

### 3 THE FINANCIAL SECTOR

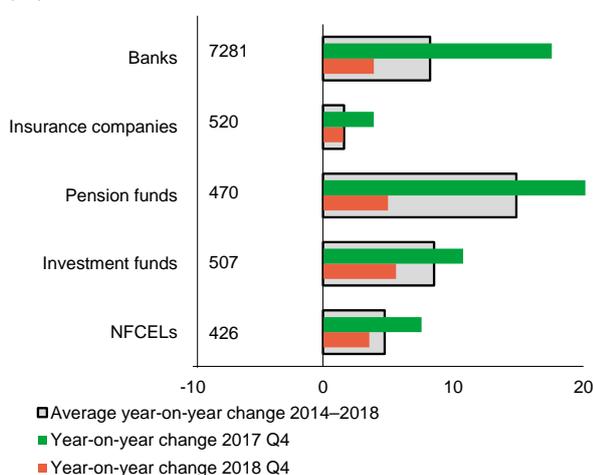
The domestic financial sector showed favourable trends in 2018 and expanded in all segments. The banking sector strengthened its capitalisation and profitability and has high liquidity. Insurance companies maintained their capitalisation and profitability in a situation where financial market developments adversely affected their assets and liabilities. Pension management companies and investment funds were hit by changes in the prices of some of their assets at the end of 2018. However, this did not lead to an exodus of investors or to systemically important losses.

The favourable economic trends are naturally giving rise to vulnerability risks in the event of a change in the business and financial cycle. Banks' high profitability and capitalisation is to a large extent conditional on very low asset impairment losses, a continued decline in the risk weights of the credit portfolios of most of the banking sector and rising monetary policy rates amid high bank liquidity. A contraction in the cycle could lead to a sharp rise in credit losses, a significant drop in profitability and growth in risk weights, followed by a negative impact on banks' capitalisation. The greater sensitivity of the segments of pension and investment funds and insurance companies to financial market developments and changes in asset prices requires high-quality management of market and liquidity risks to maintain long-term confidence among participants, investors and clients. However, stress test results demonstrate that the current capitalisation, liquidity and profitability of the most important segments of the financial sector ensure high resilience to the shocks assumed.

#### 3.1 DEVELOPMENTS IN THE FINANCIAL SECTOR

Chart III.1

Rates of growth of segments of the financial sector (%)

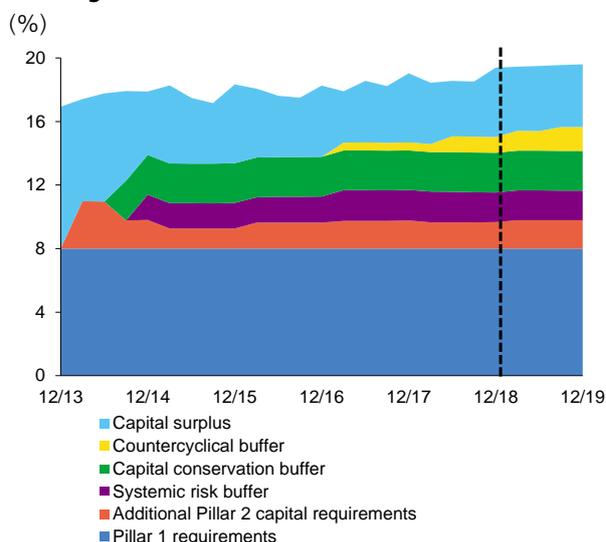


Source: CNB

Note: NFCEs = non-bank financial corporations engaged in lending. The figure next to the segment name denotes total assets as of the end of 2018 in CZK billions. The banking sector also includes credit unions.

Chart III.2

Structure of capital requirements in the domestic banking sector (%)



Source: CNB

Note: Due to partial overlap of the capital conservation buffer requirements with the Pillar 2 requirements, the Pillar 2 requirements have since July 2014 been adjusted for the requirements arising from the stress tests conducted for supervisory purposes. The capital surplus prediction for 2019 assumes constant risk weights. Risky exposures are calculated on the basis of banks' assumptions about future loans, which banks report in the statement "Bank financing plans" (FPSIFE10).

### **The total assets of investment funds converged towards the level in insurance companies**

All segments of the financial sector saw year-on-year growth in total assets at the end of 2018 (see Chart III.1). Total assets grew by 3.8% year on year to CZK 9.2 trillion (178.2% of GDP).<sup>23</sup> The banking sector,<sup>24</sup> which accounts for almost 80% of the financial sector's assets (see Chart III.1), recorded the largest growth in absolute terms (CZK 273 billion, or 3.9%). The highest rates of growth in total assets were recorded by pension funds (CZK 25 billion, or 5.6%) and investment funds (CZK 24 billion, or 5.0%). Investment funds' total assets converged towards the level in insurance companies.

## **3.2 BANKS**

### **3.2.1 Capital**

#### **Banks' capitalisation increased in 2018**

The total regulatory capital in the domestic banking sector rose by CZK 22 billion in 2018, reaching CZK 494 billion.<sup>25</sup> The overall capital ratio increased by 0.4 pp to 19.6% (see Chart III.2) and the Tier 1 capital ratio by 0.4 pp to 19.1%. Accumulation of capital from profit (+1.1 pp of the capital ratio) and a decline in aggregate risk weights (+0.3 pp) outweighed the effect of growth in client loans (-0.8 pp) and other assets (-0.2 pp) on the capital ratio.

#### **Capital surpluses are an important component of capitalisation**

Most banks meet the overall capital requirement, consisting of the minimum level of regulatory capital in Pillar 1 (8%), a requirement based on the supervisory review and evaluation process in Pillar 2 (an average of 1.8% for the sector) and capital buffers (an average of 5.9% for the sector), by a sufficient margin. The capital surplus of systemically important banks amounts to CZK 66 billion (3.6 pp) and that of other banks to CZK 48 billion (6.2 pp).

#### **A minimum requirement for own funds and eligible liabilities (MREL) will be gradually set for banks in 2019...**

The MREL is intended to create conditions for the resolution of a bank's potential failure, limit the use of public money in the resolution and reduce the impacts of the failure on the real economy and the financial system.<sup>26</sup> The MREL includes an absorption amount, consisting of the current Pillar 1 and Pillar 2 capital, to cover the failed bank's potential losses.<sup>27</sup> Moreover, specified banks that are important financial service providers will also be obliged to maintain a recapitalisation amount. This is designed to safeguard the minimum regulatory capitalisation of the bank as a going concern and to sustain market confidence after the resolution. The minimum MREL recapitalisation amount will be equivalent to the Pillar 1 and Pillar 2 capital requirements and can be met by the bank using internal (intra-group) or external eligible liabilities or capital, or a combination thereof.

#### **...capital surpluses can support compliance with the MREL**

Domestic banks do not have sufficient liabilities that meet the requirements for eligible liabilities. They may thus partially satisfy the MREL (the recapitalisation amount) by using capital surpluses. However, this could affect their ability to respond to changing economic conditions and limit the use of capital surpluses as a potential source to cover increased capital requirements. The CNB will therefore analyse banks' approaches to complying with the MREL on an ongoing basis in connection with the interpretation of stress test results and the calibration of cyclical and structural capital buffers.

23 The EU financial sector accounted for 626% of EU GDP at the end of 2017. More recent data are not available for all Member States.

24 The banking sector also includes credit unions due to the low total assets of the latter relative to the former.

25 The Czech Export Bank and the Czech-Moravian Guarantee and Development Bank are excluded from the analysis of the capital of the banking sector as a whole in the entire section 3.2. This is because these banks are wholly owned by the Czech state (providing implicit state guarantees for their liabilities) and have different business models and volatile credit portfolios.

26 For more details see the thematic article Kahoun, T. (2019): *Minimum Requirement for Own Funds and Eligible Liabilities (MREL): General Approach of the Czech National Bank*.

27 Combined capital buffers are not included in the calculation of the MREL.

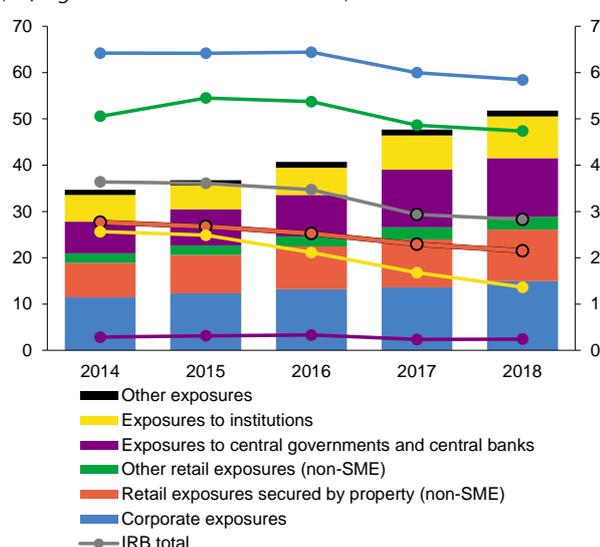
### The capitalisation of some banks may not be sufficient in an adverse phase of the financial cycle

In the *Adverse Scenario* of the CNB's macro stress tests (see section 4.1), the capital ratio of the banking sector as a whole does not fall below the Pillar 1 and Pillar 2 capital requirements (the total capital requirement). However, this does happen in individual cases. A total of 11 banks, including one systemically important bank, would fail to meet the total capital requirement.

Chart III.3

#### Average risk weights and the size of the main categories of exposures under the IRB approach

(%; right-hand scale: CZK trillions)



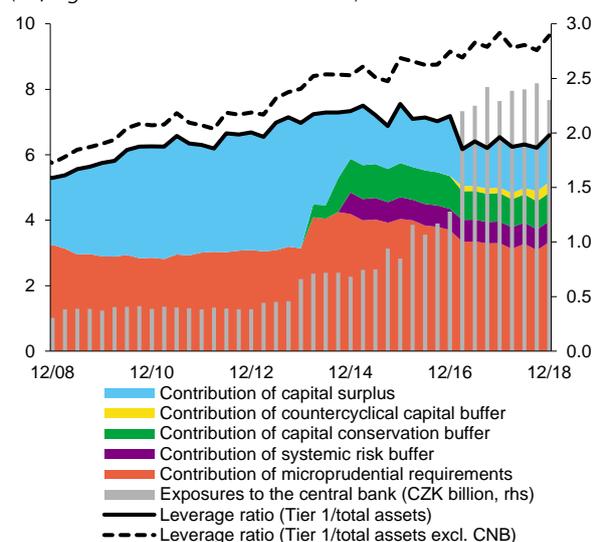
Source: CNB

Note: The points connected by lines denote the level of the risk weights for individual categories of exposures (left-hand scale). The height of the columns denotes the size of the exposure (right-hand scale). The colour coding of the points corresponds to the colour coding of the columns.

