. The Credit Risk Report is distributed to:

- The Supervisory Board
- Board of Management
- Various unit and department heads

The extent to which the limits are utilised for capital market purposes is measured on a daily basis and a corresponding utilisation report is submitted once a week. A separate monthly status report is reported to the Board of Management consisting of a monitoring list presenting the utilisation of limits for the capital market sector, and if they were exceeded at any time. The weekly utilisation report reviewing the limits for the capital market is distributed to the following executive bodies:

- Member of the Board of Management responsible for Transaction Management Treasury
- Head of Transaction Management Treasury
- Head of Transaction Management – Active

A report will be submitted to the above executive bodies pursuant to the escalation procedure if the limits are exceeded in the area of Capital Market – Active.

The Transaction Management units are responsible for monitoring the country limits within the context of new business decisions. Measurement of the utilisation of the country limits for mortgage business purposes takes place on a daily basis and is prepared by the Transaction Management unit. Pursuant to the escalation procedure, a report will be submitted to the Board of Management and the responsible market unit within the framework of proposed resolutions for new business purposes in the event that a country limit for mortgage business is exceeded. The Credit Risk Controlling unit is responsible for the quarterly assessment of country limits for the mortgage business within the Credit Risk Report. Country limits for municipal loans are treated similarly.

6 Market Price Risk

6.1 Containment

Market price risks include risks to the value of items or portfolios due to changes in market parameters, e.g. interest rates or exchange rates. They are quantified as a potential present-value loss using the present-value model. We distinguish between risks associated with changes in interest rates, (credit) spreads, options, currency and stocks.

The interest change risk describes the risk that the market value of interest-rate-dependent investments or liabilities could develop negatively. It is the most important component of market price risks for MünchenerHyp.

The credit spread is defined as the difference in yield for a risky and a non-risky bond. Spread risks account for the danger that this difference in interest rates could change despite no changes taking place in creditworthiness. The reasons for changes in yield premiums are: varying estimates by market participants, actual changes in issuers' credit quality – as long as this is not already reflected in the rating – and macroeconomic factors that affect creditworthiness categories. All bonds are affected by credit spread risk.

Among other considerations, options also include the following risks:

- Vega: the risk that increasing or declining volatility will change the value of a derivative instrument
- Theta: the risk that the value of a derivative instrument will change over time
- Rho: the risk that the option value will change if the risk-free interest rate changes
- Gamma: the risk that the option deltas will change if the price of the underlying value changes

The currency risk describes the risk that the market value of exchange-rate-dependent investments or liabilities could develop negatively due to changes in the exchange rate.

Stock risk refers to the risk of a negative price development in the stock market that leads to a decline in the value of an asset. Stock risks are only of minor relevance for MünchenerHyp as – in addition to our existing investments within the Cooperative Financial Network – only a special fund has been established that may invest a portion of its assets in equities.

6.2 Strategies and Processes

In order to manage market price risks, all transactions at MünchenerHyp are subject to a daily present-value analysis in the risk management system. As a rule, structured transactions are secured with a micro-hedge, which is equivalent to the evaluation of a synthetic floater when valuing the interest rate risk. Thus far deposits have not played a big role for MünchenerHyp and at the end of the 2018 business year they totalled just under € 100 million.

The Delta vector is the backbone of our interest rate risk management system and is calculated on a daily basis. This figure is determined by the change in the present value incurred per range of maturities when the mid-swap curve is raised by one basis point. MünchenerHyp uses the value-at-risk figure (VaR) to identify and limit market risks. Linear as well as non-linear risks are taken into consideration using a historic simulation containing the risk factors of interest rates, foreign exchange rates and volatility when calculating value-at-risk. Additional stress scenarios are used here to measure the effect of extreme shifts in risk factors.

The following assumptions are made to determine the VaR associated with the premature repayment of loans:

- The possibility that a borrower will repay his loan before it matures pursuant to Article 489 BGB is modelled using an adjusted cash-flow and Bermudan receiver swaptions, which are entered in the performance and risk calculation as model transactions. The currently relevant portfolio of loans is determined weekly for modelling purposes and split into interest-rate-sensitive and non-interest-rate-sensitive borrowers. The group of non-interest-rate-sensitive borrowers is further broken down into borrowers who will always repay their loans early ("Always Repay Early") regardless of the level of interest rates and those borrowers who will not repay their loans prematurely (Never Repay Early) regardless of any other circumstances. No further modelling is conducted for the Never Repay Early group. However, for the Always Repay Early group the average date of notice for premature repayments is determined using historic early repayment dates and the potential repayment date is accounted for using an adjusted cash-flow. The model used for interest-rate-sensitive borrowers uses historic repayment ratios that form a repayment matrix (when and at which interest rate delta will a loan be terminated) and an interest rate structure model that predicts the future development of interest rates and also involves modelling using an adjusted cash-flow and Bermudan receiver swaptions.
- The possibility that a borrower will exercise his contractual right to repay his loan before it matures is modelled using an adjusted cash-flow model, whereby the historically observed premature repayment rate options exercised to repay loans before they mature is applied against the current sum of outstanding mortgage loans that have conditions that allow unscheduled repayment options to simulate the future rate at which early repayment will take place. The adjusted cash-flow model is updated regularly.
- Payment obligations arising from mortgage loans are presented based on an estimated payments profile.
- As MünchenerHyp has thus far only managed a very limited deposits business, the Bank has not yet modelled them.
- In the case of bonds treated as assets it is assumed that the principle will be repaid upon maturity. Bonds carrying explicit call rights are included with delta-weighting in the measure of risk exposure.

The current (daily) stress scenarios for managing interest rate risk are:

- Legal regulatory requirements: The current interest rate curve is completely parallel shifted up and down by 200 basis points for every separate currency used. A floor is set at zero in the down shift scenario, which means that negative interest rates are not allowed although, however, negative original values are retained. The worst result of the two shifts is accounted for in each currency and added to the total value.
- Parallel shifts: The current interest rate curve is completely shifted up and down by 100 basis points across all currencies. No floor of 0 is set for the downwards shift, i.e. negative interest rates are permitted. The worst result of the two shifts is used for calculation purposes.
- Steepening / flattening: Pursuant to Basel requirements, the current interest rate curve is rotated in both directions around the 3-year rate as the fixed point. Scenario permits use of possible negative interest rates.

The following events are used for historical simulation purposes:

- September 11, 2001 terror attack in New York: Changes seen in market prices between September 10, 2001 and September 24, 2001 – the immediate market reaction to the attack – are transferred using the current levels as a base level.
- The 2008 crisis in the financial markets: Changes in interest rates and foreign exchange rates noted between 12 September 2008 (last banking day before the collapse of Lehman Brothers) and 10 October 2008 are played out using the current levels.
- Brexit: the scenario presents changes in interest rates and foreign exchange rates noted following the Brexit referendum on 23 June 2016 and 24 June 2016.

The current (daily) credit spread stress scenarios are:

- Parallel shifts: All credit spreads are shifted up and down by 100 basis points. The worst result of the two shifts is used for calculation purposes.
- Historical simulation of the collapse of the investment bank Lehman Brothers: the scenario assumes an immediate change in spreads based on the changes that occurred one working day before the collapse of the investment bank until four weeks after this date.
- Flight into government bonds: The scenario simulates a significantly visible aversion to risk that was previously seen in the markets. Spreads for riskier classes of paper widen while spreads for safer government bonds narrow.
- Euro-crisis: The scenario is calculated using historically determined spread changes that took place between 1 October 2010 and 8 November 2011 to replicate the development of credit spreads.

Furthermore, additional stress tests/scenarios are calculated quarterly and distributed as a separate report. These reports include, in particular, inverse stress tests, a bank-wide macro-economic scenario and effects arising from adjusting the parameters in the model used to present premature repayments.

