4 THE FINANCIAL SECTOR

4.1 DEVELOPMENTS IN THE FINANCIAL SECTOR

Despite the contraction in economic activity, 2012 was a positive year for the Czech financial sector. The banking sector still has sufficient capital adequacy, profitability and liquidity. Similarly, insurance companies are recording solid capitalisation and rising profits. The equity of the pension fund sector strengthened and collective investment funds switched from previous losses to profits. The main risks to the financial sector stem from a continuing economic slowdown leading to a rise in credit risk and a potential decline in banking sector profitability. Although aggregate indicators of the banking sector indicate a year-on-year increase in its resilience, the differences across institutions increased and some institutions could thus be less resilient to adverse developments. The situation in the credit union segment, where risk indicators are rising, remains unsatisfactory, with some institutions exhibiting low prudence in their business activities.

The financial sector's assets rose in 2012 despite the contraction of the real economy

The adverse trend in the real economy in 2012 was reflected in a smaller year-on-year rise in the balance-sheet of the financial sector. Compared to 2011, when the percentage growth in assets was largest in the banking sector and the credit union segment, 2012 saw an increase in assets across all segments except non-bank financial corporations engaged in lending (NFCELs), which, as in previous years, are losing market share. The banking sector is still the most significant segment of the financial sector in terms of asset size, with a share of more than 77% of total assets (see line FS.2 in the *Table of Indicators*).

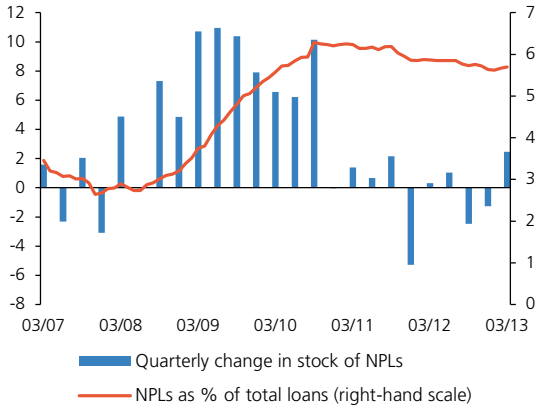
After a decline, credit risk started rising again in the banking sector

Credit risk in banks' balance-sheets, as expressed by the ratio of non-performing loans (NPLs) to total loans to residents, continued to follow the gradual downward trend of the last two years and stood at 5.7% in March 2013 (see Chart IV.1). Non-financial corporations and households recorded opposite movements, however. The NPL ratio in the non-financial corporations sector fell from 8.2% to 7.4% year on year, whereas that in the household sector edged up from 4.9% to 5.1% (see line BS.30 in the *Table of Indicators*).[1]

The decline in NPLs in non-financial corporations during 2012 was due not only to a fall in new defaults (i.e. a lower default rate) compared to

CHART IV.1

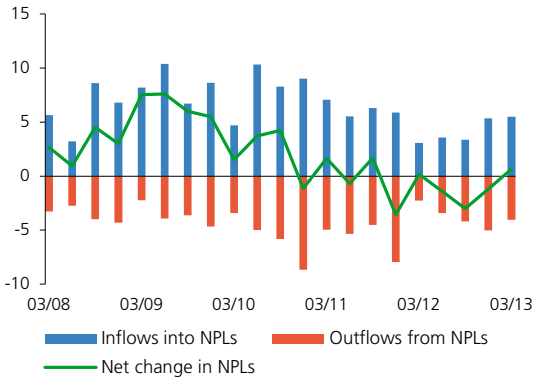
NPLs in the Czech banking sector
(CZK billions, %; client loans to residents)



Source: CNB

CHART IV.2

Decomposition of corporate NPL flows
(CZK billions; client loans to residents)



Source: CNB

1 Besides the above trends in the resident sector, corporate loans to non-residents recorded a sharp increase in NPLs (of CZK 5.5 billion) in the last quarter of 2012. However, this was caused by the one-off classification of several large claims and is therefore not linked with any systemic rise in the risk of loans provided to non-residents, which account for less than 10% of total loans granted.

the previous period, but also to a rising outflow of NPLs caused by write-offs of loans from banks' balance sheets or reclassification of the original loans back to performing loans (see Chart IV.2).[2] In 2012 Q4, however, new defaults rose again compared to the figures for 2012 as a whole, and in the *Baseline Scenario* the default rate should remain elevated in the following year in both the household and non-financial corporations sectors (see Section 2).

Migration of NPLs to the loss category continues

Within NPLs, the share of loans that are not actually past due is decreasing and the proportion of all loans that are more than three months past due is rising (see Table IV.1). This suggests a lower probability of due repayment of loans, or at least part of them, in the future. The gradual migration of NPLs to the loss loan category continues, as predicted in FSR 2011/2012. This category accounted for more than 58% of total NPLs at the end of 2012.[3] In addition, according to transition matrix estimates, this migration should continue in 2013 (see Chart IV.3). This could lead to a need for additional provisioning, with adverse knock-on effects on banks' profitability.[4]

Prudential NPL coverage by provisions is decreasing…

Although the coverage of NPLs by provisions remains at around 50% as in previous years, the number of banks below this average level increased in 2012. Some of them are exhibiting a risky combination of a below-average coverage ratio and a high NPL ratio (see Chart IV.4). The question is thus whether – given this fact and the aforementioned continuing migration of NPLs to loss loans – the coverage level is still sufficiently prudent. Some divergence between the actual and required NPL coverage ratios, as calculated at the aggregate level using the coefficient method, also suggests some doubts (see Chart IV.5).[5] Although the required coverage ratio set in this manner takes into account the structure of NPLs (including migration to the loss loan category), it does not reflect collateral quality, which has an important role in provisioning and can reduce the need for it. From the aggregate perspective, however, a lack of improvement in collateralisation of NPLs can be seen, and the proportion of sufficiently collateralised NPLs in fact

TABLE IV.1

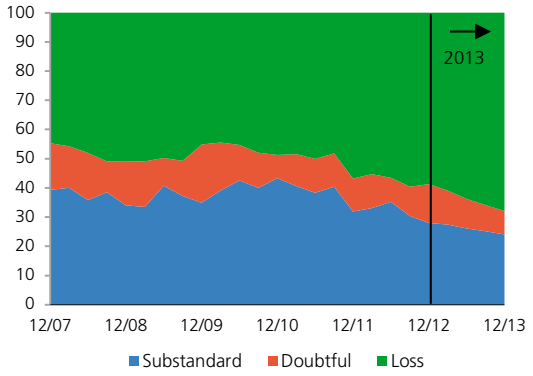
Structure of NPLs
(%)