Chart III.4

#### Structure of the leverage ratio by capital sources

(%; right-hand scale: CZK trillions)



Source: CNB

Note: Due to unavailability of data in a longer time series, the denominator of the leverage ratio contains total assets (including exposures to the CNB) and the capital surplus consists of total capital (not just Tier 1 capital).

### The aggregate risk weights for exposures under the IRB approach continued to decline in 2018

The downward trend in the aggregate risk weights derived from internal (IRB) models (CZK 5.2 trillion, or 71.5% of the banking sector's exposures) continued in 2018 (a decline of 1.1 pp to 28.3%).<sup>28</sup> The average risk weights fell across all the main exposure categories (see Chart III.3), including house purchase loans (by 1.4 pp to 21.5%). The decline largely reflects the favourable economic situation, which is being accompanied by a low incidence of negative credit events and a favourable recovery rate owing to rising property prices and related favourable conditions for selling collateral.<sup>29</sup> The decline in risk weights for loans for house purchase may also be due to a CNB recommendation<sup>30</sup> limiting the provision of potentially riskier loans, which may be affecting the risk parameters of banks' internal models.

28 The analysis of risk weights uses data on implicit risk weights. These are calculated as the risk-weighted value of the exposure divided by the value of the exposure under the COREP single European reporting framework.

29 For details on the risk of procyclicality of risk weights under the IRB approach, see Brož, V., Pfeifer, L., Kolcunová, D. (2018): *The Procyclicality of Risk Weights for Credit Exposures in the Czech Republic*, CNB WP 12/2018 and Brož, V., Pfeifer, L., Kolcunová, D. (2017): *Are the Risk Weights of Banks in the Czech Republic Procyclical? Evidence from Wavelet Analysis*, CNB WP 15/2017.

30 Recommendation on the management of risks associated with the provision of retail loans secured by residential property – see <https://www.cnb.cz/en/financial-stability/macprudential-policy/recommendation-on-the-management-of-risks-associated-with-the-provision-of-retail-loans-secured-by-residential-property/>.

### The prolonged decline in risk weights may be increasing the banking sector's vulnerability

The lower capital requirements applying to lending (lower risk weights) may be incentivising credit expansion in the relevant portfolios. The stronger decline in risk weights for retail loans secured by property relative to that for corporate loans (22.3% and 9.0% respectively in 2014–2018) was accompanied by growth in their share in loans to the private non-financial sector of 7.8 pp (to 45.7%). Other things being equal, a lower volume of capital linked to housing loans has an upward effect on return on equity. This thus creates an incentive to prioritise growth in this portfolio, which is accompanied by growth in concentration. Such concentration may lead to an increase in the banking sector's vulnerability if risks materialise. All else unchanged, a decline in risk weights also reduces the absolute amount of capital required for the relevant exposures by the capital regulations and may thus further increase the sector's vulnerability. Macroprudential policy approaches to mitigating the risks arising from falling risk weights are discussed in more detail in Box 3.1.

### The leverage ratio has increased slightly

Following the transposition of the new CRR II/CRD V legislative framework (see Box 5.1 for more details), the leverage ratio should act as a (non-risk-weighted) prudential backstop against risks associated with low risk weights.<sup>31</sup> It rose by 0.1 pp year on year to 6.6% at the end of 2018 (see Chart III.4). The slight growth in the leverage ratio was due to stronger year-on-year growth in capital (4.9%) than in the banking sector's balance and off-balance sheet (4%). The situation could nevertheless change in the event of a turnaround in the business cycle, when a potential release of the countercyclical capital buffer, use of the conservation capital buffer and a decrease in capital surpluses could cause the leverage ratio to decline to about 4% (see Chart III.4), close to the 3% level that will represent the minimum leverage ratio requirement after the transposition of CRR II/CRD V. Domestic banks still hold a large part of their balance sheets (31.6%) as exposures to the central bank. This reflects a sharp rise in the CNB's international reserves during the exchange rate commitment in 2013–2017. The leverage ratio adjusted for exposures to the central bank went up by 0.4 pp year on year to 9.6%. However, the new European CRR II/CRD V legislation does not include the option to adjust the denominator of the leverage ratio for exposures to the central bank under exceptional macroeconomic circumstances, even though the Basel Committee on Banking Supervision allows banks to do so (see Box 5.1).

#### BOX 3.1: POSSIBLE MACROPRUDENTIAL POLICY RESPONSES TO A DECLINE IN RISK WEIGHTS FOR RETAIL EXPOSURES SECURED BY RESIDENTIAL PROPERTY IN THE CZECH REPUBLIC IN AN EXPANSIONARY PHASE OF THE CYCLE

The decline in risk weights observed in a sustained expansionary phase of the cycle can make some banks more vulnerable in certain circumstances (see section 3.2.1). One such situation is that where the capital requirement for the relevant risk weight reaches a level where capital does not cover unexpected losses in the event of a shock. In this regard, the CNB pays particular attention to the risk weights of banks using the IRB approach to setting the capital requirement for credit risk, especially for exposures secured by residential property (the mortgage portfolio; see Chart III.3).

To assess the relevance of risks associated with falling risk weights for IRB exposures secured by residential property, a sensitivity analysis of the capital requirement for the mortgage portfolio was conducted using the methodological framework for the CNB's stress tests. The starting point for the analysis was the *Adverse Scenario* of the five-year macro stress test conducted in December 2018 (*Risks to financial stability and their indicators – December 2018*, section 3.3). The scenario was designed to contain the risk characteristics of a major crisis in the real estate sector. During the crisis, PD increases five times and LGD goes up by 25 pp over one year. These figures correspond to those

31 See Pfeifer, L., Hodula, M., Holub, L., Pikhart, Z. (2018): *The Leverage Ratio and Its Impact on Capital Regulation*, CNB WP 15/2018.

recorded during the real estate crisis in Spain in 2012–2013 and were applied in a similar sensitivity analysis conducted by the Belgian macroprudential authority when it introduced a risk weight add-on for IRB banks. The modified adverse scenario would result in losses leading to a fall in the capital ratio from 18.7% to 9.2% in the domestic banking sector over the five-year horizon. This decrease is 0.7 pp larger than in the standard December 2018 *Adverse Scenario*.<sup>32</sup> However, it can be said that the domestic banking sector as a whole would stay above the 8% regulatory minimum and show sufficient resilience in the event of a strong crisis in the residential property sector despite a significant impact on capital. Setting minimum risk weights for the mortgage portfolio in the Czech Republic is thus not necessary at the moment.<sup>33</sup>

The CNB will nonetheless continue to closely monitor the risk weights for IRB exposures secured by residential property. It stands ready to use appropriate tools if there are indications that banks are insufficiently resilient to shocks to the mortgage portfolio. One option is to affect the level of risk weights by applying Article 458 of the CRR. The CNB assessed its potential application in FSR 2015/2016 (section 4.3.2) and concluded that the conditions for doing so had not been met.<sup>34</sup> Compared with countries that actively apply Article 458 of the CRR in the area of risk weights for the mortgage portfolio (Belgium, Finland and Sweden), the Czech Republic is still in a relatively good position – the current risk weights in the Czech Republic are significantly higher despite showing a downward tendency, and household debt is relatively low (Table III.1 Box). The CNB is also active in applying macroprudential measures that relate directly or indirectly to property exposures (LTV, DTI, DSTI and CCyB).<sup>35</sup>

A possible alternative to the use of Article 458 of the CRR is to apply the sectoral systemic risk buffer (SRB) contained in the proposed revision of CRR II/CRD V (see Box 5.1). However, the practical use of the sectoral SRB will be affected by the speed at which the new rules are implemented into the national legislation (prospectively around 2020/2021) and may be subject to application complications, such as overlaps with other macroprudential capital instruments.

Lastly, the issue of risk weight levels should be considered in the broader context of other planned regulatory measures such as the setting of an output floor for risk weights under the Basel III reform package and the EBA guidelines on appropriate inclusion of data from the crisis years in banks' internal models.<sup>36</sup> Both these measures may potentially foster higher risk weights for the mortgage portfolio as well. Setting the output floor on the simplified assumption of it being binding for individual portfolios<sup>37</sup> would mean setting the risk weights for IRB exposures secured by residential property at 22.3%, i.e. around 0.8 pp higher than the current average implicit risk weights (see section 3.2.1).<sup>38</sup> The EBA guidelines may imply that banks will use higher PD and LGD levels (and hence higher

32 However, the demonstrated resilience is largely conditional on the banking sector's capital surpluses (see section 3.2.1). The conclusion of the December 2018 macro-stress test result regarding the role of the capital surplus thus still applies – the capital ratio would fall below the 8% regulatory minimum over the test horizon if banks did not maintain such a surplus voluntarily.

33 Nevertheless, the introduction of minimum risk weights would not necessarily be too costly for banks in terms of capital. According to the results of the analysis in Box 3.2 in FSR 2017/2018, which quantified, among other things, the impact of setting minimum risk weights for domestic banks' capital surpluses at 25%, such a limit would be constraint for four domestic banks. The capital surplus of the banking sector would drop by CZK 2.9 billion (or 0.6% of the banking sector's total capital).

34 The results of the analysis showed that the risk weights for the mortgage portfolio in the Czech Republic were high relative to those in other European countries, the PD and LGD settings were mostly prudent and the loss experience was low. The analysis also pointed out that Article 458 is materially and administratively demanding to apply and requires the involvement of a number of EU bodies.

35 On the other hand, the residential property market in the Czech Republic is showing signs of overvaluation amid elevated growth in mortgage loans (see section 5.2). It should also be noted that all the countries applying Article 458 of the CRR received a warning in the area of risks on the residential property market and property financing loans from the ESRB before doing so.