The following table presents the components of own funds requirements under the standardised approach for market risk. Only interest rate risk arising from trading book positions (only futures) is of relevance for MünchenerHyp. MünchenerHyp currently does not hold any such positions. Furthermore, foreign exchange risks due to open foreign exchange positions in the bank book may occur. The value of these positions on 31 December 2018 was below the statutory bagatelle limit.

TABLE 32: EU MR1 – MARKET RISK UNDER THE STANDARDISED APPROACH

		a	b
		RWA	Capital requirements
	Outright products		
1	Interest rate risk (general and specific)	–	–
2	Equity risk (general and specific)	–	–
3	Foreign exchange risk	–	–
4	Commodity risk	–	–
	Options	–	–
5	Simplified approach	–	–
6	Delta-plus method	–	–
7	Scenario approach	–	–
8	Securitisation (specific risk)	–	
9	**Total**	–	–

The Bank generally does not employ options for speculative purposes. Positions are usually entered into on an implied basis due to the debtors' option rights (e.g. the right to give legal notice of termination per Article 489 of the German Civil Code – BGB) and are then secured by hedging transactions. Nevertheless, these risks are attentively monitored in the daily risk report as they are extensive because of the Bank's large loan portfolio.

No significant risk items exist in foreign currencies. MünchenerHyp's transactions outside of Germany are hedged against currency risks to the greatest extent possible and only margins involved in payment of interest are unhedged. Commodity risks and other underlying risks do not exist.

In addition to equity, the stock risk for MünchenerHyp is only relevant within the scope of a special Union Investment fund, which can also invest in equities.

Due to the fact that MünchenerHyp is a trading book institution – only for futures – it uses a special application to control potential risks in this area on an intraday basis. Furthermore, these trades are also integrated into our normal reporting. The standard method is used to determine own funds requirements for market price risks in the trading book. The trading book, however, has contained no exposure to risk at any time for many years now.

6.3 Risk Management Structure and Organisation

MünchenerHyp uses a limit system to manage market risks. This limit system is based on the VaR. The limits established for market-risk management are based on the ability to bear risk and on the Bank's earning potential, and are defined as shrinking limits: a negative annual performance reduces the available limit by the same negative performance amount, whereas positive performance does not raise the limit.

The VaR limitation is based on the books defined by MünchenerHyp in the context of operational management. Limit monitoring is integrated into the process of daily performance and risk measurement. Risk drivers of foreign currency interest curves and option volatility can be integrated into the VaR.

Currently capital requirements solely exist for foreign exchange risks within the framework of market risk at MünchenerHyp.

6.4 Risk Mitigation and Hedging

We engage in hedging activities – interest rate and currency derivatives – in order to further reduce our risks and to hedge our business activities. We do not employ credit derivatives as a matter of principle. We only occasionally insure individual loans or portfolios against counterparty risk. Asset swaps are used as micro-hedges at the level of larger individual positions. Structured fundamental transactions, such as callable securities, are hedged accordingly with structured asset swaps. Interest-currency swaps are used to hedge exchange rate risks in transactions involving foreign currencies. Interest rate swaps are the primary hedging instruments used at the portfolio level. Bermudan options on interest swaps (swaptions), swaps and interest rate options (caps and floors) are used as macro-hedges for embedded legal termination rights or for agreements limiting interest rates.

6.5 Risk Reports and Management Information Systems

The market risk value-at-risk, as well as the market risk and credit spread stress tests, are determined and reported on every Munich banking day. The market risk limits are monitored every Munich banking day and reported within the context of the performance and risk calculation. The Market Risk Management unit is responsible for the preparation, coordination and distribution of the reports, which are distributed to the Treasury Department, the Head of Risk Control / Regulatory Affairs, the Board of Management, and the Supervisory Board (quarterly).

If a limit is exceeded a report is prepared pursuant to the escalation procedure and submitted by the Market Risk Management to the entire Board of Management as well as the Heads of Risk Control/Regulatory Affairs, Treasury, as well as the Audit unit.

7 Liquidity Risk

Among other disclosures, content points 3.2 and 7 above, present the statement of MünchenerHyp's Board of Management regarding the appropriateness of the liquidity risk management agreements, as well as the statement concerning liquidity risk.

7.1 Containment

Liquidity Risk includes the following risks:

- inability to fulfil payment obligations when they become due (liquidity risk in the narrow sense),
- inability to procure sufficient liquidity when needed at anticipated conditions (refinancing risk), or
- inability to terminate, extend or close out a transaction, or only be able to do so at a loss, due to insufficient market depth or market turbulence (market liquidity risk).

7.2 Regulatory Information (qualitative)

Disclosure guidelines for the liquidity coverage ratios require qualitative information on liquidity risk management to be disclosed in a table. In order to make the information more readable the comments are extensively presented in continuous text and not directly in the table. For this reason the tables contain references to the relevant chapters.

TABLE 33: TABLE ON QUALITATIVE / QUANTITATIVE INFORMATION OF LIQUIDITY RISK IN ACCORDANCE WITH ARTICLE 435 (1) OF REGULATION (EU) 575/2013

Description	Reference
Strategies and processes in the management of liquidity risk	7.3
Structure and organisation of the liquidity risk management function (authority, statute, other arrangements)	7.4
Scope and nature of liquidity risk reporting and measurement systems	7.6
Policies for hedging and mitigating the liquidity risk and strategies, and processes for monitoring the continuing effectiveness of hedges and mitigants	7.6
A declaration approved by the management body on the adequacy of liquidity risk management arrangements of the institution providing assurance that the liquidity risk management systems put in place are adequate with regard to the institution's profile and strategy	7
A concise liquidity risk statement approved by the management body succinctly describing the institution's overall liquidity risk profile associated with the business strategy. This statement shall include key ratios and figures (other than those already covered in Annex II of these guidelines) providing external stakeholders with a comprehensive view of the institution's management of liquidity risk, including how the liquidity risk profile of the institution interacts with the risk tolerance set by the management body	7

TABLE 34: TEMPLATE ON QUALITATIVE INFORMATION ON LCR, WHICH COMPLEMENTS THE LCR DISCLOSURE TEMPLATE

Description	Reference
Concentration of funding and liquidity sources	7.5.1
Derivative exposures and potential collateral calls	7.5.2
Currency mismatch in the LCR	7.5.3
A description of the degree of centralisation of liquidity management and interaction between the group's units	Not relevant
Other items in the LCR calculation that are not captured in the LCR disclosure template but that the institution considers relevant for its liquidity profile	Not relevant

7.3 Strategies and Processes

MünchenerHyp has classified liquidity risk as a significant risk requiring monitoring and management by means of regular, and appropriate stress testing for liquidity risk. In addition, an early warning forecasting system is also in place to identify potential problems by anticipating key figures for the coming week, as well as forecasting end-of-month figures for the next three months.

Stricter requirements for controlling liquidity risks have been in effect since the revision of the MaRisk in late 2010. The main reasons for this were:

- the partial failure of the interbank market as a refinancing source,
- the strong increase in spread premiums for refinancing, and
- the collapse of the secondary markets (e.g. for asset-backed securities).

With the coming into force of the CRR, the requirements of MaRisk were expanded by two additional regulatory ratios. The implementation of the CRR expanded the requirements of MaRisk by two additional regulatory ratios: The Liquidity Coverage Ratio (LCR) is designed to ensure that financial institutions have sufficient short-term liquidity to cover their obligations over a 30 day period. On the other hand, the Net Stable Funding Ratio (NSFR) is focused on structural liquidity.