	Sufficiently collateralised loans to households and corporations	Fully non-collateralised loans to households and corporations	Share of collateralised	NPLs, total
2009	31.0	32.5	36.5	100.0
2010	35.1	31.5	33.4	100.0
2011	36.8	30.6	32.6	100.0
2012	35.4	29.4	35.1	100.0
	Substandard	**Doubtful**	**Loss**	**NPLs, total**
2009	37.4	21.1	41.4	100.0
2010	39.2	13.4	47.4	100.0
2011	32.6	14.0	53.5	100.0
2012	27.1	14.3	58.6	100.0
	Not past due	**Up to 3M past due**	**More than 3M past due**	**NPLs, total**
2009	52.4	9.2	38.4	100.0
2010	51.6	9.9	38.5	100.0
2011	46.1	9.4	44.5	100.0
2012	43.7	9.5	46.8	100.0

Source: CNB, CNB calculation
Note: Note: Sufficiently collateralised loans = loans for house purchase + loans to corporations backed by property and at least two other types of collateral (pledged receivables, movables, securities, sureties, guarantees, etc.).

CHART IV.3

Structure of NPLs and 2013 forecast based on the *Baseline Scenario*
(%)

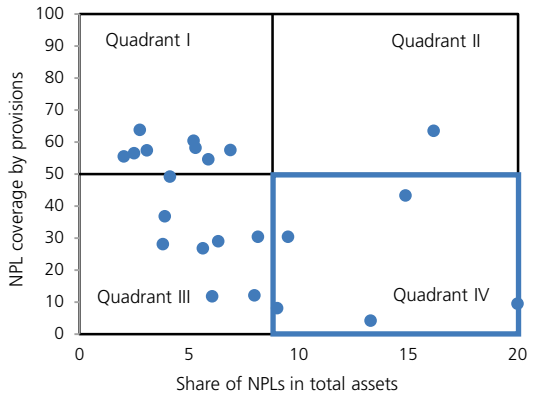


Source: CNB

2 The analysis was conducted on data from the Central Credit Register, which covers the corporate sector only. Data for households are not available for this type of analysis.
3 NPLs are classified as substandard, doubtful and loss according to their worsening quality.
4 Implied loan migrations were obtained by estimating a transition matrix of non-financial corporations in the Central Credit Register and linking it with macroeconomic data based on the official CNB forecast. For more information, see Wei, Z. J. (2003): *A Multi-Factor, Credit Migration Model for Sovereign and Corporate Debts*, Journal of International Money and Finance, No. 22, pp. 709–735, and Otani, A., Shiratsuka, S., Tsurui, R., Yamada, T. (2009): *Macro Stress-Testing on the Loan Portfolio of Japanese Banks*, Bank of Japan Working Paper Series, No. 9.
5 Under Article 201 of Decree No. 123/2007, banks may determine impairment losses by means of i) discounting of expected future cash flows, ii) the coefficient method or iii) statistical models. The coefficient method consists in setting the impairment loss at 1% for watch claims, 20% for substandard claims, 50% for doubtful claims and 100% for loss claims. However, the coefficients are applied to the unsecured part of the claim only. This could not be done in the analysis in question because of insufficient information on the collateral value related to NPLs.

CHART IV.4

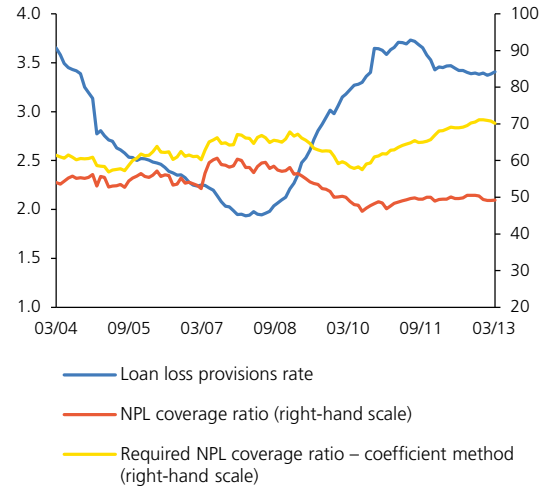
NPL coverage
(%; client loans; as of 31 December 2012)



Source: CNB
Note: Banks excluding branches of foreign banks. The boundaries of the quadrants were chosen as the average NPL coverage ratio in the sector and as the 75th quantile NPL ratio in the sector, which equals 8.8%.

CHART IV.5

Provisions and coverage of NPLs by provisions
(%)



Source: CNB

decreased year on year (see Table IV.1). The aggregate level of collateral on loans for house purchase does not indicate a rising value of collateral last year either (see section 5.5).

… and differences in coverage levels across banks are increasing

To take into account any difference in the level of collateralisation of NPLs when estimating coverage sufficiency, an analysis of coverage sufficiency was conducted at the level of individual banks using loss given default (LGD) values for various credit segments.[6] The results show that the difference between the actual and required coverage ratios rose slightly on average between 2011 and 2012 (from 8.4 pp to 9.4 pp), but the dispersion between banks and the number of banks with insufficient NPL coverage both increased (see Chart IV.6).

Data obtained from surveys of selected banks at the start of 2013 regarding NPL recovery rates indicate that the baseline LGD values used for the analysis of coverage sufficiency are set conservatively across credit segments and banks have in recent years been recording higher recovery rates than those corresponding to the LGD values considered. Nonetheless, in some cases, the expected LGD values for default claims for which the recovery process has yet to be completed are higher and more in line with the elevated LGD levels in the coverage sufficiency analysis. The current NPL coverage for these elevated LGD values thus may truly be insufficient for some banks (see Chart IV.6, right-hand panel).[7]

Credit risk can alternatively be examined using the ratio of impaired loans…

Impaired loans, i.e. loans whose book value has been reduced due to credit risk, represent an alternative measure of credit risk to the traditional NPL indicator. Whereas NPLs de facto indicate the quality of the bank's debtors, impaired loans also take collateral into account and are thus expected to show losses even after collateral is considered.[8] The degree of impairment, i.e. the expected loss, is expressed by the provisions created for such loans. The ratio of impaired loans to total

6 This analysis is based on a comparison of the actual coverage ratio and the required coverage ratio, which should cover NPL losses. The required coverage was calculated as the product of the LGD values and the volume of NPLs in the main credit segments (loans to non-financial corporations, loans for house purchase, consumer credit and other loans). The baseline LGD values for the individual portfolio categories were identical to the values reported by banks in the joint stress testing exercise. For other banks (excluding foreign bank branches) which did not participate in this exercise, the averages for the participating banks were used. The LGD values applied in 2012 were 39.4% for loans to non-financial corporations, 20.7% for house purchase loans, 44.7% for consumer credit and 39.9% for other loans. The calculated average required coverage ratio for the baseline LGD values was 35.2% for 2011 and 33.9% for 2012.