36 For details see <https://www.bis.org/bcbs/publ/d424.pdf> and <https://eba.europa.eu/regulation-and-policy/model-validation/guidelines-on-pd-lgd-estimation-and-treatment-of-defaulted-assets>

37 However, the output floor will be calculated at the level of the portfolio as a whole.

38 The analysis assumed binding revised Basel III rules setting different risk weights for different LTV intervals (see Box 5.2 in FSR 2017/2018). The current 35% risk weight for exposures secured by property under the STA approach is therefore not considered. Under this assumption, the risk weight under the IRB approach implied by the fully implemented output floor would be 25.4%.

risk weights) than those implied by the current “through-the-cycle” (TTC) values affected by the relatively long favourable phase of the cycle.<sup>39</sup>

**Table III.1 Box**

**Comparison of the situation in countries applying Article 458 of the CRR in the risk weight area at the time of notification with the current situation in the Czech Republic**

Country	Belgium	Finland	Sweden	Czech Republic
Notification	July 2017	August 2017	May 2018	-
Effect of measures	April 2018	January 2018	December 2018	-
IRB risk weights for exposures secured by residential property at the time of notification	9.7%	8%	3–13%	21.5%
Household debt/GDP	60.9%	65.7%	88.2%	31.4%
Growth in property transaction prices (year on year, 4-year average)	1.2%	0.3%	9.4%	6.3%
Property price overvaluation	10%	N/A	30–65%	Over 10%
Growth in mortgage loans (year on year)	5.3%	2%	5–9% (2014–2018)	8.3% (September 2018)
Macroprudential measures in the area of real estate exposures	No	Hard LTV limit of 90% (95% for first time buyers) since 2016	Hard LTV limit of 85% since 2010 + amortisation requirement since 2016	Measure focused on loan applicants (LTV, DTI/DSTI) since June 2015 and June 2017 respectively
Use of CCyB	No	No	Currently 2% (2.5% from September 2019)	Currently 1.25% (2.00% from July 2020)

Source: CNB, ESRB, EBA, national authorities, Eurostat, IMF

### 3.2.2 Credit Risk

#### The current approach to credit risk is both backward- and forward-looking

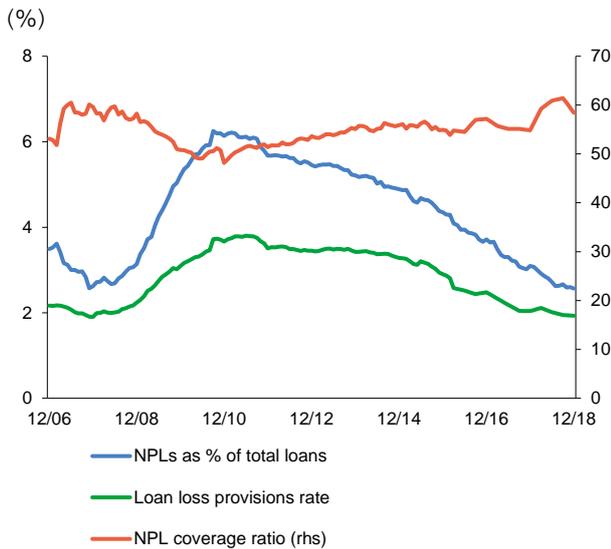
For the assessment of credit risk, the IFRS 9 accounting standard requires correct and timely recognition of both materialised credit risks (a backward-looking view), when loan impairment has already taken place (non-performing loans – NPLs, Stage 3 – impaired) and future expected credit risks (a forward-looking view) for loans that do not currently show any evident signs of impairment (performing loans, Stage 1 – no increase and Stage 2 – increase). Banks cover recognised materialised and future expected credit risks with provisions.

#### Materialised risks, as measured by the non-performing loans ratio, are at their lowest level since 2007...

The ratio of NPLs (Stage 3) to total loans went down by 0.5 pp in 2018 to 2.6% at the year-end (see Chart III.5). The lowest NPL ratio since 2007 was reached through a combination of an increase in total loans (accounting for 42%) and a decrease in NPLs (accounting for 58%).

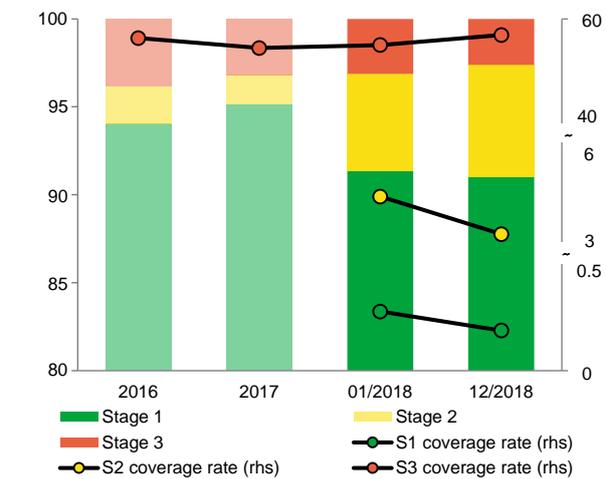
<sup>39</sup> The TTC values are set with an eight-year time scale for domestic banks using the IRB approach.

**Chart III.5**  
**Non-performing loans and provisions in the domestic banking sector**



Source: CNB

**Chart III.6**  
**Structure and coverage of client loans**



Source: CNB

Note: The graphical illustration of the changes in coverage ratios corresponds to their relative changes. The loan breakdown for 2016 and 2017 corresponds to the classification into standard, watch and loss loans under the former IAS 39 standard. Under the new IFRS 9 accounting standard (in effect since 1 January 2018), non-performing loans (NPLs) correspond to loans classified in Stage 3 – impaired loans.

**...and coverage of NPLs by provisions seems sufficient**

Coverage of NPLs by provisions did not change materially in the household sector and rose slightly in the non-financial corporations sector. The increase in the NPL coverage ratio in the non-financial corporations sector was due to slower release of provisions (-2.3%) by comparison with the rate of decline in NPLs (-8.7%).<sup>40</sup> Overall, the total coverage of NPLs for both the household and non-financial corporations sectors reached 57.5% at the end of 2018 and has risen by 2.4 pp since the introduction of IFRS 9. Given the losses recorded historically and the conservative loss projections in macro-stress tests (see section 4.1.1) in the case of NPLs,<sup>41</sup> the NPL coverage ratios in individual sectors seem sufficient.

**Revisions to banks' IFRS 9 methodologies led to large realignments inside the performing loan portfolio**

The changes in the volume of performing loans in Stage 2 during 2018 were related to revisions made to banks' IFRS 9 methodologies for shifting exposures between Stage 1 and Stage 2. The weight of performing loans with no increase in credit risk (Stage 1) in performing loans fell by 0.9 pp to 93.5% between the start and end of 2018 (see Chart III.6). This decrease primarily reflected a significant rise in total performing loans with increased credit risk (Stage 2, +22.6%), which outweighed the increase in loans in Stage 1 (+5.6%) related to credit growth (see section 5.2). The ratio of loans with increased risk (Stage 2) to performing loans thus reached 6.5% at the end of 2018.

40 The switch to the new IFRS 9 accounting standard in early 2018 was accompanied by a one-off increase in both provisioning and the coverage of loans by provisions. For the sake of comparability over the period under review, the year-on-year comparisons in the rest of section 3.2.2 therefore use the initial values as of 31 January 2018.

41 Banks' NPL losses are available from the results of the recovery rate survey that the CNB conducts every two years among the nine most important banks and building societies (the most recent round of the survey took place in March 2017). In this survey, banks state their actual and expected NPL recovery rates broken down into several categories of loans to non-financial corporations and households. For the purposes of the sectoral analysis of NPL coverage by provisions, NPL losses are calculated as (1 - the recovery rate).

### Expected credit losses on performing loans are low...

The coverage of performing loans in the household sector at the end of 2018 was equal to that just after the introduction of IFRS 9 in January 2018 (0.45%). In the case of non-financial corporations, the coverage of performing loans fell gradually during 2018 (by 6 bp to 0.52%). The coverage ratios in Stage 1 (see Chart III.7 and Chart III.8) dropped in both sectors mainly due to weaker growth and, in the case of non-financial corporations, a decrease in provisions. The coverage ratios in Stage 2 dropped sharply during 2018. Transfers of exposures accompanied by only limited increases in provisions led to a drop in the coverage ratio in Stage 2 in the household sector by 1.2 pp to 4.2%.<sup>42</sup> The perceived expected loan losses are therefore at very low levels.<sup>43</sup>

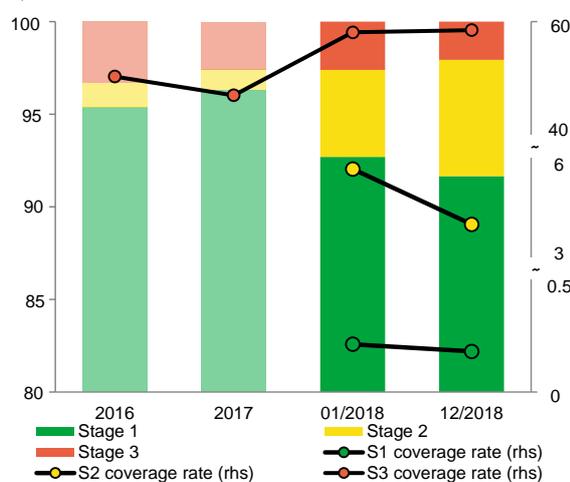
### ...and are supporting a more prudential approach to setting the countercyclical capital buffer

For banks, the introduction of the new IFRS 9 accounting standard entailed considerable effort and investment in developing model-based approaches, methodologies, internal processes and data and IT infrastructure. The implementation process is associated with an increased need to understand model interactions and the behaviour of expected credit losses over the cycle. Looking ahead, model-based approaches can be expected to develop further given that the standard in many areas allows considerable discretion with a major effect on the final expected credit losses. From the macroprudential policy perspective, the trend observed so far, where the provisions do not differ significantly in size from those created under the IAS 39 standard, is supporting a more prudential approach to setting the countercyclical capital buffer (see Box 3.2).

Chart III.7

#### Structure and coverage of loans to households

(%)



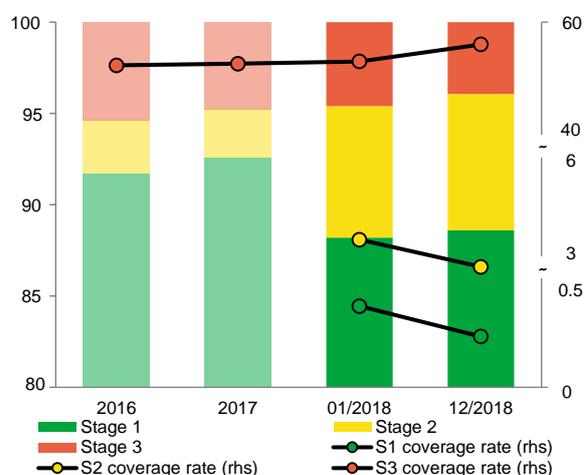
Source: CNB

Note: The graphical illustration of the changes in coverage ratios corresponds to their relative changes. The loan breakdown for 2016 and 2017 corresponds to the classification into standard, watch and loss loans under the former IAS 39 standard. Under the new IFRS 9 accounting standard (in effect since 1 January 2018), non-performing loans (NPLs) correspond to loans classified in Stage 3 – impaired loans.