In addition, financial institutions must employ a process to provide early warning of liquidity requirements to enable a financial gap to be recognised in a timely manner. This is intended to ensure that a refinancing can take place at all times.

MünchenerHyp has always taken liquidity risk into consideration in its business and risk strategies. In order to comply with all of the regulatory and internal requirements, MünchenerHyp distinguishes between operative liquidity disposition and short and mid-term liquidity risk management pursuant to MaRisk BTR 3.2 to ensure payment capability, and medium-term structural liquidity planning (MaRisk BTR 3.1), which is also the equivalent of the economic ILAAP. In addition, these requirements will be expanded to comply with regulatory LCR and NSFR, as well as the normative ILAAP requirements. In order to identify potential problems in a timely manner, the Bank forecasts its LCR figure for the coming week as well as the end-of-month figures for the next three months. Effective 1 January 2018, the Bank must maintain an LCR ratio of 100%. Currently there is regulatory requirement for the NSFR. However, a minimum value of 100% is anticipated. Both of these key figures for MünchenerHyp were consistently over 100% in 2018.

The goal of operative liquidity disposition is to ensure that the Bank can fulfil its proper payment obligations in full in a timely manner. The relevant strategies and processes for operational liquidity controls are presented in the Treasury Handbook.

A technical concept for short and mid-term liquidity risk management pursuant to MaRisk was developed to ensure payment capability, and was subsequently implemented in a separate system. The content primarily involves the technical process for preparing a capital maturity statement that can be used to evaluate the extent to which our own liquidity requirements are covered over time. Methods have been defined to generate corresponding additional funds if cash outflows exceeds cash inflows (including liquidity stocks), for example by selling assets; this is known as liquidity coverage potential. A range of diverse parameters are used to calculate various (stress) scenarios in order to comply with the scenario considerations required by MaRisk:

- Base case (control scenario)
- Bank stress
- Market stress
- Combined stress (MaRisk scenario)
- Combined stress without future funding measures
- Bank-wide macro-economic scenario (quarterly basis)

Over a longer observation period additional modelling assumptions, which are not decisive factors for managing short-term liquidity, are also taken into account. These are, for example, new business plans or current expenses such as salaries and taxes.

The following key liquidity figures are viewed as components for determining results across all due dates:

- Historic course of minimal overhang
- Point in time of theoretical insolvency
- Capital maturity statement
- Potential liquidity coverage as well as its composition
- Additional detailed data for planning and control activities

7.4 Risk Management Structure and Organisation

In order to keep refinancing risks as low as possible, MünchenerHyp strives to refinance loans with closely matching maturities and manages any deviations. The Bank continuously checks if its relevant refinancing sources (above all, those within the Cooperative Financial Network) remain available. In order to limit market liquidity risks in its business with public-sector borrowers and banks, MünchenerHyp primarily acquires securities that are acceptable as collateral by the European Central Bank, and which can be used for open market business at any time. Investments in less liquid bonds, like Mortgage Backed Securities (MBS), are no longer being made.

The limitation of liquidity risks takes place using short and mid-term term liquidity risk management pursuant to MaRisk. Because liquidity management for a Pfandbrief bank is closely linked to the cover requirements for Pfandbriefe, the results of the cover calculation are taken into account when calculating liquidity risk.

The objective of limiting liquidity risks is to secure short, medium and long-term liquidity, and to prevent structural liquidity gaps. Short and mid-term liquidity risks are limited using short and mid-term liquidity risk management pursuant to MaRisk and the LiqV figure.. In the context of liquidity risk management pursuant to MaRisk, a four-level limit is defined in accordance with the stress scenarios required by MaRisk. The limit consists of green, yellow, orange and red zones that define the respective time periods up to the (theoretical) inability to fulfil payment obligations.

In addition, an escalation process exists and is activated if a limit is exceeded or in the event of poor market liquidity (based on early warning indicators). When a limit is exceeded, the causes are first clarified. Next, a plan is prepared for the funding mix to cover the increased liquidity needs. The exceeded limit and the corresponding solution are communicated to the respective Board of Management members responsible for the affected areas, and to the heads of the Risk Control/Regulation, Treasury, and Internal Audit departments.

7.5 Qualitative Information Related to LCR

The Bank previously viewed highly liquid securities in the Pfandbrief cover pool, which were not needed for complying with legally mandated surplus cover requirements, as directly qualifying for the LCR because these securities could be booked out of the cover pool within a day and were then available for the entire 30 day period. This practice was altered in July 2018 due to an ECB interpretation concerning the subject of "Asset Encumbrance".

Now, when securities attributed to surplus cover are shifted to qualify for the LCR, they are actually booked out the cover pool. Naturally the value of the surplus cover of the cover pool is reduced by exactly this amount. As the confirmation by the cover pool trustee is required only after the shift has taken place, the derecognition as surplus cover can generally take place within a day.

1. Concentration of funding and liquidity source

As a capital market oriented Pfandbriefbank, MHB funding sources are heavily focused on Pfandbriefe. As stated in Chapter 7.6, the resulting risk is actively mitigated to the greatest extent possible within the context of the available possibilities.

2. Derivative positions and potential collateral requirements

MünchenerHyp employs derivatives solely as hedges against interest rate risks in its lending and funding business. Potential collateral requirements are taken into account in accordance with regulatory requirements using the historical look back approach.

3. Currency mismatches in the LCR

Almost all of the highly liquid assets used to cover short-term liquidity requirements in the LCR are denominated in euros. This is, however, viewed as sufficient as a relevant liquidity risk only exists in CHF, which is significantly smaller in comparison to EUR positions. This means that the necessary conversion from EUR into CHF can take place at any time via derivative transactions. The reason behind the liquidity gap in CHF is the fact that the major portion of funding for the CHF business takes place in euros. Greater focus was placed on directly obtaining refinancing in CHF last year. As a result, the volume of long-term issues denominated in CHF rose from CHF 1,174 million to CHF 2,015 million.

Beyond this, currency mismatches are an element in regular reports.

7.6 Risk Mitigation and Hedging

MünchenerHyp strives to make its funding as diversified as possible at all times by placing a mix of Pfandbriefe, uncovered long-term bank titles and various money-market instruments on the market. At the same time, we try to obtain refinancing with matching maturities in order to limit the respective funding gaps.

The Treasury department has an emergency plan that will be implemented during times of reduced liquidity.

7.7 Risk Reports and Management Information Systems

Liquidity risk reports for liquidity risk management pursuant to MaRisk and the LCR, as well as the related forecasts, are prepared and reported on a weekly basis, and can also be prepared on a daily basis if needed. Liquidity Risk Controlling is responsible for preparing, coordinating, monitoring and distribution of the reports. The Treasury Department is responsible for daily management of operational liquidity and the related necessary evaluations. The liquidity risk reports are distributed to:

- The Supervisory Board (short-term and structural liquidity risks, as well as LCR/NSFR on a quarterly basis)
- Board of Management (short-term and structural liquidity risks, and LCR on a weekly basis, as well as NSFR on a monthly basis)
- Head of Risk Control/Regulation (short-term and structural liquidity risks, as well as LCR/NSFR, weekly and ad hoc)
- Treasury department (short-term and structural liquidity risks, and LCR on a weekly basis and ad hoc)

In addition, LCR data are reported to the supervisory authorities on a monthly basis and NSFR data are reported to the supervisory authorities on a quarterly basis.

The liquidity risk limit is monitored at least on a weekly basis and reported within the respective liquidity risk reports. Liquidity Risk Controlling is responsible for monitoring the liquidity risk limit. The utilisation of the liquidity risk limit is reported to the following recipients:

- The Supervisory Board (quarterly)
- Board of Management (weekly)
- Head of Risk Control/Regulation, (weekly)
- Treasury department (weekly)

8 Operational Risks

8.1 Containment

Operational risks refers to possible losses caused by personal misconduct, weaknesses in procedural or project management, technical failure or negative outside influences. Personal misconduct also includes unlawful actions, improper sales practices, unauthorised actions and transaction errors. Accordingly, legal risks are included under operational risks.