7 The overall sum of defaulted exposures in 2008–2012 with completed and uncompleted recovery is similar across most credit segments. In the case of newer defaults, the amount of defaulted exposures with uncompleted recovery is rising.

8 Loans that are fully collateralised need not be labelled as impaired loans because the bank will be fully satisfied from the collateral in the event of a reduction in the debtor's credit quality. Impairment of such loans can occur only in the event of simultaneous decreases in the debtor's quality and in the value of the collateral or the quality of the collateral provider (e.g. the guarantor).

loans can be used to identify credit risk in the consolidated banking sector, for which the traditionally used NPL ratio is not available.

… which is indicating higher credit risk for the banking sector on a consolidated basis

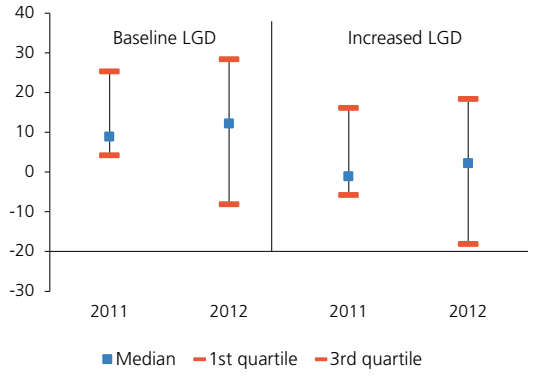
At the end of 2012, the ratio of impaired loans to total client loans for the banking sector on a solo basis was 8.5%, thus exceeding the NPL ratio by 2.5 pp (see Chart IV.7). However, the dynamics of the two indicators have been similar in recent years. The higher value of impaired loans compared to NPLs is partly due to the fact that impaired loans also include loans classified as watch loans and in some cases also those classified as standard loans, and neither of these categories is a component of NPLs.[9] If other financial institutions forming a regulated consolidated group (RCG)[10] with the reporting bank are included, the share of impaired loans on a consolidated basis increases to 9.7%, indicating higher credit risk in the balance sheets of financial corporations within RCGs compared to the credit risk of banks on a solo basis.

The credit risk associated with off-balance-sheet items increased slightly and may not be sufficiently covered by reserves

The economic contraction in 2012 was also reflected in the banking sector's off-balance-sheet transactions, which for banks also represent exposures associated with credit risk. Guarantees to legal entities and individual entrepreneurs fell moderately to CZK 209 billion at the end of 2012, while the volume of "risky" guarantees, i.e. guarantees given by a bank to clients who get into default,[11] rose by CZK 0.6 billion year on year to CZK 4.9 billion (see Chart IV.8). If this risk were to materialise in full, the reserves of CZK 4.4 billion would not be sufficient to cover the losses on these risky guarantees.[12] Moreover, the analytical concept of risky guarantees may underestimate the risks to some extent, as risky guarantees as defined exclude risky clients that did not have bank loans in the given period.

CHART IV.6

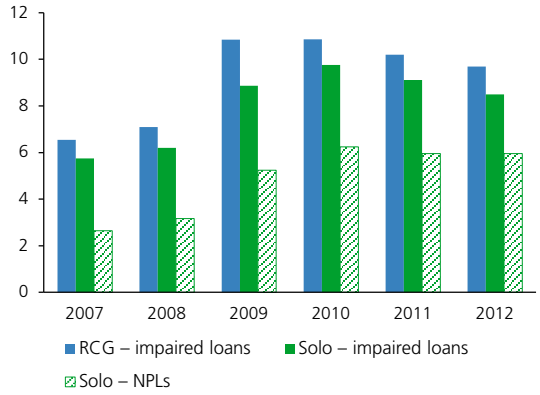
Differences between actual and required level of NPL coverage by provisions
(pp; for the additional stress 10 pp was added to the LGD)



Source: CNB

CHART IV.7

Quality of client loans on a consolidated (RCG) and solo basis
(as % of total client loans)



Source: CNB
Note: RCG = regulated consolidated group.

9 Standard loans can increase the amount of impaired loans if a bank uses the portfolio approach to assessing impairment for a part of its loan portfolio. Claims on sectors that are developing adversely can serve as an example. Provisions can be created for these claims as a whole even though the individual claims have yet to show any signs of impairment, are being duly repaid, and are therefore classed as standard.

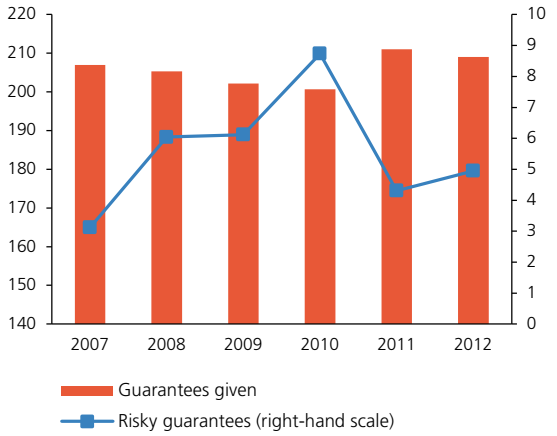
10 In addition to a parent bank group, a financial holding entity group or a mixed-activity holding entity group can be a consolidated group. A consolidated group consists of a parent undertaking and its subsidiaries and affiliates. A regulated consolidated group (RCG) is a consolidated group exclusive mainly of non-financial entities (including ancillary services undertakings), insurance and reinsurance companies and affiliates that are not jointly managed ventures. An RCG is thus a subset of a consolidated group and is subject to the prudential rules (see Act No. 21/1992 Coll., on Banks, and Decree No. 123/2007 Coll., on prudential rules for banks, credit unions and investment firms).