Chart III.8

#### Structure and coverage of loans to non-financial corporations

(%)



Source: CNB

Note: The graphical illustration of the changes in coverage ratios corresponds to their relative changes. The loan breakdown for 2016 and 2017 corresponds to the classification into standard, watch and loss loans under the former IAS 39 standard. Under the new IFRS 9 accounting standard (in effect since 1 January 2018), non-performing loans (NPLs) correspond to loans classified in Stage 3 – impaired loans.

42 This can nonetheless be attributed largely to ongoing methodological revisions relating to the implementation of IFRS 9. Adjusted for methodological changes, the coverage ratio in Stage 2 fell by 0.3 pp to 5.1% amid unchanged total coverage of performing loans in the household sector.

43 Provisions for performing loans in the household and non-financial corporations sectors amounted to around CZK 14 billion at the end of 2018, accounting for 21.8% of the total volume. The value of provisions for NPLs in Stage 3 was roughly CZK 51 billion.

**BOX 3.2: THE IMPACT OF BANKS' EXPECTATIONS ON TIMELY AND SUFFICIENT PROVISIONING UNDER IFRS 9**

Under IFRS 9, which has been in force internationally since 1 January 2018, banks should, when provisioning, take into account all available information about current and future macroeconomic developments and their effects on the credit risks of relevant exposures. Under this assumption, banks should thus create sufficient provisions to cover their expected credit losses before the business and financial cycle changes, i.e. in the period of still favourable economic conditions, when they are usually profitable. In contrast to the previous IAS 39 standard, which was based on an inherently procyclical concept of incurred losses,<sup>44</sup> IFRS 9 should thus have a positive impact on the stability of banks during crises.

Some studies nevertheless point to the possibility of procyclical behaviour even under IFRS 9.<sup>45</sup> According to these studies, banks' approaches in the growth phase of the cycle may not be sufficiently forward-looking and may lead to the creation of larger provisions than necessary to cover the relatively low credit losses arising from the favourable economic conditions. A sudden and sustained change in the business and financial cycle may then cause a "cliff effect" where banks will be forced to create large amounts of provisions in a relatively short period of time. This may in turn be reflected in a sharp fall in capital adequacy and a credit crunch (see FSR 2017/2018).

When considering the procyclicality of IFRS 9, it is useful to break down the factors influencing provisioning conceptually into two components. The *credit risk component* of a portfolio is associated with a decrease in the quality of the current credit portfolio based on the usual risk criteria (banks' internal ratings, number of days past due etc.). The reclassification of a large part of a credit portfolio into the category of loans with significantly increased credit risk, i.e. the transfer of assets from Stage 1 to Stage 2, where the horizon of the expected loss estimate is changed from one year to the maturity of the loan, can give rise to the creation of a large volume of provisions.<sup>46</sup>

The *expected macroeconomic developments component* is linked to the incorporation of macroeconomic forecasts into internal credit risk models. Provisions are created in large amounts when a deterioration in the macroeconomic conditions is reflected in the risk parameters in banks' internal models and, in turn, in their estimates of expected credit losses. Moreover, a deterioration in risk parameters may signal a significant increase in credit risk, thereby itself becoming a reason for transferring assets between Stage 1 and Stage 2, which further increases the provisioning. This component of provisioning emerged with the introduction of IFRS 9. The effectiveness of IFRS 9 compared with the previous IAS 39 will thus be influenced to a large extent by banks' success in forecasting future macroeconomic developments.

44 See Beatty, A., Liao, S. (2011): *Do Delays in Expected Loss Recognition Affect Banks' Willingness to Lend?* Journal of Accounting and Economics, 52(1), pp. 1–20, and Pool, S., de Haan, L., Jacobs, J. (2015): *Loan Loss Provisioning, Bank Credit and the Real Economy*, Journal of Macroeconomics, 45(C), pp. 124–136.

45 See Abad, J., Suárez, J. (2017): *Assessing the Cyclical Implications of IFRS 9 – A Recursive Model*, ESRB Occasional Paper No. 12, July, and Krüger, S., Rösch, D., Scheule, H. (2018): *The Impact of Loan Loss Provisioning on Bank Capital Requirements*, Journal of Financial Stability, 36(1), pp. 114–129.

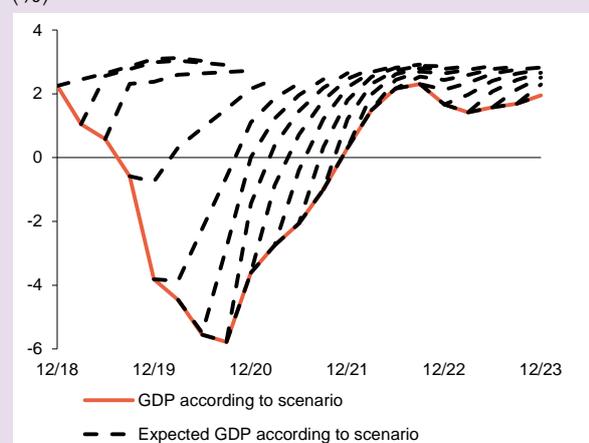
46 Exposures should be transferred between Stage 1 and Stage 2 in the event of a significant increase in credit risk. However, the IFRS 9 guidelines do not clearly define this and merely suggest a criterion of 30 days past due.

Forecasting models often fail to estimate changes in the business cycle and tend to return to the steady state even after a significant change in economic conditions. This was confirmed during the last crisis.<sup>47</sup> In the next part of this box, in order to assess the real impact of IFRS 9, we therefore consider a scenario in which banks' forecasting ability is limited (the "limited forecasting ability scenario"). Chart III.1 Box illustrates banks' GDP growth forecasts in this scenario versus actual GDP growth.

**Chart III.1 Box**

**GDP growth forecast based on the limited forecasting ability scenario**

(%)



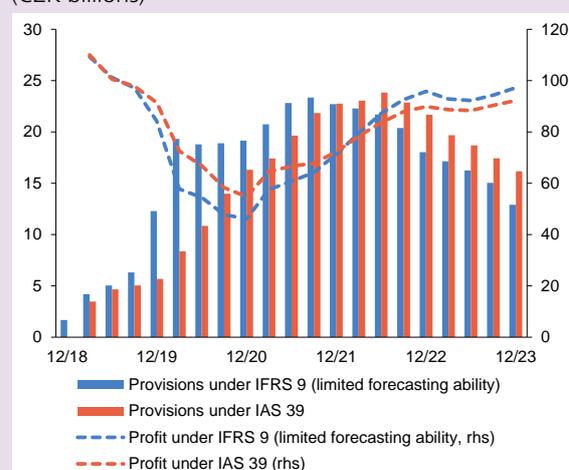
Source: CNB

Note: The figures for the limited expectations scenario were obtained by combining the *Baseline Scenario* and the *Adverse Scenario* for the macro stress tests on the basis of Bayesian inference.

**Chart III.2 Box**

**Illustrative profiles of provisioning and profits under IFRS 9 and IAS 39**

(CZK billions)



Source: CNB

In the limited forecasting ability scenario, banks' provisions would rise sharply at an advanced stage of contraction of the cycle rather than immediately after the change in economic conditions (see FSR 2017/2018). This rise would be due to both the above-mentioned components simultaneously, as banks' expectations about future macroeconomic developments would worsen in a situation of decreasing credit portfolio quality. The increased provisioning would therefore originate both in the reflection of the macroeconomic deterioration in the risk parameters of internal models (the *expected macroeconomic developments component*) for exposures in a given credit risk stage, and in the fulfilment of the criteria for reclassifying exposures between Stage 1 and Stage 2 (the *credit risk component*). Moreover, the creation of a large volume of provisions might coincide with a rise in risk weights in the IRB approach, which would increase the capital requirements. This coincidence of negative factors would affect banks at a time of potentially falling profitability due to, among other things, decreasing credit activity (see Chart III.2 Box). The negative impact of these effects would be greater in the case of a longer-lasting and deeper contraction of the cycle associated with a sharp drop in profitability.

In the limited forecasting ability scenario, the *expected macroeconomic developments component*, which should ensure that provisions are created in a timely fashion and to a sufficient extent in economic good times, might be less

47 Zidong, A., Jalles, J. T., Loungani, P. (2018): *How Well Do Economists Forecast Recessions*, IMF WP 18/39.

than fully functional. In that case, IFRS 9 would not serve its intended purpose and the timing of provisioning over the financial and business cycle might not differ much from that under the previous IAS 39. The risks associated with limited forecasting ability should therefore be taken into account not only in the setting of the countercyclical capital buffer rate (FSR 2017/2018), but also in the timing of the release of the buffer. The reasons for releasing it should include clear signals of risk materialisation, as reflected in a rise in provisions and risk weights and a fall in the capital ratio.

### 3.2.3 Profitability and Liquidity

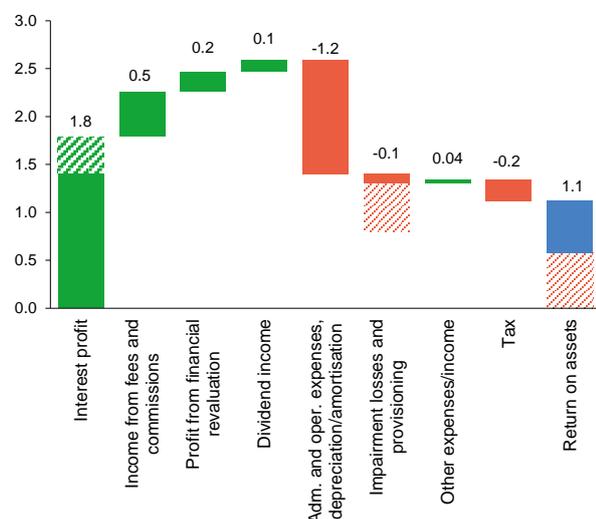
#### The profitability of the banking sector remains high, due in part to growing interest profit...

The banking sector turned in a profit of CZK 82.1 billion at the end of 2018, a rise of 8.9% on a year earlier. Return on assets remained flat at 1.1%. Large differences persist across the groups of banks (see Chart III.2 CB). Large and medium-sized banks showed highest return on assets (1.2%). Interest profit has long been the main source of profitability (see Chart III.9). It rose by 15.8% on a year earlier. Exposures to the central bank recorded an increasing share in total interest profit (29.6% of total interest profit; see Chart III.10), fostered significantly by increases in monetary policy rates. Interest profit solely on client loans recorded year-on-year growth of 6.9%.