8.2 Strategies and Processes

MünchenerHyp minimises its operational risks by qualifying its employees, by using transparent procedures, automating standard procedures, and by having fixed working instructions, comprehensive functional testing, as well as appropriate emergency plans and preventive measures.

MünchenerHyp has established a programme to manage its operational risks. This programme is documented in the Operational Risk Handbook and is based on three pillars:

- Periodic self-assessment for the purpose of determining, evaluating, and examination of all potential risks
- Operation of a complete loss database (including so-called "near misses")
- Establishment of an early warning system with the help of risk indicators

MünchenerHyp uses a self-assessment method as an ex-ante procedure to record and evaluate potential operational risks within the Bank. The risk officer in each unit estimates the frequency of occurrence and evaluates the possible damages in terms of their financial dimensions. In this procedure, the classification of operational risks (loss events) is based on legal recommendations and represents minimum content for the annually conducted self-assessment. The result is taken into consideration when assessing risk-bearing capacity.

In addition, for supervisory purposes, the basic indicator approach is used to determine operational risk.

8.3 Risk Management Structure and Organisation

It is mandatory to use a standard form to document in detail operational risks that have materialised. The completed form must then be submitted to the Operational Risk Coordinator. This statement must also include potential countermeasures to prevent a recurrence. Important loss events must be immediately reported to the Board of Management.

8.4 Risk Mitigation and Hedging

MünchenerHyp has purchased appropriate insurance policies to cover certain kinds of operational risks. Examples of these policies are pecuniary damage liability insurance, and fidelity insurance including hacker coverage. The insurance coverage is regularly compared with the risks reported by the specialist departments as part of their self-assessment process.

8.5 Risk Reports and Management Information Systems

The Board of Management and the Supervisory Board are also informed on a quarterly basis about operational risks within the context of the MaRisk Report. A separate OpRisk report is prepared twice a year. This also includes an updated evaluation of risks based on the self-assessment that is prepared at least once a year. Pursuant to the terms of the MaRisk, additional potential operational risks noted during the year are reported in the comprehensive risk report. Important risks are addressed to the Board of Management immediately. The Risk Control department is responsible for preparing, coordinating and distributing the reports, which are regularly distributed to the Supervisory Board and the Board of Management.

9 Investment Risk

MünchenerHyp's investments are made primarily for strategic reasons. No sales took place in 2018. As the investments are kept in the banking book, an annual review is carried out to determine any permanent reduction in value. If such a reduction occurs, it is written off at current fair value. The investments carried in the MünchenerHyp's banking book are not investments in publicly traded companies nor are they investments in diversified portfolios. The book value was € 115.7 million as of the end of 31 December 2018. Fair values are not shown. The investments are permanently taken out of the Internal Ratings Based Approach (IRBA) and allocated to the credit risk standardised approach. MünchenerHyp's investments are not a significant risk driver with regard to counterparty risks.

10 Derivative Counterparty Risk Exposure and Netting Positions

A limit system is used to restrict default risks for all of the counterparties carried in the Treasury area of business. In doing so, limits on counterparties and issuers are made on a case-by-case basis and are approved by the entire Board of Management after a presentation to, and vote by, the Markets and the Transaction Management departments. The basis for setting limits is an analysis of credit quality based on internal and external rating evaluations. Only banks, other financial institutions, and insurance companies domiciled in OECD countries are accepted as counterparties for derivative deals. The risk-bearing capacity calculation encompasses the risks of counterparty default and the risk of a change in the credit rating arising from derivative transactions.

After netting, derivatives are offset against the counterparty limit using their market values plus add-on. The limit is monitored on a daily basis. In the event that the limit is exceeded the entire Board of Management is informed immediately. Furthermore, a monitoring list is provided to the entire Board of Management on a monthly basis. The creditworthiness of counterparties and the limits are examined at least once a year. In creating offset agreements (netting), MünchenerHyp orients itself according to standard market practices.

Within the framework of collateral agreements made to additionally secure net derivate positions, only cash deposits in euros are accepted as collateral. To a small extent, and depending on creditworthiness, some collateral agreements contain exempt amounts. These exempt amounts are not subject to being automatically adjusted in the event of changed credit ratings, so no liquidity risk arises because of additional funding obligations. In terms of internal risk management for the entire Bank, exposure for derivatives is taken into account using their market value plus add-on and taking netting agreements into account.

Market and counterparty risks are calculated separately at MünchenerHyp and then added conservatively, for example when determining risk-bearing abilities. Thus no diversification effects are recognised via correlations. MünchenerHyp uses the mark-to-market method to calculate the value of its positions for counterparty credit risk. Compensation effects from correlations are not taken into account in the calculations.

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Derivative Counterparty Risk Exposure and Netting Positions

Table 35 presents the own funds requirements for credit value adjustment as of 31 December 2018.

TABLE 35: EU CCR2 – CVA CAPITAL CHARGE

			a	b
			Exposure value	RWAs
			010	020
010	1	Total portfolios subject to the advanced method		
020	2	(i) SVaR component (including the 3× multiplier))		
030	3	(ii) SVaR component (including the 3× multiplier)		
040	4	All portfolios subject to the standardised method	285.1	311.6
050	EU4	Based on the original exposure method		
060	5	Total subject to the CVA capital charge	285.1	311.6

MünchenerHyp does not enter into any transactions involving CDS as either a seller or buyer.

The following two tables disclose MünchenerHyp's CCR exposures as well as all the important parameters needed to calculate the respective own funds requirements. Each of the itemised risk positions shown are derivatives in terms of Annex II of the CCR, or repo transactions.

The following table presents CCR exposures (IRB approach) by portfolio and PD scale. The only exposure class of relevance here is "Institutions".

TABLE 36 EU CCR3 – STANDARDISED APPROACH – CCR EXPOSURES BY REGULATORY PORTFOLIO AND RISK
IN € M

		Risk Weight																	
	Exposure Class	0%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	250%	370%	1,250%	Other	Deducted	Total	of which unrated
		010	020	030	040	050	060	070	080	090	100	110	120	130	140	150	160	170	180
010	Central governments or central banks	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
020	Regional governments or local authorities	1.3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1.3	–
030	Public sector entities	0.8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.8	–
040	Multilateral development banks	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
050	International organisations	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
060	Institutions	–	–	–	–	–	–	0.3	–	–	–	–	–	–	–	–	–	0.3	–
070	Corporates	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
080	Retail Business	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
090	Institutions and corporates with a short term credit assessment	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
100	Other items	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
110	**Total**	**2.1**	**–**	**–**	**–**	**–**	**–**	**0.3**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**2.4**	**–**

TABLE 37: EU CCR4 – IRB APPROACH – CCR EXPOSURES BY PORTFOLIO AND PD SCALE

		a	b	c	d	e	f	g
	PD Scale	EAD post CRM	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RWA density
		010	020	030	040	050	060	070
010	0.00 to <0.15	489.1	0.03	16	45.0	913	69.2	14.1 %
020	0.15 to <0.25	38.6	0.16	4	45.0	913	21.3	55.2 %
030	0.25 to <0.50	48.5	0.35	2	45.0	913	39.9	82.3 %
040	0.50 to <0.75	12.2	0.50	1	45.0	913	11.7	95.9 %
050	0.75 to <2.50	1.4	1.10	1	45.0	913	1.8	128.6 %
060	2.50 to <10.00							
070	10.00 to <100.00							
080	100.00 (Default)							
090	**Subtotal**	**589.8**	**0.08**	**24**	**45.0**	**913**	**144.0**	**24.4 %**

11 Asset Encumbrances

The purpose of the presented asset encumbrances is to ensure cross-institutional uniformity in information for lenders and providers of unsecured or subordinate refinancing, and to serve as an indicator for vulnerability to refinancing problems. Encumbrances are defined as follows: An asset is deemed encumbered if it has been pledged or submitted as collateral or as additional security in another form based on an agreement, which is the reason why the institution cannot freely dispose of the asset. Assets assigned as collateral, which are subject to restriction regarding the withdrawal of the asset value, such as assets whose disposal or replacement by another asset are subject to approvals, are deemed encumbered in terms of the guidelines for the disclosure of encumbered and unencumbered assets dated 27 June 2014.