11 Risky guarantees are defined as volume of guarantees given to clients who have non-performing loans with the given bank or another bank Besides the probability of having to honour a guarantee to a third party, the bank's expected loss from the resulting balance-sheet claim on the client also increases in the case of such guarantees if the payment under the guarantee was due to bankruptcy of the client (see also FSR 2011/2012, pp. 63–64).

12 This means the amount of reserves created for loan commitments and guarantees given. Information about reserves for guarantees given only is not currently available at the aggregate level.

CHART IV.8

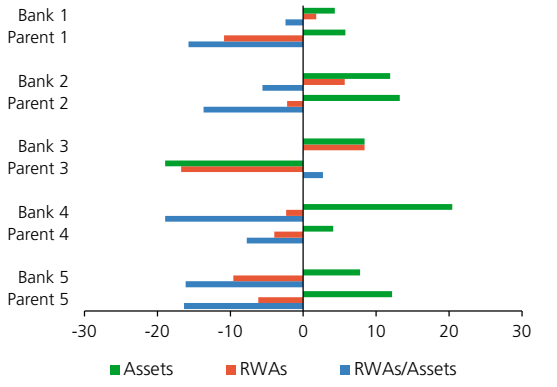
Risky guarantees
(CZK billions; legal entities and individual entrepreneurs)



Source: CNB
Note: Risky guarantees = volume of guarantees given to clients who have non-performing loans with the given bank or another bank.

CHART IV.9

Changes in assets and risk-weighted assets of selected Czech banks and their parents
(pp; change between end-2010 and end-2012)



Source: Bankscope, banks' mandatory information disclosures

The capital adequacy of banks may increase as a result of risk weight optimisation…

Risk weights and risk-weighted assets (RWAs) are important pieces of information in the assessment of the riskiness of banks' portfolios.[13] The EBA recommendation to increase the capital of European banks to 9% of Core Tier 1 by June 2012 sparked a debate at the European level about the extent to which banks will employ RWA optimisation (i.e. adjustment of the risk profile of their portfolios) to achieve a higher capital adequacy ratio. RWA optimisation comes in two forms: "desirable" and "undesirable". In the context of capital adequacy increases, moving assets to less risky activities can be regarded as "desirable". The main "undesirable" form of RWA optimisation is the recalibration of existing models for calculating risk parameters to reduce RWAs without a corresponding reduction in the real riskiness of the portfolio.

… which may have occurred in some Czech banks…

At the aggregate level, the overall risk weights in the Czech Republic decreased from 44.8% at the end of 2010 to 42.2% at the end of 2012.[14] For some banks, this may have been motivated by their parent banks, which had to increase their capital adequacy ratios in the wake of the EBA recommendation. A comparison of five selected Czech banks and their parent companies in the area of RWAs and total assets between the end of 2010 and the end of 2012 indicates such a link (see Chart IV.9). In that period, the risk weights – calculated as the ratio of risk-weighted assets to total assets – either decreased or were unchanged in all the Czech banks and their parents under review. The asset growth in banks 1, 2 and 3 was accompanied by at least a partial increase in RWAs, while banks 4 and 5 saw a decline in RWAs despite growth in assets. In addition, the dynamics of both RWAs and total assets in the latter two banks do not differ qualitatively from those of their parent banks, which were striving to increase their capital adequacy ratios to comply with the EBA recommendation.

… but the impacts of undesirable optimisation of risk weights by domestic banks are limited

A comparison of the risk weights of Czech banks reveals that they differ widely from bank to bank, even within relatively homogeneous credit segments.[15] These differences can be explained by the different strategies of different banks, as represented, for example, by a preference for selected market segments, by average loan size or by loan maturity. However, the models chosen and the data used to estimate risk

13 Risk weights are defined as the ratio of risk-weighted assets (RWAs) to exposure at default (EAD). Total assets were used as a proxy for EAD to simplify the analysis.
14 Around half of this decrease was caused by growth in the share of exposures to government bonds with a zero risk weight.
15 Estimates were made on a sample of banks with a total market share of more than 86% of the credit market. Large, small and medium-sized enterprises and specialised credit exposures were studied in the corporate portfolio, and sole traders, loans for house purchase, consumer credit and other loans were analysed in the household sector.

parameters in the IRB regime, and thus the bank's search for a "more favourable" model calibration (i.e. "undesirable" RWA optimisation), may also play a role.

To assess the impact of potential "undesirable" RWA optimisation, the current capital adequacy of the individual banks was estimated using the (higher) risk weights as of the end of 2010, i.e. the period before capital was increased in line with the EBA recommendation. The capital adequacy ratio calculated in this way would be 14.9% for the sector as a whole and would thus be only 1.6 pp lower than the current level. This suggests that even if some Czech banks were to engage in undesirable RWA optimisation, it would have only minor impacts on the capital adequacy of the banking sector as a whole.

The concentration of government bonds in banks' balance sheets is increasing

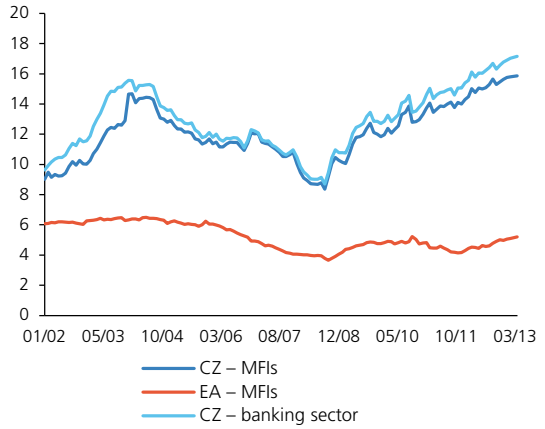
The share of Czech government bonds in the banking sector's balance sheets continued to rise in 2012 – from 15.1% in 2011 to 16.8% in 2012. These values far exceed the figure for the euro area, where government bonds issued by euro area countries accounted for 5% of the balance sheet of monetary financial institutions excluding central banks at the end of 2012 (see Chart IV.10). Domestic banks are motivated to hold resident government bonds by the current regulations governing the calculation of capital adequacy and by the option of using these securities as collateral in the CNB's liquidity-providing repo operations in the event of a liquidity shortage. The concentration of domestic banks' portfolios on the government as a debtor is continuing to strengthen the links between the banking and government sectors (the Czech banking sector holds about 44% of total government debt) and may strengthen the relationship between financial and fiscal stability in the Czech Republic (see the thematic article *Fiscal Sustainability and Financial Stability* in this Report). Possible adverse fiscal policy developments in the future might influence the pricing of Czech government debt by investors and negatively affect banks with higher concentrations of Czech government bonds in their portfolios.