Chart III.9

#### Decomposition of return on assets

(%)



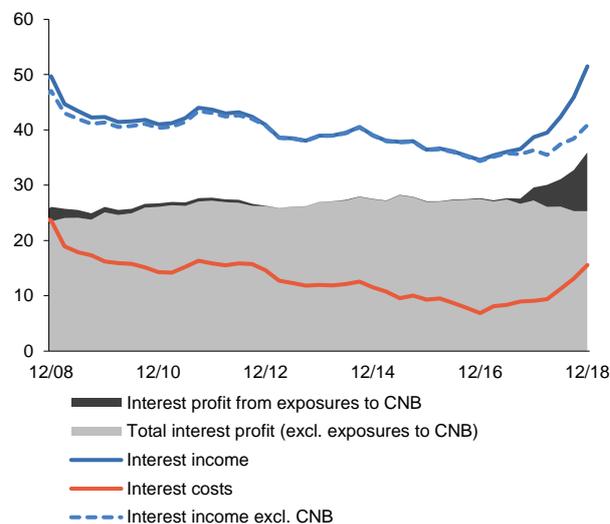
Source: CNB

Note: The given value represents the ratio of the given type of income/expense to the level of assets. The red hatching represents the level of impairment as of 2009 Q4 (the highest impairment level in the period under review) and its potential impact on return on assets in 2018 Q4. The green hatching denotes the ratio of interest profit from exposures to the central bank.

Chart III.10

#### Decomposition of interest profit

(quarterly contributions in CZK billions)



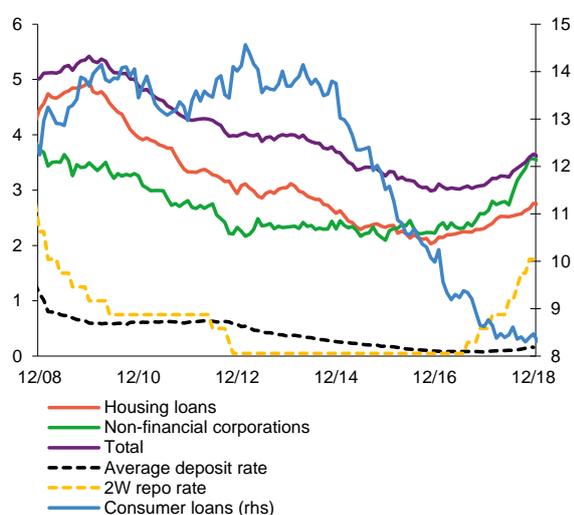
Source: CNB

#### ...which is being supported by rising interest margins in view of very gradual growth in deposit rates

In the case of loans to the private sector, the growth in interest profit was driven by an increase in client loans (of 7.2%) and also by a rising interest margin on new loans (the difference between rates on new loans and deposits). The aggregate margin went up by 0.57 pp year on year to 3.65 pp. Margins increased in year-on-year terms for all types of loans except

consumer credit (see Chart III.11). On the one hand growth in margins is being reduced by persisting competition, but on the other it is being boosted by slower transmission of monetary policy rates to deposit rates than to loan rates. The 2W repo rate increased by 1.25 pp year on year, while the average household deposit rate went up by just 0.08 pp, due mainly to the high share of deposits held by households on their current accounts. Year-on-year growth in deposit rates was very mixed across the groups of banks (see Chart III.12). Small banks recorded the largest rise in rates (0.12 pp) and the highest growth in deposits (14.5%).

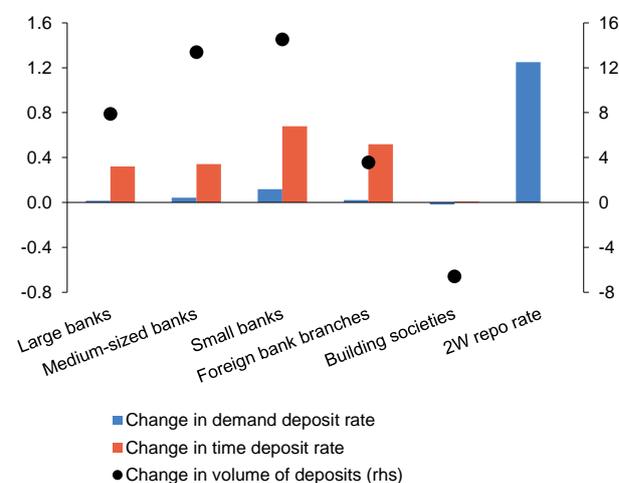
**Chart III.11**  
**Domestic banks' interest margins on new loans**  
(pp)



Source: CNB

Note: Margins are calculated as loan rates for the given sector minus the average deposit rate. The non-financial corporations item excludes revolving loans and credit cards.

**Chart III.12**  
**Year-on-year change in deposit rates versus the 2W repo rate**  
(pp; right-hand scale: CZK billions)



Source: CNB

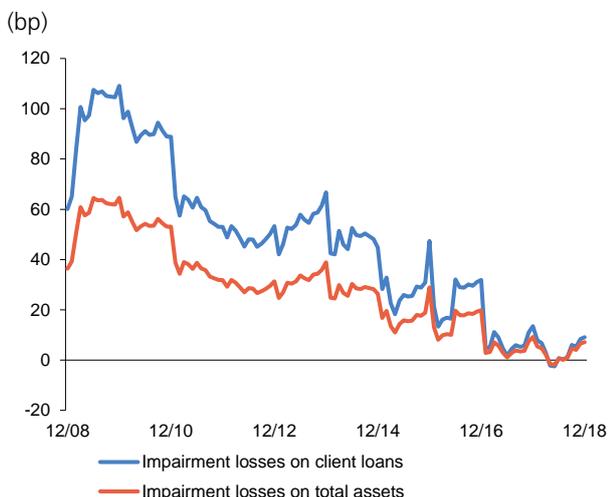
### Profit is also being kept high by low impairment losses

Banks' profitability is also being favourably affected by a continued decline in impairment losses (see Chart III.13), which is linked to the phase of the business cycle and the falling share of NPLs and provisions (see section 3.2.2, Chart III.5). However, the current level of provisions may not correspond to the real long-term risks if banks' expectations regarding future economic developments are overly optimistic (see Box 3.2). An insufficiently anticipated change in the phase of the business and financial cycle thus poses a key risk to profitability. If the ratio of impairment losses on client loans were to increase to the end-2009 level,<sup>48</sup> the banking sector's profit would drop by 39.6% year on year to CZK 45.8 billion. Adjusted simultaneously for all interest income on exposures to the central bank, profit would decrease further to CZK 18.8 billion. The CNB is responding to these risks by gradually raising the countercyclical capital buffer rate (see section 5.2).

48 This period was characterised by growth in NPLs connected with the Great Recession.

Chart III.13

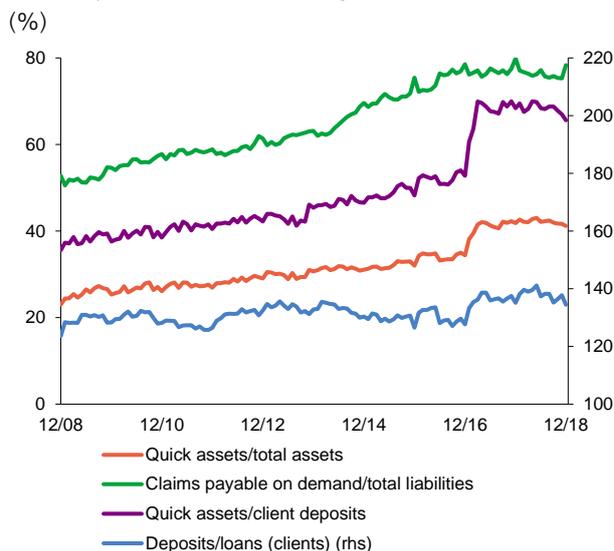
## Asset impairment losses



Source: CNB

Chart III.14

## Liquidity ratios in the banking sector



Source: CNB

### The liquidity position remains very good

The ratio of quick assets to total assets fell by 0.7 pp year on year but remains very high at 41.6% (see Chart III.14). Quick assets saw no major changes in structure, with exposures to the central bank (76,7%) and exposures to the government (19,8%) remaining the most important items. The good liquidity position is illustrated by a high ratio of client deposits to loans (134,5%) and by the liquidity coverage ratio (LCR), which rose by 7.6 pp year on year to 189,9% at the end of 2018 and thus remains well above the regulatory requirement of 100% (see section 4.2 for details).

### 3.2.4 Credit Unions

#### The importance of the credit union segment continues to wane

With the exception of credit risk indicators, the year-on-year changes in the indicators under review in the credit union segment were mostly positive (see Table III.1). The segment saw a major change at the end of 2018 when the largest entity (Moravský peněžní ústav), which accounted for around 46% of its assets (CZK 9.2 billion), was granted a banking licence by the CNB. Following the conversion of its two largest entities into banks (CREDITAS in 2016, MPÚ in 2018), the credit union segment has decreased significantly in importance since 2016 and cannot be a source of systemic risk in its current form.

Table III.1

## Selected indicators of credit unions

(%; credit unions active as of 31 December 2018)

	2016 Q4		2017 Q4	2018 Q4	
	including CREDITAS	excluding CREDITAS		including MPÚ	excluding MPÚ
Assets (CZK billions)	34.2	22.4	23.1	20.2	11.0
Client NPL ratio	24.2	30.4	25.3	30.8	27.3
Quick assets/total assets	14.9	14.3	17.0	17.4	25.4
Coverage of NPLs by provisions	19.5	14.7	12.8	10.5	11.1
Tier 1 capital ratio	16.6	17.5	18.6	21.1	23.9
RoE	-0.8	-0.4	-1.1	0.1	-0.4

Source: CNB

Note: The accounting period is not unified across the credit union segment, so the relevant data were annualised for some institutions.

### 3.3 THE NON-BANK FINANCIAL SECTOR

Non-bank financial institutions complement the range of products provided by the financial sector mainly by providing traditional insurance products offering hedging against life and non-life asset risks (insurance companies) and investment products offering alternative ways of growing savings (investment funds) or building up and growing retirement savings (pension management companies and funds). Non-bank providers of financial assets expand the range of credit products traditionally provided by banks.