The asset encumbrance ratio (AE ratio) is calculated as the ratio from the encumbered assets and the sum of the institution's assets.

FORMULA 1: CALCULATION OF AE RATIO

$$\text{AE Ratio} = \frac{\text{encumbered assets}}{\text{encumbered and unencumbered assets}}$$

11.1 Strategies and Processes

As a safety-oriented Pfandbrief issuer, a significant portion of MünchenerHyp's business strategy is focused on adding as many high-quality assets to its portfolio as possible, which are eligible to serve as cover and can thus be used to underpin its own Pfandbrief issues. This leads to a high AE ratio, and is in keeping with the Bank's business strategy. In addition to encumbrances from the cover ratio between assets and Pfandbriefe, the following other significant sources of encumbrances are also noted in this context:

- Collateralisation of repurchase agreements
- Collateralisation of derivative transactions
- Collateralisation of open market transactions

11.2 Structure and Composition of the Encumbrance Ratio

Based on its business model, MünchenerHyp's AE ratio remained very constant between the disclosure dates at the end of 2017 and the end of 2018 and varied between 78.2 and 82.1%. In accordance with Commission Delegated Regulation (EU) 2017/2295, the amounts are shown as median values. These median values consist of the rolling end-of-quarter amounts for the previous twelve months and are determined by interpolation. The values shown in the following Tables 37, 38 and 39 are stated as on this reporting date.

The level of the encumbrance ratio, in particular, highlights MünchenerHyp's unequivocal focus on safety compared to other business models as the Bank strives to minimise the volume of assets it takes in that cannot serve as cover for Pfandbriefe.

The following table shows the amount of encumbered and unencumbered assets by asset category in terms of the applicable financial reporting framework, in accordance with Template A of Commission Delegated Regulation (EU) 2017/2295. Encumbered assets in Table 38 are on-balance sheet assets that have either been pledged or transferred without being derecognised, or are encumbered in another manner, as well as collateral received that complies with requirements for recognition on the balance sheet of the assignment recipient in terms of the applicable financial reporting framework.

Pursuant to the individual COREP report, MünchenerHyp made entries in columns 030, 050, 080 and 100 in Table 38 disclosing asset values which are eligible for business dealings with the relevant central bank.

TABLE 38: TEMPLATE A – ENCUMBERED AND UNENCUMBERED ASSETS

		Carrying amount of encumbered assets		Fair value of encumbered assets		Carrying amount of unencumbered assets		Fair value of unencumbered assets	
			of which notionally eligible EHQLA or HQLA		of which notionally eligible EHQLA or HQLA		of which: EHQLA and HQLA		of which: EHQLA and HQLA
		010	030	040	050	060	080	090	100
010	**Assets of the reporting institution**	**31,801.7**	**1,964.3**			**7,819.7**	**1,105.8**		
030	Equity instruments					104.6		104.6	
040	Debt securities	2,113.3	1,964.3	2,175.2	2,013.8	1,281.5	1,105.8	1,353.0	1,175.7
050	of which: covered bonds	1,096.4	1,096.4	1,107.1	1,107.1	444.5	444.5	463.4	463.4
060	of which: asset-backed securities								
070	of which: issued by general governments	1,105.7	1,007.6	1,180.3	1,073.5	313.6	313.6	347.7	347.7
080	of which: issued by financial corporations	1,297.1	1,247.1	1,301.5	1,253.9	747.4	570.3	783.9	604.4
090	of which: issued by non-financial corporations	17.3	15.0	17.3	15.0	10.0	10.0	10.0	10.0
120	Other assets	28,796.2				5,783.1			

Collateral received is shown below by asset category in accordance with Template B of Commission Delegated Regulation (EU) 2017/2295. Encumbered and unencumbered collateral in Template B refers to collateral received that does not meet the requirements for recognition on the balance sheet of the assignment recipient in terms of the applicable financial reporting framework, and is therefore not shown on the balance sheet. Collateral received that is shown on the balance sheet is disclosed in Template A. MünchenerHyp does not take in such collateral.

TABLE 39: TEMPLATE B – COLLATERAL RECEIVED

		Fair value of encumbered collateral received or own debt securities issued		Fair value of collateral received or own debt securities issued available for encumbrance	
			of which notionally eligible EHQLA and HQLA		of which EHQLA and HQLA
		010	030	040	060
130	Collateral received by the reporting institution	–	–	–	–
140	Loans on demand	–	–	–	–
150	Equity instruments	–	–	–	–
160	Debt securities	–	–	–	–
170	of which: covered bonds	–	–	–	–
180	of which: asset-backed securities	–	–	–	–
190	of which: issued by general governments	–	–	–	–
200	of which: issued by financial corporations	–	–	–	–
210	of which: issued by financial corporations	–	–	–	–
220	Loans and advances other than loans on demand	–	–	–	–
230	Other collateral received	–	–	–	–
231	of which: ...	–	–	–	–
240	Own debt securities issued other than own covered bonds or asset-backed securities	–	–	–	–
241	Own covered bonds and asset-backed securities issued and not yet pledged	–	–	–	–
250	**Total assets, collateral received and own debt securities issued**	**31.801,7**	**–**	**–**	**–**

Liabilities associated with encumbered assets and collateral received are disclosed in accordance with Template C of the of Commission Delegated Regulation (EU) 2017/2295. The surplus of encumbered assets shown in Table 40 primarily stems, in particular, from surplus cover held for Pfandbriefe in circulation.

TABLE 40: TEMPLATE C – SOURCES OF ENCUMBRANCE

		Matching liabilities, contingent liabilities or securities lent	Assets, collateral received and own debt securities issued other than covered bonds and ABSs encumbered
		010	030
010	Carrying amount of selected financial liabilities	29,622.3	31,758.0
020	Derivatives	1,556.4	1,543.0
030	of which: Over-The-Counter	1,556.4	1,543.0
040	Deposits	1,376.5	1,496.0
050	Repurchase agreements		
060	of which: central banks		
070	Collateralised deposits other than repurchase agreements	1,376.5	1,496.0
080	of which: central banks	992.9	1,111.7
090	Debt securities issued	26,719.3	28,776.5
100	of which: Pfandbriefe	26,719.3	28,776.5
110	of which: **asset-backed securities**		
120	**Other sources of encumbrance**	**42.1**	**42.1**
130	Nominal of loan commitments received		
140	Nominal of financial guarantees received		
150	Fair value of securities borrowed with non cash-collateral		
160	Other	42.1	42.1
170	**Total source of encumbrance**	**29,664.4**	**31,801.7**

12 Remuneration Policy

12.1 Risk Taker Analysis

Pursuant to Article 16 of the Remuneration Regulation for Institutions, MünchenerHyp must disclose information on its remuneration policy and practices. Disclosure requirements for MünchenerHyp as a CRR institution are governed by Article 450 CRR.

Pursuant to this article, the Bank must disclose certain quantitative and qualitative information for employees (risk takers) whose activities have a substantial impact on the Bank's risk profile.