The banking sector has sufficient capital adequacy and high-quality capital

The Czech banking sector currently has around CZK 320 billion of total regulatory capital at its disposal (its capital adequacy ratio was 16.4% in 2013 Q1). It is also ready for the introduction of the new CRD IV capital regulations, as all banks are compliant with the minimum Tier 1 capital ratio of 8%, which for the Czech banking sector is essentially the same as the new Common Equity Tier 1 capital requirement (see Chart IV.11). However, it is essential in the current situation that banks maintain a sufficient capital buffer against possible future adverse developments stemming from the still elevated risk level and the deteriorating prospects for profitability. Once the CRD IV rules are approved, it will be possible to further enhance the banking sector's capital adequacy in the years ahead by using capital buffers derived from the systemic importance of the bank in the domestic sector (see the thematic article *An Additional Capital Requirement Based on the*

CHART IV.10

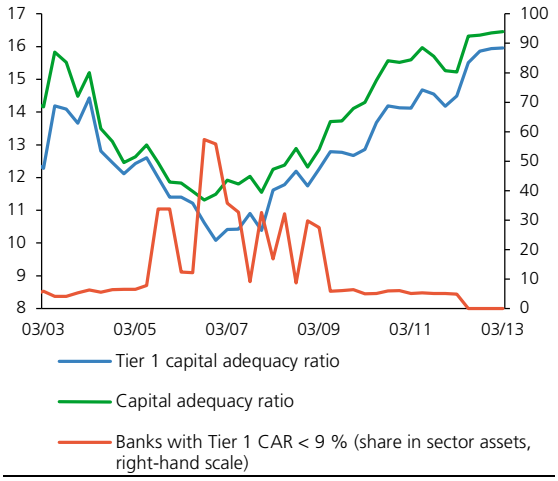
Share of bonds issued by domestic governments in the balance sheet of MFIs excluding central banks
(%; MFIs excluding central banks comprise credit institutions and money market funds)



Source: CNB, ECB

CHART IV.11

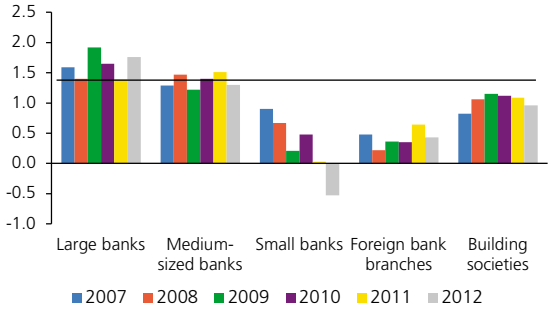
Capital adequacy
(%)



Source: CNB
Note: Assets of sector = assets of banks excluding branches of foreign banks.

CHART IV.12

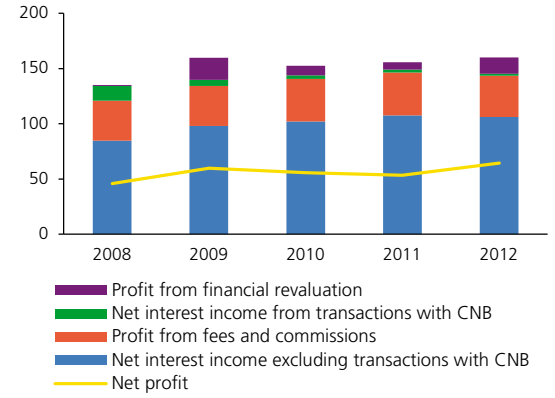
Return on assets (RoA)
(%)



Source: CNB
Note: The classification of banks by asset size relates to the year for which the RoA value is reported. The horizontal line depicts the RoA value for the banking sector as a whole for 2012.

CHART IV.13

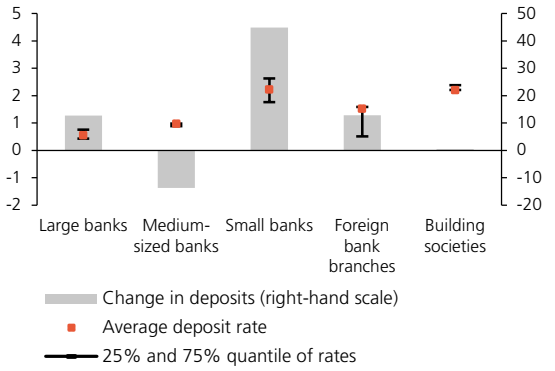
Key components of profit from financial activities
(CZK billions)



Source: CNB

CHART IV.14

Changes in household deposits in 2012 and average interest rates
(rates in %; deposits in CZK billions)



Source: CNB
Note: Bank size classification by asset size as of 31 December 2011.

Domestic Systemic Importance of a Bank in this Report) or by setting a countercyclical capital buffer (see section 5.4).

Although the profitability of the banking sector remains high…

The profitability of the banking sector in terms of RoA remains high and significantly exceeds the euro area average (1.4% versus 0.02% at the end of 2012). Nevertheless, there are large differences across the segments of the banking sector. Large and medium-sized banks show higher profitability, while foreign bank branches and small banks show the lowest. The small banks segment recorded an RoA of -0.5% in 2012 (see Chart IV.12). The low performance of these segments (in terms of RoA) is partly due to the entry of new institutions onto the domestic banking market, as these newcomers generally face higher initial costs and higher fund-raising costs than established banks.

… it can be expected to decline in the years ahead

The banking sector's net profit of CZK 64 billion for 2012 represents a year-on-year rise of CZK 11 billion (see Chart IV.13). This rise was due to profits from revaluation and especially to base effects, as some banks had recognised the impairment of Greek bonds in 2011. Net of this effect, the banking sector would have shown no major year-on-year changes in profitability. By contrast, the main components of profit – interest profit and profit from fees and commissions – recorded year-on-year (albeit slight) declines for the first time since the start of the crisis. This decline can be expected to continue in the years ahead owing to falling interest rate margins due to increasing competition on the bank loans and deposits market and also due to falling payment-intermediation profits amid declining economic activity. The *Baseline Scenario* expects interest profit to decline by around 5% year on year over the scenario horizon.