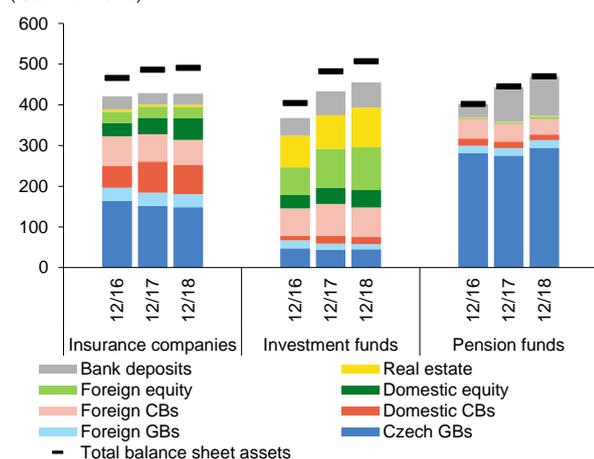
#### Investments managed by domestic non-banks grew further...

Households' interest in investing their savings on financial markets remained high in 2018 (see Chart II.17 CB and Chart III.1). The importance of investment and pension funds continued to rise. This was accompanied by year-on-year growth in these segments' assets. A slight year-on-year increase in insurance companies' assets was due mainly to continued interest in non-life products.

#### ...the structure of investment portfolios stabilised

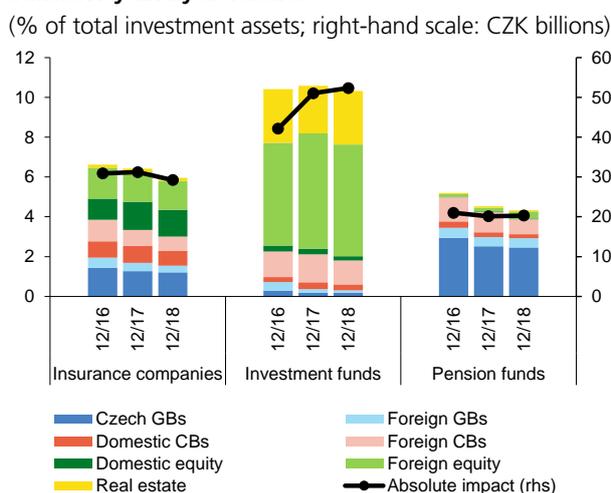
Investment funds' balance sheets remained dominated by shares; the share of real estate investment also increased slightly (see Chart III.15). Insurance companies saw a rise in direct shares due to acquisition activity in the domestic insurance sector. The year-on-year growth in pension funds' assets was reflected in higher holdings of Czech government bonds. The downward trend in their share in domestic institutional investors' balance sheets thus halted. This partly reflected a relative increase in the attractiveness of Czech government bonds to domestic investors due to growth in their yields during 2018 (see section 2.1). Given the partial exit from the low-yield environment, the incentive to "search for yield" weakened. This resulted in a halt in growth in the share of corporate bonds.

**Chart III.15**  
Investment assets of domestic institutional investors  
(CZK billions)



Source: CNB  
Note: GBs = government bonds. CBs = corporate bonds including mortgage bonds. The look-through approach was applied directly or by means of approximation in the case of shares in investment funds. This means that these shares were assigned to financial asset categories (bonds, shares and other equity, real estate) depending on the asset composition or investment orientation of the investment fund concerned.

**Chart III.16**  
Sensitivity analysis results  
(% of total investment assets; right-hand scale: CZK billions)



Source: CNB  
Note: GBs = government bonds. CBs = corporate bonds including mortgage bonds. The look-through approach was applied directly or by means of approximation in the case of shares in investment funds.

**The increasing importance of investment products exposes households to market risk...**

If risk premia were to increase suddenly and financial asset prices were subsequently to drop, households might respond to the decline in the value of their assets with a higher number of withdrawals or requests to redeem investment products.<sup>49</sup> A higher rate of such withdrawals might lead to exhaustion of the liquidity reserves of funds or insurance companies. They would have to respond to further withdrawal requests by selling off less liquid assets. This could exacerbate the initial drop in asset prices and lead to a spiral between withdrawals and price falls with a potentially systemic dimension.

**...which is highest for investment funds**

The CNB used a sensitivity analysis to assess the possible extent of the drop in the value of investment assets should this risk materialise. The analysis was aimed at identifying differences in the riskiness of the individual segments' portfolios and the evolution of that riskiness over time, not at assessing the resilience of individual segments to a market shock.<sup>50</sup> The sensitivity analysis assumed materialisation of the market risks identified at the end of 2018. This meant a decline in prices of traded shares of 30%–35% depending on their geographical location and a decline in property prices of 14%. The increase in risk premia considered resulted in a decline in bond prices of 0.3%–30.8% depending on the type of bond (government or corporate), its maturity, its geographical location and the issuer's rating. The results of the sensitivity analysis showed that investment funds would be hit hardest by this drop (see Chart III.16). This was due to their sizeable equity holdings, for which the biggest decrease in prices was considered in the analysis. The materialisation of the risk considered at the end of 2018 would have had a slightly smaller impact than the possible materialisation of this risk in previous years. This was because the riskiness of portfolios had not increased further and the relatively safe buffer of bank deposits had grown (see Chart III.15). The maturity structure of bonds in portfolios was also favourable as regards portfolio riskiness, as the average maturity of both government and corporate bonds declined slightly in 2016–2018, resulting in lower sensitivity of bond portfolios to an interest rate shock (see Chart III.3 CB).

**Equity and bond market corrections in recent years have not resulted in an outflow of investors**

The recent experience with market corrections does not so far indicate that households are significantly sensitive to financial market developments. A decline in prices of Czech government bonds due to monetary policy tightening at the end of 2017 caused pension funds to incur market losses. Similarly, corrections on equity markets in December 2018 caused an absolute quarter-on-quarter decrease in the value of investment funds' assets. However, this did not lead to a decline in investors' interest in shares in these funds (see Chart III.17). Nevertheless, this experience does not rule out the possibility of investors changing their behaviour in the event of a major correction or a sustained decline on financial markets. This is also evidenced by historical experience in the second half of 2008, when a simultaneous decline in financial asset prices and an exodus of investors led to a 29% decrease in the total assets of the domestic collective investment funds segment (see Chart III.4 CB). The CNB is therefore continuing to monitor the systemic risk associated with the non-bank financial system and is involved in the international debate about potential macroprudential instruments beyond banking (see FSR 2017/2018, section 5.4.5).

49 This risk is highest for shares in investment funds. For pension and insurance investment products, the incentive to terminate investment products is lower, due mainly to a loss of tax discounts. Nevertheless, in the event of financial need coupled with uncertainty about the stability of investment product providers, there is risk of increased interest in terminating contracts relating to pension and insurance products.

50 The sensitivity analysis did not account for hedging. In the case of insurance companies, it covered all financial placements regardless of whether the investment risk is borne by the policy holder or the insurance company. It did not consider any change in the prices of financial assets not traded on financial markets. The effect of exchange rate risk was not considered either.

### 3.3.1 Insurance Companies

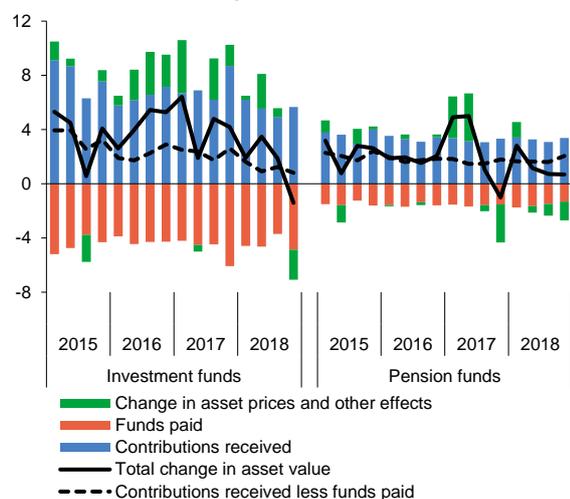
#### Insurance companies as a whole remained sufficiently capitalised...

Insurance companies' assets recorded a slight year-on-year increase of CZK 8 billion (1.6%) to CZK 520 billion. The aggregate ratio of eligible own funds of insurance companies<sup>51</sup> to the solvency capital requirement (SCR) was 227% at the end of 2018 (down by 8 pp year on year). Most insurance companies maintained eligible own funds well above the SCR (see Chart III.18). The ratio of eligible own funds to the SCR at the end of 2018 was partly affected by developments on global financial markets, which saw an increase in risk premia and a decline in expectations about the speed of future growth in monetary policy rates. These developments (a "double hit" shock) were unfavourable for insurance companies, as slower growth in monetary policy rates led to a fall in long-term risk-free interest rates and hence a rise in the aggregate value of insurance companies' liabilities,<sup>52</sup> while growth in risk premia conversely resulted in a decline in the prices of financial assets held by insurance companies. The worse global macroeconomic outlook and growing uncertainty on financial markets mean there is a risk of this adverse situation continuing (see section 2.1). The CNB is therefore continuing to monitor the value of assets and liabilities and capitalisation of insurance companies and is using supervisory stress tests and the new macro-stress test to verify the resilience of the insurance sector (see section 4.1.2). The most recent test results showed that the domestic insurance sector as a whole would be sufficiently capitalised even in the event of a major "double hit" shock.<sup>53</sup>

Chart III.17

#### Decomposition of the change in the value of assets of investment and pension funds

(% of total assets of segments)



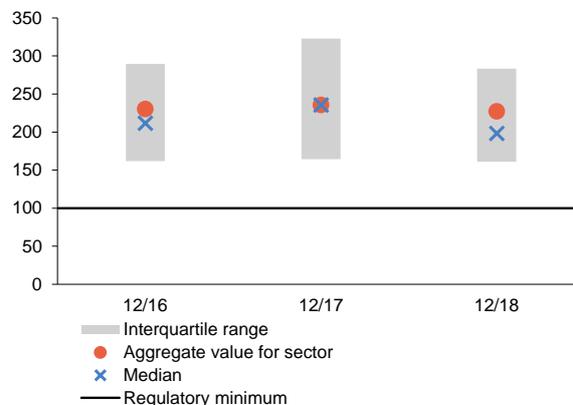
Source: CNB

Note: The values are gross contributions received and funds paid, i.e. unadjusted for the transfer of funds between funds.

Chart III.18

#### Ratio of insurance companies' eligible own funds to the solvency capital requirement

(%)



Source: CNB

Note: Branches of foreign insurance companies and the Export Guarantee and Insurance Corporation are excluded from the calculation.

51 Excluding branches of foreign insurance companies and the state export insurance company EGAP, whose solvency position is different from the rest of the insurance sector due to state guarantees.

52 Under Solvency II, insurance companies calculate the value of liabilities by discounting future expected cash flows. Risk-free yield rates derived mostly from interest rate swaps, whose values are closely linked to current and expected future monetary policy rates, are used for discounting.