During the year 2018, the Bank identified twelve Supervisory Board members, three Board of Management members, 17 senior executives as well as 45 additional employees as risk takers pursuant to the Remuneration Regulation for Institutions; A total of 77 persons which corresponds to approximately 13.9% of all employees. The risk takers were determined on the basis of the "Delegated Regulation (EU) No. 604/2014 of the Commission dated 4 March 2014 to supplement the Directive 2013/36/EU of the European Parliament and the Council with regard to the technical regulation standards related to qualitative and suitable quantitative criteria for determining the employee categories whose work activities have a substantial impact on the risk profile of an institution".

12.2 Remuneration Across the Institution

The Remuneration Committee met seven times in 2018.

The Bank did not pay any new-hire bonuses or severance pay in 2018.

12.3 Remuneration system for the board of management

Up until and including 2018 the following applied: members of the Board of Management received a maximum bonus of 30% of the amount of their individual total remuneration. The variable remuneration for the Board of Management was based on a maximum achievable bonus.

Starting in 2019 a target value for the discretionary bonuses will be set in advance for every year. The definitive discretionary bonus can vary between 0% and 133% of the target value.

To calculate the bonus, quantitative and qualitative targets in the form of bank and individual targets are derived from the corporate strategy. Up until 2018 the maximum bonus was set based on full achievement of the respective targets. As of 2019 bonuses will only be paid if these targets are exceeded. The assessment period used will be at least three years.

Variable remuneration is paid out as follows:

- A sum of 50% of the achieved bonus is paid out over several years in cash, while the remaining 50% is invested in "other instruments" in terms of Article 52 or 63 CRR, which are linked to sustainable enterprise value, and consequently their value may fluctuate. These instruments are created specifically for the purpose of complying with the requirements of the Remuneration Regulation for Institutions, because MünchenerHyp is a cooperative and cannot implement the actual intention of a stock option.
- 20% of the achieved bonus is paid out directly in the following year following the approval of the annual financial statements and adoption by the Supervisory Board.
- The remaining 80% of the bonus defined for the preceding business year is paid out over a period of four (as of 2019, five) years, whereby components invested in instruments are also subject to a one year restriction lock-up period following the applicable waiting periods for the respective instruments.

Negative contributions to the Bank's success are taken into account at the time the bonus is calculated, and also during the entire waiting period. This may lead to a reduction or, in an extreme case, the complete loss of variable remuneration. Furthermore, a so-called "claw-back" rule for previously paid amounts has existed since 2018. The amount of the bonus cannot be increased over and beyond the originally defined amount; similarly, no write-ups are applied with regard to reduced payments that were made during the interim period. There is no legal claim to variable remuneration during the waiting and lock-up periods.

A member of the Board of Management is entitled to receive severance pay as stated in the member's employment contract if the Bank does not wish to extend the employment of the member.

The Supervisory Board is responsible for defining the remuneration systems for the members of the Board of Management. The appropriateness of the remuneration systems will be assured, in particular, by the Supervisory Board's Remuneration Committee.

12.4 Remuneration System for Risk Takers Below the Board of Management

The remuneration structure for Risk Takers below the Board of Management is determined by a contractually defined performance- and profit-oriented remuneration portion (target premium) in addition to the fixed salary.

An actively practiced target agreement process forms the basis for a transparent and understandable performance assessment and hence also for the definition of the individual performance factors. Managers and employees jointly agree on numerous individual targets towards the end of the year.

The target agreements should contain objectives from each of the following three categories:

- Operational profit and business targets
- Organisational and strategic objectives, and projects
- Personal development and management targets

The calculation of the performance bonus takes into account individual performance, as well as the performance of the Bank and the employee's own department. Amounts are determined based on the following factors:

	Individual factor	Department factor	Bank factor
Values	0.0–2.0	0.9–1.0	0.8–1.2
Determined by	Annual assessment interview with supervisor	Determined by Board of Management	Determined by Board of Management

The considerable range of the individual factor means that the employee plays a key role in determining the amount of the performance bonus, and may lose the entire bonus in case of misconduct, for example.

Once the target premium has been defined, the individual performance factor is calculated one year later during the assessment interview on the basis of target attainment. The departmental and bank factors are also determined by the Board of Management at the beginning of the following year.

The following formula is used to calculate the performance bonus:

FORMULA 2: CALCULATION OF THE PERFORMANCE BONUS

Performance bonus = target premium x individual factor x department factor x bank factor

The bonus is paid out pursuant to the terms of the Remuneration Regulation for Institutions, and is also liable to being blocked by BaFin in the future. If a risk taker (below the level of the Board of Management) receives more than € 50,000 in variable remuneration (currently the valid threshold pursuant to the BaFin's guidance), that person's bonus will be paid out over many subsequent years analogous to remuneration for the Board of Management. To date this has not been necessary.

Due to restrictions in the remuneration system, variable remuneration can never exceed the fixed remuneration component. With regard to other non-cash benefits, risk takers receive the same as those received by other employees, such as subsidies for lunch or health care, supplemental insurance, or company cars, etc. In this context, each benefit in kind depends partly on the hierarchy level or duration of employment, although the criteria are identical for all employees.

The Board of Management is responsible for defining the remuneration system. Changes to the business strategy will result in reviews to determine if these changes require the remuneration system to be adjusted.

The appropriateness of the remuneration systems is monitored by the Supervisory Board's Remuneration Committee in collaboration with the Remuneration Officer.

TABLE 41: OVERVIEW OF REMUNERATION ACROSS THE INSTITUTION

	Market	Transaction Management	Staff Units	Board of Management	Total
Total remuneration (in € m)	1.23	4.81	1.87	3.05	10.97
Fixed remuneration*	1.03	4.29	1.61	2.48	9.41
Variable remuneration	0.20	0.52	0.26	0.58	1.56
Variable remuneration (in € m)					
of which paid out	0.20	0.52	0.26	0.23	1.21
of which withheld	–	–	–	0.35	0.35
of which in cash	–	–	–	0.17	0.17
of which in other instruments	–	–	–	0.17	0.17
Withheld remuneration from previous years (in € m)					
Paid out	–	–	–	0.20	0.20
Approved	–	–	–	0.20	0.20
Reduced	–	–	–	0.00	0.00
Total outstanding	–	–	–	0.96	0.96
of which vested	–	–	–	0.15	0.15
of which unvested	–	–	–	0.80	0.80
Number of individuals affected*	5	45	12	3	65
Number of new hire premiums	0	0	0	0	0
Number of severances	0	0	0	0	0
Persons with remuneration exceeding € 1 m	0	0	0	2	2

* Salaries for two risk takers, who were hired during the financial year, are shown on an annualised basis.

13 Leverage

13.1 Containment and Structure

Pursuant to Article 429 CRR institutions have to calculate a leverage ratio to increase transparency and comparability. The leverage ratio is calculated as the capital measure divided by the total exposure measure and is expressed as a percentage.

The leverage ratio is defined as follows:

FORMULA 3: CALCULATION OF THE LEVERAGE RATIO

$$\text{Leverage ratio} = \frac{\text{Tier 1 Capital}}{\text{Total Exposure Measure}}$$

For the purposes of Article 429 CRR, the capital measure shall be Tier 1 capital. The total exposure measure consists of amounts shown as on-balance sheet assets, derivatives, securities financing transactions and off-balance sheet assets. The total exposure measure for assets (excluding derivatives and securities financing transactions) contains the balance sheet value of the individual positions, as well as regulatory adjustments for positions which are deducted to determine regulatory Tier 1 capital. Derivatives are calculated using the total exposure measure of the leverage ratio based on the mark-to-market method for derivatives. The portfolio does not contain any credit derivatives. The total exposure measure for securities financing transactions is equal to the gross balance sheet values plus the assessment basis used for counterparty credit risk. The total exposure measure for off-balance sheet exposures is calculated while taking into consideration the conversion factors from the standardised approach for credit risk.