The banking sector is facing growing competition on the deposit market, whose volume expanded …

The decline in the banking sector's profitability is also linked with the entry of new banks competing for client deposits. The average interest rate offered by small banks is around 1.5% higher than that offered by large and medium-sized banks. As a result, small banks managed to increase the amount of household deposits they received by almost CZK 45 billion during 2012 (see Chart IV.14). Total deposits of households in the Czech banking sector rose by almost CZK 56 billion in 2012. The client deposits of all residents increased by around CZK 192 billion year on year.

… and further improved the sector's liquidity indicators

The banking sector has long had a good liquidity position, with a large excess of stable client deposits over client loans (see Chart IV.15). Given the above-mentioned year-on-year growth in deposits, the ratio of client deposits to client loans also increased – from 126% in 2011 to 132% in 2012. This further improved the sector's liquidity indicators. The excess of deposits over loans is enabling banks to create a buffer of quick assets, which made up 29% of banking sector assets at the end of 2013 and could be used if a liquidity shock were to occur. The liquidity buffer

consists mainly of cash and claims on the CNB, claims on banks repayable on demand, and Czech government bonds.

The Czech banking sector is independent of external sources of funding

Owing to a high level of deposits from residents, the Czech banking sector as a whole is independent of external sources of funding. Its positive net external position increased by more than CZK 100 billion compared to the end of 2011, accounting for 7.6% of GDP at the end of 2012. Given the sector's ownership structure, the possible risks associated with relations between domestic banks and their foreign parent companies should also not be ignored, especially in a situation where the main indicators of foreign parent banks are indicating broadly worse results than those of their subsidiaries (see Table IV.2).

As for the links between domestic banks and their parent groups, the trends have been generally favourable in recent months. Following regulatory changes made in 2012,[16] the total gross exposure of the five largest domestic banks to their parent groups shrank from 60.4% of regulatory capital at the end of 2011 to 49.1% in 2012 (see Chart IV.16). The adjusted exposure, which additionally takes into account liabilities in the form of loans and deposits accepted from foreign parent banks, is meanwhile broadly constant over time. This suggests that the aggregate interconnectedness between the assets and liabilities sides of the balance sheets of Czech banks and their foreign parent banks has decreased. On the other hand, there are major differences in the exposures of the five largest banks to their parent groups – the largest total gross exposure is 69% and the smallest 21% of the regulatory capital of the bank. Moreover, these exposures tend to be unsecured.

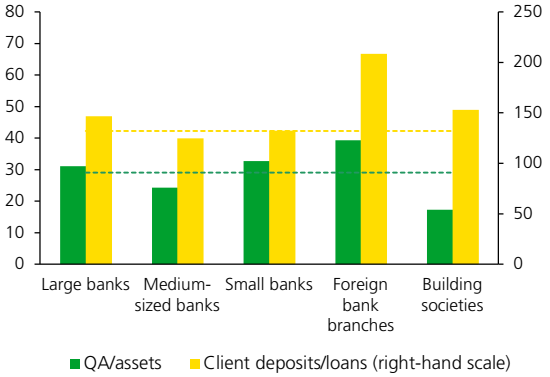
BOX 1 – THE BANKING UNION

In response to the fiscal debt crisis, the June 2012 euro area summit approved a plan to strengthen the euro area by creating a banking union. Although the Czech Republic is not a euro area member state, this plan impinges significantly on the stability of its financial system and the functioning of its financial market. In addition, the banking union project may have unintended

16 An amendment to CNB Decree No. 123/2007 Coll., stipulating the prudential rules for banks, credit unions and investment firms, in force since 1 July 2012, reduced the size of the exposure that can be excluded from the investment portfolio exposure of an institution to its foreign parent group from 75% to 50%. With the regulatory limit for investment portfolio exposure kept at 25% of capital, this decline implies a decrease in the maximum possible investment portfolio exposure (net of provisions, reserves and collateral) to the foreign parent group from the original 100% to 50% of capital.

CHART IV.15

Liquidity situation in the banking sector
(%; QA = quick assets, as of December 2012)



Source: CNB
Note: The value for medium-sized banks excludes Hypoteční banka and Česká exportní banka owing to their specific funding models. The dashed lines denote values for the banking sector. Loans and deposits include both residents and non-residents.

TABLE IV.2

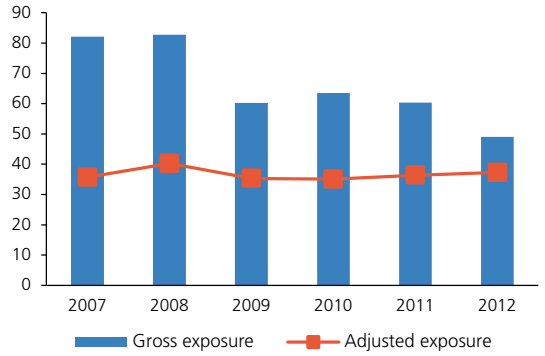
Situation of the parent groups of Czech banks
(data as of 31 December 2012; consolidated data)

	Erste Group	KBC Group	Société Générale	UniCredit Group	Raiffeisen Bank
Total assets (EUR bn)					
2012	214	257	1251	927	136
2011	210	285	1181	927	147
Net profit (% of assets)					
2012	0.3	0.2	0.1	0.2	0.5
2011	-0.3	0.0	0.2	-1.0	0.7
Impairment losses (% of assets)					
2012	0.9	0.4	0.3	1.0	0.7
2011	1.1	0.5	0.3	0.6	0.7
NPLs (%)					
2012	9.2	8.1	7.2	11.9	9.2
2011	8.5	7.6	6.9	10.4	9.0
NPL coverage ratio (%)					
2012	63.2	45.2	58.8	57.7	71.5
2011	61.7	46.7	60.5	57.9	65.5
Risk costs (bp)					
2012	150	81	91	176	121
2011	168	92	76	106	130
Capital adequacy (Core Tier 1 ratio, %)					
2012	11.2	11.7	10.7	10.8	10.7
2011	9.4	10.6	9.0	8.4	9.0

Source: Bankscope

CHART IV.16

Gross and adjusted exposure to parent groups
(%; exposure in relation to regulatory capital)



Source: CNB
Note: The chart shows the aggregate exposure of the five largest banks in the Czech Republic, which have foreign parents in the euro area. Gross exposure consists mainly of claims in the form of loans provided to the parent group and claims arising from derivatives transactions and other off-balance-sheet items in the investment and trading portfolios. Adjusted exposure = gross exposure minus liabilities in the form of deposits and loans accepted from foreign parent banks. The values in the chart do not reflect any collateralisation.

consequences for the financial stability of the euro area and the EU as a whole. This box describes the specific risks of the banking union for the Czech financial sector and its possible adverse impacts on financial stability in the EU.