53 Detailed results of the supervisory stress tests of insurance companies are published on the CNB website: <https://www.cnb.cz/en/financial-stability/stress-testing/>.

### ...and growth in assets and profitability reflected dynamic growth in non-life insurance

Sufficient capitalisation continued to be fostered by the sector's profitability. The aggregate rate of return on the sector's assets increased by 63 bp year on year to 2.84% (see Chart III.5 CB). The increase in profitability and total growth of the insurance sector as measured by premiums written in 2018 was due to non-life insurance, which recorded a year-on-year rise in gross premiums written of 6% to CZK 101 billion, while claim settlement costs remained unchanged year on year (see Chart III.6 CB). Conversely, the importance of life insurance as a whole continued to decrease (premiums written fell by 3% year on year to CZK 54 billion), as clients' and insurance companies' interest in insurance products with an investment component continued to decline.

### 3.3.2 Pension Management Companies

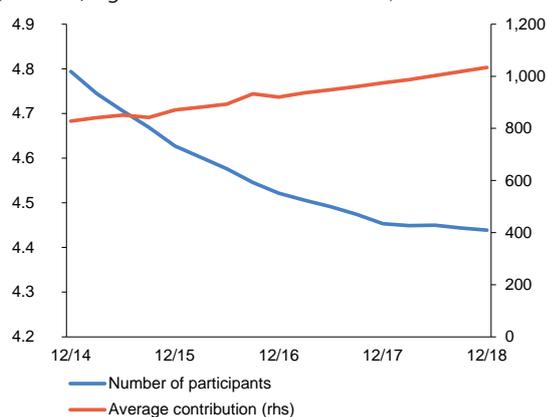
#### The assets administered by pension management companies (PMCs) are rising constantly, but PMCs' role in providing for retirement remains limited

The total assets administered by PMCs' funds ("pension funds") grew by CZK 25 billion year on year (5.6%) to CZK 470 billion as of December 2018. This growth was due to higher contributions received than sums paid out (see Chart III.17). In 2018, the long-running decline in participants halted and the upward trend in the share of participants with employer contributions and in the average size of contributions continued (see Chart III.19). Average contributions remain relatively low<sup>54</sup> and fell year on year (to 4.3%) due to high wage growth relative to the net wage. A large majority of participants (over 95% at the end of 2018) prefer lump-sum settlements to regular pension payments. Pillar 3 thus remains a complementary investment product whose returns for participants are enhanced by state support and tax deductible employers' contributions.

Chart III.19

#### Number of participants and the average contribution in the third pension pillar

(millions; right-hand scale: CZK/month)



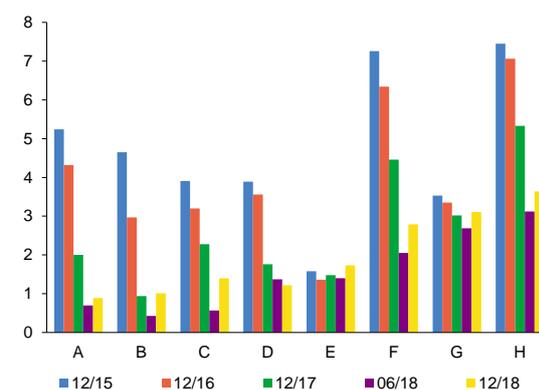
Source: CNB

Note: The number of participants includes those in transformed and participation funds. Contributions consist of those by the participant, the employer and the state. The contributions are averaged over the last four quarters and are relative to the average number of participants for those quarters.

Chart III.20

#### Combined capital surplus of pension management companies

(% of TFs' total assets)



Source: CNB

Note: The letters denote individual pension management companies. The combined capital surplus is the sum of the capital surplus (i.e. the difference between capital and the capital requirement) of PMCs and the "capital" (i.e. the difference between assets and liabilities) of TFs. A positive value can be interpreted as the percentage size of the shock to the assets of TFs which would lead to a fall in the capital of PMCs to the capital requirement level.

54 Including state support, they amounted to just CZK 1,034 per month in 2018.

### **Financial market developments were unfavourable for PMCs**

The evolution of asset prices was unfavourable for transformed and mandatory conservative funds, which hold a large part of their portfolios in Czech government bonds, and for other participation funds, which have a more risky asset structure. Market revaluation reduced the total value of pension funds' assets by CZK 7.5 billion. Four transformed funds saw their assets fall below their liabilities. As the law forbids the transfer of market losses to participants, this difference had to be made up by PMCs from their own funds. In one case, this led to a drop in capital below the regulatory minimum and the company had to top up its capital.

### **The size of transformed funds is a persisting source of vulnerability for PMCs**

In its Financial Stability Reports, the CNB regularly points out sources of vulnerability of PMCs. An appropriate measure of PMCs' resilience to the risks of transformed funds (TFs) is the concept of the combined capital surplus, consisting of PMCs' capital surplus (the difference between PMCs' capital and capital requirements) and the "capital" administered by TFs (the difference between TFs' total assets and liabilities). It indicates that despite some improvement in the second half of 2018, the resilience of PMCs decreased year on year (see Chart III.20). Given the size of TFs' assets, a downturn in market prices could lead to large top-ups and cause PMCs problems in meeting the capital requirements. Owners of four companies would have to top up capital if TFs' assets were to fall by less than 1.5%. The CNB is monitoring the situation and is engaged in an intense dialogue with the endangered companies about their capital planning.

## **3.3.3 Investment Funds**

### **Investment funds can contribute to systemic risk by multiplying falls in asset prices...**

Investment funds' assets grew by CZK 24 billion (5.0%) year on year to CZK 507 billion. Any drop in the value of investment fund units and growth in market volatility may cause investors to make more redemption requests. In order to be able to meet these requests, investment funds must have sufficient liquid assets. If they were unable to cover the outflows from liquid reserves, they would have to sell less liquid assets, which could further contribute to the fall in asset prices, initiating a spiral of price falls, investor exoduses and fire sales.<sup>55</sup> This spiral could be exacerbated if investment funds were credit financed.

### **... the systemic risk stemming from the domestic investment fund segment has not increased**

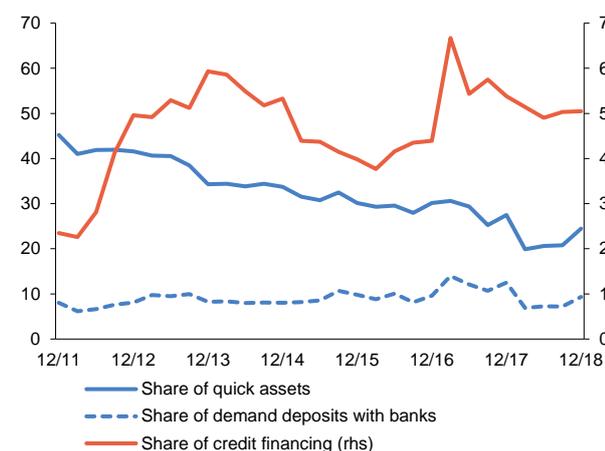
Domestic investment funds' share of credit financing remained low at 5% at the end of 2018 (see Chart III.21). On the other hand, their liquid assets dropped further, the year-on-year decrease of 3 pp to 24.5% being due mainly to a decrease in bank deposits. The long-running downward trend in the share of liquid assets in recent years is linked with dynamic growth of the segment of investment funds, which made new investments mainly in shares. The relative share of government bonds thus decreased, although the absolute volume of government bonds held by domestic investment funds was little changed. As the majority of investment fund assets were invested on highly liquid foreign markets (see Chart III.15), the risk of a negative spiral of fire sales and investor outflows remained low. Nevertheless, if uncertainty were to rise, investment funds could contribute to the multiplication of risks on the domestic real estate or government bond markets.

<sup>55</sup> Government bonds of countries with low credit risk can serve as safe assets and can therefore be expected to be in high demand even at times of market uncertainty. Hence, they are considered here to be liquid assets. In contrast, equity or real estate investments, for example, can be strongly affected by uncertainty. The reduced liquidity reflects growth in the costs associated with selling such assets rather than them being unsellable, as bid-ask spreads rise and prices fall at times of market uncertainty.

Chart III.21

**Investment funds' share of liquid assets and credit financing**

(% of assets)



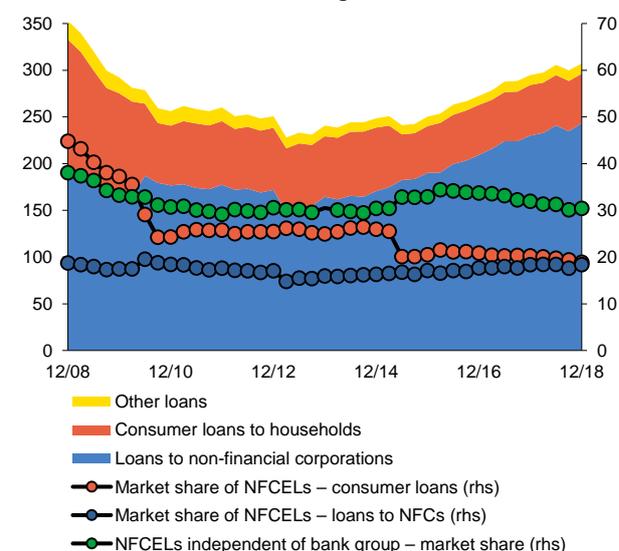
Source: CNB

Note: Quick assets comprise cash, claims payable on demand (including bank deposits) and government bonds. The share of quick assets relates to collective investment funds while the share of credit financing relates to all investment funds.

Chart III.22

**Loans provided by non-bank financial corporations engaged in lending**

(stock of loans in CZK billions; right-hand scale in %)



Source: CNB

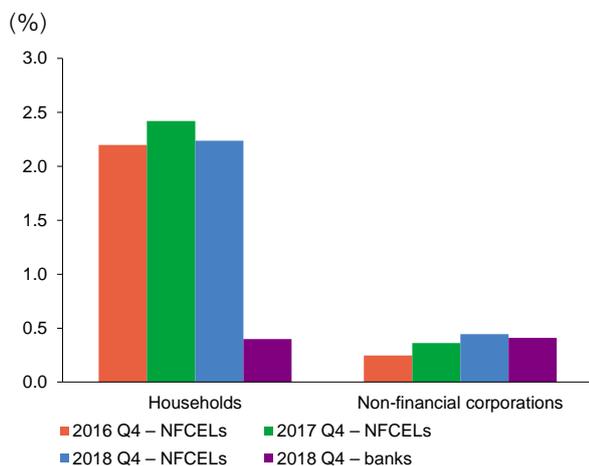
Note: Market share of NFCEs in total loans provided to residents by banks and NFCEs combined. The market share of independent NFCEs relates solely to loans to residents provided by all NFCEs.