The following detailed information regarding the leverage ratio is hereby disclosed pursuant to the Implementing Regulation (EU) 2016/200 of the EU Commission dated 15 February 2016 laying down implementing technical standards with regard to the disclosure of the leverage ratio according to the terms of the CRR.

13.2 Quantification

As at 31 December 2018, MünchenerHyp's leverage ratio was 3.43%. The reason for the difficulty in complying with a leverage ratio of at least 3% is that the leverage ratio does not take any risk weighting into consideration. As a result the leverage ratio represents a special challenge for MünchenerHyp as its business model – financing property – focuses on the particularly low-risk retail area of business.

Changes in the observed ratio are continuously monitored and analysed.

In accordance with its business model the Bank manages the required amount of own funds using the risk-weighted capital ratios as defined by the supervisory authorities and the risk-bearing capacities that must be observed.

The Table LRSum presents the detailed reconciliation of MünchenerHyp's on-balance sheet assets as publicly published and exposures for the leverage ratio. The total exposure measure in the leverage ratio is presented in Table LRCom. MünchenerHyp's on-balance sheets exposures are presented in detail in Table LRSql, in order to present the key components of the leverage ratio as well as the on-balance sheet exposures. Furthermore, Table LRQua describes the procedures used by MünchenerHyp to monitor the risk of excessive indebtedness, as well as factors that influenced the leverage ratio during the reporting period to which the disclosed leverage ratio refers to.

13.3 Quantitative and Qualitative Disclosure of the Leverage Ratio as Shown in the Disclosure Tables

The following table presents the reconciliation of MünchenerHyp's on-balance sheet assets and exposures for the leverage ratio as at the 31 December 2018 date of record for the purposes of Article 451 para. 1 (b) CRR.

TABLE 42: SUMMARY RECONCILIATION OF ACCOUNTING ASSETS AND LEVERAGE RATIO EXPOSURES

Table LRSum: Summary reconciliation of accounting assets and leverage ratio exposures

		Applicable Amounts
1	Total assets as per published financial statements (excluding own holdings)	40,391.2
2	Adjustment for entities which are consolidated for accounting purposes but are outside the scope of regulatory consolidation	–
3	(Adjustment for fiduciary assets recognised on the balance sheet pursuant to the applicable accounting framework but excluded from the leverage ratio exposure measure according to Article 429 (13) CRR)	–
4	Adjustments for derivative financial instruments	514.6
5	Adjustment for securities financing transactions (SFTs)	–
6	Adjustment for off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)	2,050.5
EU-6a	(Adjustment for intragroup exposures excluded from the leverage ratio total exposure measure in according to Article 429 (7) of Regulation (EU) No. 575/2013)	–
EU-6b	(Adjustment for exposure excluded in the leverage ratio exposure according to Article 429 (14) of Regulation (EU) No. 575/2013)	–
7	Other adjustments	–3,015.9
8	**Leverage ratio total exposure measure**	**39,940.4**

The following table presents the split of the leverage ratio total exposure measure of MünchenerHyp as at the 31 December 2018 date of reference per Article 451 (1) (b) CRR.

TABLE 43: LRCOM – SPLIT OF TOTAL EXPOSURE MEASURE

	Official numbering of rows persuant to Commission Implementing Regulation (EU) 2016/200		CRR leverage ratio exposures
		On-balance sheet exposures (excluding derivatives and SFT)	
10	1,0	On-balance sheet items (excluding derivatives and SFTs, but including collateral)	38,833.2
20	2,0	Asset amounts deducted in determining Tier 1 capital	–3.7
30	3,0	Total on-balance sheet exposures (excluding derivatives and SFTs) and fiduciary assets (sum of lines 1 and 2)	38,829.5
		Derivative exposures	
40	4,0	Replacement cost associated with all derivatives transactions (i.e. except eligible margin deposits received in cash)	46.7
50	5,0	Add-on amount for potential future exposure associated with derivatives transactions (mark-to-market method)	467.9
51	EU-5a	Exposure determined under Original Exposure Method	
60	6,0	Gross-up for derivatives collateral provided where deducted from the balance sheet assets pursuant to the applicable accounting framework	
70	7,0	(Deductions of receivables assets for cash variation margin provided in derivatives transactions)	–1,454.1
80	8,0	(Exempted CCP leg of client-cleared trade exposures)	
90	9,0	Adjusted effective notional amount of written credit derivatives	
100	10,0	(Adjusted effective notional offsets and add-on deductions for written credit derivatives)	
110	11,0	Total derivatives exposures (sum of lines 4 to 10)	–939.5
		Securities financing transactions (SFTs) exposure	
120	12,0	Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	
130	13,0	(Netted amounts of cash payables and cash receivables of gross SFT assets)	
140	14,0	Counterparty credit risk exposure for SFT assets	
141	EU-14a	Derogation for SFTs: Counterparty credit risk exposure in accordance with Articles 429b (4) and 222 of Regulation (EU) No. 575/2013	
150	15,0	Agent transaction exposures	
151	EU-15a	(Exempted CCP leg of client-cleared SFT exposure)	
160	16,0	Total SFT exposures (sum of lines 12 to 15a)	
		Other off-balance sheet exposures	
170	17,0	Off-balance sheet exposures at gross notional amount	4,191.5
180	18,0	(Adjustments for conversion to credit equivalent amounts)	–2,141.0
190	19,0	Other off-balance sheet exposures (sum of lines 17 and 18)	2,050.5
		Exempted exposures in accordance with Article 429 (7) and (14) of Regulation (EU) No. 575/2013 (on and off-balance sheet)	
191	EU-19a	(Intragroup exposures (solo basis) exempted in accordance with Article 429 (7) of Regulation (EU) No. 575/2013 (on and off balance sheet))	
192	EU-19b	(Exposures exempted in accordance with Article 429 (14) of Regulation (EU) No. 575/2013 (on and off balance sheet))	
		Equity capital and total exposure measure	
200	20,0	Tier 1 capital	1,369.7
210	21,0	Leverage ratio total exposure measure (sum of lines 3, 11, 16, 19, EU-19a and EU-19b)	39,940.4
		Leverage ratio	
220	22	Leverage ratio	3.43
		Choice on transitional arrangements and amount of derecognised fiduciary items	
230	EU-23	Choice on transitional arrangements for the definition of the capital measure	Transitional provision
240	EU-24	Amount of derecognised fiduciary items in accordance with Article 429 (11) of Regulation (EU) No. 575/2013	

The following Table LRSpl presents the split-up of on-balance sheet exposures (excluding derivatives, SFTs and exempted exposures) of MünchenerHyp as at the 31 December 2018 date of reference in accordance with Article 451 (1) (b) b CRR.

TABLE 44: LRSPL – SPLIT-UP OF ON-BALANCE SHEET EXPOSURES

Official numbering of rows persuant to EBA/ITS/ 2014/04/rev1		CRR leverage ratio exposures
EU-1	Total on-balance sheet exposures (excluding derivatives and SFTs and excluded exposures), of which	37,379.1
EU-2	Trading book exposures	
EU-3	Banking book exposures, of which:	37,379.1
EU-4	Covered bonds	539.0
EU-5	Exposures treated as sovereigns	4,145.0
EU-6	Exposures to regional governments, MDB, international organisations and PSE not treated as sovereigns	30.9
EU-7	Institutions	218.3
EU-8	Secured by mortgages of immovable properties	29,985.8
EU-9	Retail exposures	2.3
EU-10	Corporate	1,854.0
EU-11	Exposures in default	70.5
EU-12	Other exposures (e.g. equity, securitisations, and other non-credit obligations assets)	533.3

The following Table 45 presents the procedures used by MünchenerHyp to include the leverage ratio in its internal measurement and management processes, as well as the methods used to monitor the risk of excessive indebtedness.