The banking union project is based on three main pillars: (i) the ECB-based Single Supervisory Mechanism, (ii) the single European Deposit Guarantee Scheme, and (iii) the single European Resolution Scheme. The banking union must be assessed in the context of all these pillars. In the first phase attention was focused primarily on the Single Supervisory Mechanism. However, the key item of the proposed new system is the mandatory borrowing facility between national insurance schemes for financing banks in distress, i.e. the fund established within the single resolution scheme. This will be paid for primarily by contributions from banks and is meant to assist in financing resolution measures for banks in distress.

Since most banks active in the Czech Republic are controlled by parent banks from euro area countries, the banking union may have a major impact on the Czech banking sector. The first reason is that EU-level supervision will be greatly strengthened, to the detriment of the powers of national supervisory authorities. The ECB will perform consolidated supervision of parent companies of credit institutions having their registered offices in a participating Member State and will also be involved in consolidated supervision (including in supervisory colleges) of parent companies having their registered offices outside the participating Member States.

The second source of risks is the promotion of the concept of group interest and solidarity of intra-group support, i.e. the prioritisation of the interests of the entire bank group, possibly even to the detriment of its individual autonomous members. Given the importance of banks for the Czech economy and the high concentration of the Czech banking sector, this concept implies major risks for the Czech Republic. First, it creates an autonomous channel for problems in foreign parent banks to spread to the balance sheets of Czech banks and to the macroeconomy via their effects on the exchange rate and the interest rate level. The plans create an environment in which a crisis in one major bank or group could easily spill over into a previously sound sector with no chance of effective defence. One of the lessons of the financial crisis is that large, complex, cross-border bank groups can become a strong source of systemic risk. Regulatory separation of the different segments of their business (product lines and regional activities) act as a barrier to the transmission of such risk.

Large cross-border banks are naturally interested in centralised capital and liquidity management. The public and the authorities, by contrast, are interested in financial market stability. Banking is by its nature primarily a local activity based on banks' ability to correctly assess specific information about their customers. Financial segmentation and risk containment generate costs for cross-border institutions. These costs, however, can be regarded as a relatively small price to pay for financial stability. A reduced degree of uncertainty about the balance-sheet quality and structure of the individual members of bank groups represents a barrier to contagion. It is thus vital for the CNB and for the resilience of the Czech banking sector to maintain effective control of liquidity and capital movements within bank groups. This means the right of supervisors to prevent disadvantageous and destabilising transfers of liquidity and assets from domestic bank and risks under the banner of the group interest, not operations based on standard business activities subject to compliance with prudential rules.

Motivating parent banks to convert large and possibly also systemically important subsidiaries into legally dependent branches would be particularly risky. Subsidiary banks are currently supervised by the national regulator, which checks their capitalisation, liquidity and overall risk profile. The conversion of a subsidiary bank into a branch would mean the transfer of most of these powers to the home supervisor. This would result in all the risks of the entire parent group and of the foreign branch operating in the Czech Republic being pooled, without the CNB – as the host supervisor – being able to prevent any negative consequences of such pooling.[17] The conversion of subsidiaries into branches would also be risky in the Czech Republic because the subsidiaries are currently self-sufficient. They have large capital and liquidity buffers which contribute significantly to public and investor confidence in their stability and facilitate smooth funding of the private and public sectors. This source of confidence and stability might be significantly weakened if they were converted into branches. This, in turn, would increase their susceptibility to financial contagion. For systemically important banks, this would represent a considerable source of risk for the whole economy. The conversion of subsidiaries into branches would also probably

17 These risks are not hypothetical. Czech banks traditionally provide loans from domestic sources and mainly in the domestic currency. However, parent banks in some other EU countries provided house purchase loans via central sources in foreign currencies, thereby fostering a property market bubble which, when it burst, had a large impact on the financial stability and real economy of the countries concerned. National authorities had minimal powers to stop this.

TABLE IV.3

Selected indicators of building societies as compared to other banks
(%; end-2011 and end-2012 data)

	2011		2012	
	Building societies	Banks excl. building societies	Building societies	Banks excl. building societies
Average interest rate on client loans for house purchase (1)	5.1	5.1	5.0	4.7
Average interest rate on household deposits (2)	2.2	0.9	2.2	0.9
Interest margin (1)–(2)	2.8	4.2	2.8	3.8
Client deposits/loans (excluding general government)	147	112	148	115
House-purchase loan NPL ratio	2.7	3.5	2.9	3.5
Quick assets/total assets	15.2	28.3	17.3	30.4
Coverage of NPLs by provisions	45.1	49.2	49.0	49.4
Tier 1 CAR	14.1	14.2	16.5	15.9
RoE	23.1	18.6	19.1	20.8
RoA	1.1	1.2	0.9	1.4
Share of sector in new loans for house purchase	25.1	74.9	22.7	77.3
Share of sector in loans for house purchase	35.1	64.9	32.9	67.1
Share of sector in household deposits	27.6	72.4	26.0	74.0

Source: CNB

foster a potentially risky shift from domestic government debt to government bonds of other countries. Overall, the national authorities' ability to respond adequately to asymmetric shocks and emerging macroeconomic imbalances fostered by imprudent banking sector behaviour would be impaired. It is therefore important for the CNB, as the national supervisor, to retain sufficient powers to enforce financial stability and prevent developments in the financial sector from having negative impacts on the real economy.

Building societies are continuing to lose market share…

Building societies are continuing to lose market share to other banks. Their share in total loans for house purchase was less than 33% at the end of 2012. The falling trend is even more visible in new loans for house purchase – while in 2010 building societies had accounted for 35% of new loans, in 2011 their share was 25% and in 2012 it was less than 23%. This trend in the building society segment is partly linked with uncertainty surrounding the future parameters of the building savings product and the related state support.[18] However, it is mostly due to the fact that banks are offering more attractive house purchase loans at lower interest rates, to which building societies can respond to only a limited extent owing to the restricted flexibility of interest rates on building savings deposits. Some building societies are therefore depositing their excess liquidity on the interbank market. As a result, claims on domestic parent banks account for CZK 55 billion (almost 90% of total claims on credit institutions).