**3.3.4 Non-bank Financial Corporations Engaged in Lending****The trends in the market shares and loan riskiness of non-bank financial corporations are mixed**

The total volume of loans provided by non-bank financial corporations engaged in lending (NFCEs) continued to grow (by CZK 12.3 billion year on year to CZK 307.2 billion), although less quickly than in past years (see Chart III.22). The average year-on-year growth fell from 8.1% in 2016 and 2017 to 5.3% in 2018. As in previous years, the year-on-year growth in loans provided by NFCEs was largely due to loans to non-financial corporations (5.8% growth), whereas loans for consumption dropped slightly (by 2%). The trends in the market shares and loan riskiness of NFCEs are mixed across segments. The market share of NFCEs in loans to non-financial corporations was flat after several years of growth, while the downward trend in loans to households (typically loans for consumption) continued. The decline in loans to households may be linked with the completion by the CNB of the non-bank consumer credit provider licensing process under the Consumer Credit Act, which is a significant step towards establishing a transparent market environment for consumer credit and improving management of the related credit risks.<sup>56</sup> Loan riskiness, as expressed by the three-month default rate, decreased by 18 bp to 2.24% for NFCEL loans to households, whereas that for NFCEL loans to non-financial corporations continued to follow a slight upward trend (see Chart III.23). Nevertheless, the longer-term conclusion regarding the riskiness of NFCEL loans compared with bank loans holds: NFCEL loans to households exhibit a higher degree of credit risk, whereas for loans to non-financial corporations broadly similar figures are observed in both segments of the financial sector, as secured leasing loans make up the bulk (85%) of NFCEL loans to non-financial corporations.

<sup>56</sup> During 2018, the CNB granted licences to 87 applicants and processed applications from other companies. After issuing licences, it commenced supervisory and inspection work involving off-site thematic investigations and standard on-site inspections in supervised entities.

Chart III.23

**3M default rate on loans provided by NFCEs and banks**

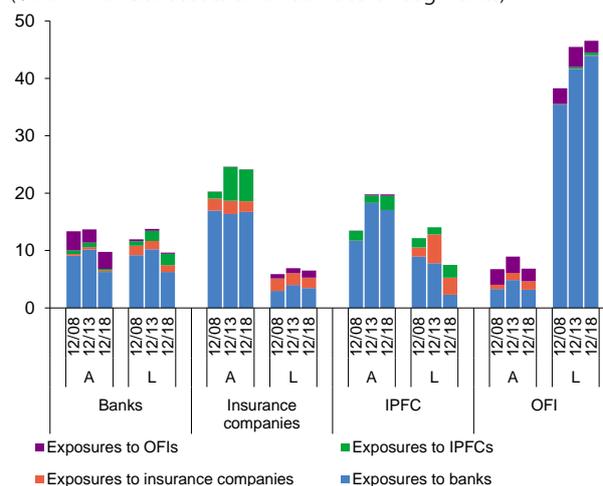
Source: CBCB, CNCB, SOLUS, CNB

Note: The default rate on loans provided to households by NFCEs is calculated as the average of the data from the NRCI and SOLUS. Only the NRCI is used for non-bank loans to non-financial corporations. Loans for consumption in the case of households.

Chart III.24

**Share of exposures to domestic financial counterparties**

(% of financial assets and liabilities of segments)



Source: CNB

Note: A = assets, P = liabilities. IPFCs = investment and pension funds and companies. The segment of other financial intermediaries (OFIs) primarily comprises NFCEs and non-bank security dealers. Year-end values.

**3.4 INTERCONNECTEDNESS OF THE FINANCIAL SYSTEM****The level of direct balance-sheet interconnectedness in the domestic financial sector has not increased**

Domestic banks continued to represent the main component of the interconnectedness of the segments of the domestic financial sector. Bank deposits remained a substantial liquid asset in the balance sheets of insurance companies and investment and pension funds in 2018. These institutions also had significant mortgage bond exposures to banks (see Chart III.24). Activity on the domestic interbank market fell by CZK 16 billion year on year and the average value of the mutual exposures of domestic banks in the form of deposits, bonds and loans reached CZK 429 billion (the average for the individual quarters) in 2018. On the asset side, banks were the key source of financing for domestic financial groups and were important for the financing of other financial intermediaries (OFIs, mostly NFCEs), to whom they had provided almost 50% of financing as of the end of 2018. The largest component of balance-sheet interconnectedness outside the banking sector was shares held by insurance companies in domestic investment funds, which represented a natural way of allocating part of the investment portfolios of insurance companies. The continued relatively low level of interconnectedness indicates that the structural component of systemic risk is stable and the risk of contagion across the segments of the domestic financial market in the event of a negative shock is not increasing.

**Czech government bonds remain the main component of indirect interconnectedness**

Financial market segments are also connected indirectly through joint exposures. A negative shock impacting one of the segments may motivate the entities affected to sell off financial assets, for example in order to satisfy liquidity needs or reduce the capital requirement. If the sell-off concerns financial assets representing joint exposures, the drop in their prices will affect other segments. In the domestic financial market, the joint exposures consisted mainly of Czech government bonds (see Chart III.15). The potential impact of changes in their prices on the profits of domestic financial corporations became partially apparent in 2017–2018, when a rise in Czech government bond yields reflecting monetary policy tightening and a related fall in prices led to losses in the pension fund segment. As this development was gradual and expected, it did not lead to a negative spiral of fire sales. Nevertheless, a sudden repricing of Czech government bonds combined with an increase in risk premia and a significant outflow of foreign investors could lead to contagion and multiplication of the initial price drop. The CNB thus continues to consider the risk of a sharp repricing of risk premia to be a significant risk to financial stability.

### Banks remain in a net creditor position in their ownership groups...

The upward trend in the creditor position of the five largest domestic banks in their groups was interrupted in 2018 (see Chart III.25). Their net claim on controlled entities rose by CZK 1.3 billion to CZK 121.1 billion year on year, but owing to a larger rise in the volume of capital the net creditor position fell by 1.3 pp to 35.7% of the total regulatory capital of domestic banks. On banks' asset side, claims on own NFCEs rose (by CZK 19.4 billion). NFCEs remain the largest debtor within bank groups (78.1% of all claims). Nevertheless, the high concentration of claims on NFCEs has long been stable and, given the nature of the controlled companies' transactions (leasing and factoring), does not give rise to increased risk. Liquidity from building societies also increased year on year (by CZK 9 billion). As in past years, this item represents the largest part of banks' liabilities within their groups (76%). Its year-on-year rise may be linked with a change in intra-group liquidity strategies due to the growth in monetary policy rates.

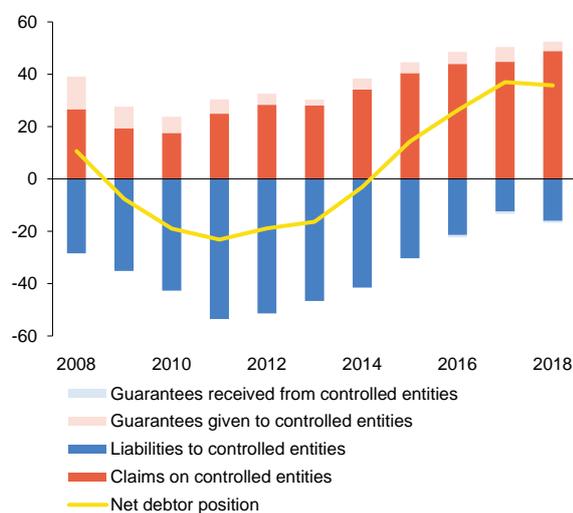
### ...but the upward trend in the net debtor position of banks vis-à-vis non-residents was interrupted

The domestic banking sector's total international debtor position fell by CZK 3.7 billion year on year to CZK 1,078 billion (see Chart III.26). By contrast, the net debtor position of the five largest domestic banks vis-à-vis foreign parent financial institutions continued its trend of previous years, growing by 32 pp year on year to 236% of these banks' regulatory capital. Whereas the developments in 2017 had been due to a sizeable rise in non-residents' deposits connected with the expected exit from the exchange rate commitment, the further growth in the international net debtor position of a large part of the banking sector can be attributed to the growth in monetary policy rates, which increased interest profit on exposures to the CNB (see Chart III.10).

Chart III.25

#### Interconnectedness in domestic bank groups

(% of regulatory capital of domestic parent banks)



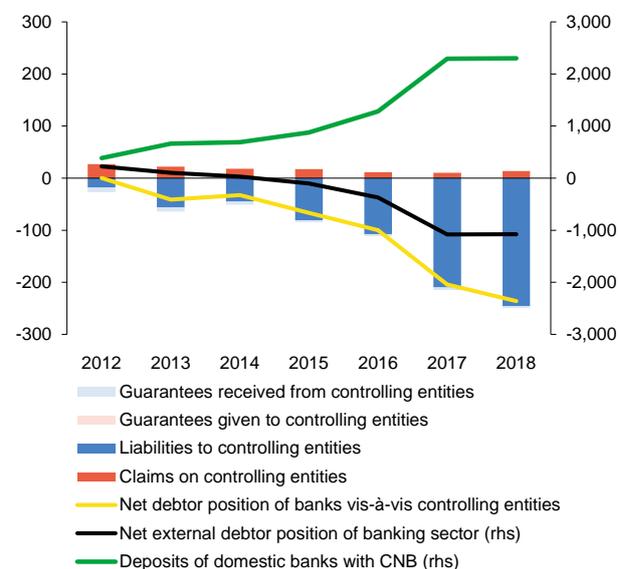
Source: Obligatory information to be disclosed pursuant to Decree No. 123/2007 and Decree No. 163/2014

Note: The chart depicts the aggregate credit interconnectedness of the largest domestic banks, i.e. Česká spořitelna, ČSOB (except Hypoteční banka), Komerční banka and Raiffeisenbank. UniCredit Bank is included only in the periods when it controlled entities.

Chart III.26

#### Interconnectedness vis-à-vis non-residents

(% of regulatory capital of domestic banks; right-hand scale: CZK billions)



Source: Obligatory information to be disclosed pursuant to Decree No. 123/2007 and Decree No. 163/2014, banks' annual reports, CNB

Note: The chart depicts the aggregate credit interconnectedness of the five largest domestic banks vis-à-vis their parent companies. The net debt position of the banking sector represents the overall net position of all banks vis-à-vis all non-residents excluding shares and other equity.