TABLE 45: LRQUA – DISCLOSURE OF QUALITATIVE ITEMS

		Table LRQua: Free format text boxes for disclosure on qualitative items
1	Description of the processes used to manage the risk of excessive leverage	The Bank monitors the risk of excessive indebtedness by quantifying the leverage ratio and reporting it to the Board of Management on every reporting reference date – and as required. The business divisions have been made fully aware of the need to consider the effects a potential new business activity may have on the leverage ratio. Along with the leverage ratio, MünchenerHyp employs additional key figures to evaluate the risk of excessive indebtedness, as the leverage ratio does not take into consideration the key risk driver of maturity matched refinancing and the actual exposure of the assets. The factors influencing the leverage ratio are thoroughly analysed and reciprocal dependencies with MünchenerHyp's main controlling ratios, like the LCR as well as the equity capital ratio are evaluated, and – if needed – lead to a review of measures that should be taken. Mismatched maturities arising from the short-term refinancing of lending operations represent a major cause of excessive indebtedness. As a Pfandbrief bank, MünchenerHyp's business model is explicitly aware of this risk and monitors it closely. MünchenerHyp has set itself a leverage ratio exceeding 3% as an internal minimum requirement. In order to meet this ratio in 2018 MünchenerHyp further increased its common equity Tier 1 capital in the form of paid-up capital. The leverage ratio is taken in consideration over a five-year planning horizon within the capital planning process used for regulatory own funds and the risk-weighted capital ratios in order to take appropriate measures at an early time when planning Tier 1 capital as well as the components of the total exposure measure.
2	Description of the factors that had an impact on the individually disclosed leverage ratios during the reporting period	On 31 December 2018, MünchenerHyp's leverage ratio per the terms of the CRR, and in connection with the Delegated Resolution 2015/62, was 3.43%. The leverage ratio was calculated using Tier 1 capital of € 1,369.7 million divided by a Total Exposure Measure of € 39,940.4 million. In comparison, the leverage ratio on the 30 June 2018 date of reference was 3.43%, and also 3.43% on the 31 December 2017 date of record. This means that the Leverage Ratio remained almost unchanged during the relevant period.

Annex – Management Bodies

Supervisory Board

Wolfhard Binder » Grafing
Chairman of the Board of Management
Raiffeisen-Volksbank Ebersberg eG (to 31.12.2018)
Chairman of the Supervisory Board
Number of mandates: 2

Dr. Hermann Starnecker » Marktoberdorf
Spokesman of the Board of Management
VR Bank Kaufbeuren-Ostallgäu eG
Deputy Chairman of the Supervisory Board
Number of mandates: 2

Josef Hodrus » Leutkirch im Allgäu
Spokesman of the Board of Management
Volksbank Allgäu-Oberschwaben eG
Number of mandates: 2

Jürgen Hölscher » Lingen
Member of the Board of Management
Volksbank Lingen eG
Number of mandates: 2

Rainer Jenniches » Bonn
Chairman of the Board of Management
VR-Bank Bonn eG
Number of mandates: 3

Dr. Peter Ramsauer » Traunwalchen
Master Craftsman (Miller)
Number of mandates: 4

Gregor Scheller » Forchheim
Chairman of the Board of Management
Volksbank Forchheim eG
Number of mandates: 2

Kai Schubert » Trittau
Member of the Board of Management
Raiffeisenbank Südstormarn Mölln eG
Number of mandates: 3

Barbara von Grafenstein » Munich
Employee representative

Reimund Käsbauer » Munich
Employee representative

Michael Schäffler » Munich
Employee representative

Frank Wolf-Kunz » Munich
Employee representative

Board of Management

Dr. Louis Hagen
Chairman

Dr. Holger Horn

Michael Jung

Mandates
Dr. Louis Hagen
Member of the Board of the Supervisory Directors KfW

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List of Abbreviations

AE ratio	» Asset Encumbrance Ratio
AfS	» Available for Sale
AT1	» Additional Tier 1 capital
BaFin	» German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht)
BPV	» Basis Point Value
BVR	» Federal Association of German Volksbanken and Raiffeisenbanken (Bundesverband der Deutschen Volksbanken und Raiffeisenbanken)
BWGV	» Association of Baden-Wuerttemberg Cooperatives (Baden-Württembergischer Genossenschaftsverband e. V.)
CCB	» Countercyclical Capital Buffer
CCF	» Credit Conversion Factor
CD	» Certificate of Deposit
CDS	» Credit Default Swaps
CET1	» Common equity Tier 1 capital
CP	» Commercial Paper
CRD IV	» Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 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 (CRDIV)
CRM	» Credit Risk Mitigation (techniques)
CRR	» Regulation (EU) No. 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No. 648/2012
CUSIP	» Committee on Uniform Security Identification Procedures
CVA	» Credit Valuation Adjustment
CVaR	» Credit Value at Risk
EAD	» Exposure at Default
EBA	» European Banking Authority
ECAI	» External Credit Assessment Institutions
ECB	» European Central Bank
EDP	» Electronic Data Processing
EEA	» European Economic Area (EEA)
EL	» Expected Loss
etc.	» et cetera
FX-risks	» Foreign Exchange Risks
GVB	» Association of Bavarian Cooperatives (Genossenschaftsverband Bayern e. V.)
ICAAP	» Internal Capital Adequacy Assessment Process
ILAAP	» Internal Liquidity Adequacy Assessment Process
InstitutsVergV	» German regulation on the supervisory requirements for compensation systems of banks; Remuneration Regulation for Institutions (Institutsvergütungsverordnung)
IPRE	» Income Producing Real Estate
IRBA	» Internal Ratings Based Approach
ISIN	» International Securities Identification Number
IT	» Information Technology
ITS	» Implementing Technical Standards
KSA	» Standard Approach to Credit Risk (Kreditrisikostandardansatz)
KWG	» German Banking Act (Kreditwesengesetz)
LDP	» Liquidity Coverage Potential (Liquiditätsdeckungspotenzial)
LGD	» Loss Given Default
LRG	» Local and Regional Governments
MaRisk	» Minimum Requirements for Risk Management (Mindestanforderungen an das Risikomanagement)
MBS	» Mortgage Backed Securities
MDB	» Multilateral Development Bank
MünchenerHyp	» Münchener Hypothekenbank eG
N/A	» Not applicable
NSFR	» Net Stable Funding Ratio
OpRisk	» Operational Risk
PD	» Probability of Default
PPU	» Permanent Partial Use
PU	» Partial Use
QIS	» Quantitative Impact Study
RTS	» Regulatory Technical Standards
RWA	» Risk-Weighted Assets
RWGV	» Association of Rhineland-Westphalia Cooperatives (Rheinisch-Westfälischer Genossenschaftsverband e. V.)
SME	» Small and Medium-Sized Enterprises
SolvV	» German Solvency Regulation (Solvabilitätsverordnung)
SRB	» Single Resolution Board
SREP	» Supervisory Review and Evaluation Process
T1	» Tier 1 capital (T1 = CET1 + AT1)
T2	» Tier 2 capital (Supplementary capital)
TC	» Total Liable Equity capital (TC = T1 + T2)
UL	» Unexpected Loss
VaR	» Value at Risk
vdp	» Association of German Pfandbrief Banks (Verband deutscher Pfandbriefbanken)
VR	» Volksbanken Raiffeisenbanken

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Editor

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