… and have a lower share of quick assets than other banks

The building society segment is comparable with other banks in terms of capital adequacy, profitability and NPL coverage. However, it has worse liquidity because of the specific business model of building societies. Although the share of quick assets in total assets rose by 2.1 pp year on year in 2012, it remains much lower than in other banks (see Table IV.3).

Credit unions remain very risky…

Although credit unions still represent only a tiny segment of the financial sector, with a share of less than 0.7% of total assets (see line FS.4 in the *Table of Indicators*), its balance-sheet total has more than doubled in the last two years, mainly as a result of higher rates on deposits compared to banks. Despite a relative year-on-year improvement in some aggregate risk indicators and the NPL coverage ratio, these indicators worsened

18 In mid-2010, the Czech Parliament approved a reduction in state support from CZK 3,000/CZK 4,500 (depending on contract type) to a maximum of CZK 2,000 a year. A proposal to make further changes to the parameters of the building savings product, for example by introducing saving limited by purpose and allowing other banks to offer building savings schemes, is currently being considered.

substantially in 2013 Q1.[19] Moreover, significant differences continue to exist across credit unions. For example, four out of the total of 13 credit unions, representing around 50% of the assets in the segment, have NPL ratios exceeding 15%. Similarly, several institutions (46% of the segment's assets) had NPL coverage ratios significantly below the segment average of 16.4% at the end of 2012. Moreover, this average itself is much lower that that of banks (see Table IV.4).

… and some institutions need to make their business more prudent

Credit unions also exhibit a relatively high concentration of loans provided. In the majority of institutions (accounting for more than 90% of the segment's assets), the sum of the five largest exposures is close to or above their total capital. Any repayment problems among these important clients could therefore jeopardise the stability of credit unions. Maintaining relatively high interest rates on deposits in the current period of low rates may also be a risk, creating an incentive to grant risky loans at high interest rates. Negative events in the credit union segment, given its size, would not threaten the stability of the financial sector as a whole, but they could undermine the high degree of confidence in all credit institutions. In 2013 Q2, the CNB prohibited two credit unions from accepting deposits from the public and limited their other activities. The long-term efforts to stabilise the segment also include a bill discussed by the Czech government in May 2013 which should lead to some reorganisation of the credit unions and thereby prevent the emergence of any more risks (for example, a credit union with total assets exceeding CZK 5 billion would have to be converted into a bank). The CNB will continue to pay increased attention to the situation in the credit union segment and submit suggestions for regulatory changes.

Insurance companies and pension funds have benefited from financial market developments…

The legislation regulating asset placement in the insurance companies and pension funds sector requires funds accepted to be managed with prudence and professional care. The investment strategies of Czech insurers and pension funds are therefore relatively conservative and their portfolios are dominated by government bonds, with a high share of Czech government bonds. The current regulations contain no limits on investment in bonds issued by governments or central banks of OECD countries. This may lead to a risk of portfolio concentration on a single debtor. Owing to a decline in Czech bond yields during 2012, insurance companies and pension funds recorded a rise in gains from the revaluation of these instruments to fair value. This is also linked with the fact that a large proportion of these securities are marked to market in both sectors (see Chart IV.17). In future, this situation may pose a risk

19 The Tier 1 capital adequacy ratio in the credit union segment fell to 11.7% at the end of 2013 Q1. The coverage ratio decreased further to 14.9% and the NPL ratio rose to 13.2%. In addition, this high figure is notionally decreased by a large volume of new loans, which "dilutes" the NPL ratio.

TABLE IV.4

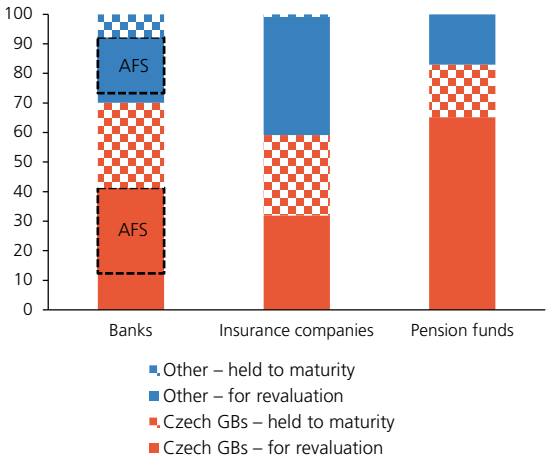
Selected indicators of credit unions as compared to banks
(%; end-2011 and end-2012 data; credit unions active as of 31 December 2012)

	2011		2012	
	Credit unions	Banks	Credit unions	Banks
Average interest rate on client loans (1)	7.9	5.1	7.4	4.8
Average interest rate on client deposits (2)	2.9	1.1	2.9	1.1
Interest margin (1)–(2)	4.9	4.0	4.4	3.8
Client deposits/loans (excluding general government)	126	117	118	120
Client NPL ratio	12.4	6.2	9.9	6.2
Quick assets/total assets	12.9	26.9	14.3	29.1
Coverage of NPLs with provisions	12.9	49.0	16.4	49.4
Tier 1 CAR	11.7	14.2	12.3	15.9
RoE	6.5	19.3	7.5	21.4
RoA	0.6	1.2	0.8	1.4
Share of sector in client loans	0.8	99.1	1.2	98.8
Share of sector in client deposits	0.9	99.1	1.2	98.8

Source: CNB
Note: The year-on-year comparison excludes Unibon, whose licence was revoked in March 2012. The accounting period is not unified across the credit union segment, so the relevant data were annualised for some institutions.

CHART IV.17

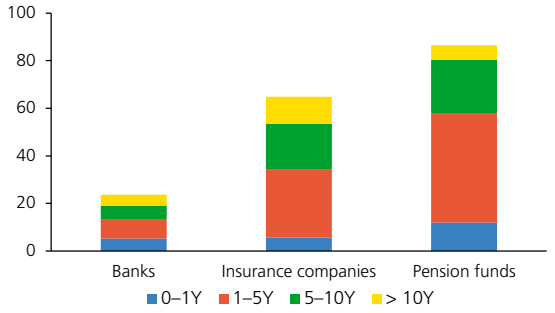
Breakdown of the bond portfolio by sector and valuation method
(%; share in bonds; as of 31 December 2012)



Source: CNB
Note: AFS denotes financial assets classed as "available for sale". The figures for the insurance sector include financial placement of unit-linked insurance.

CHART IV.18

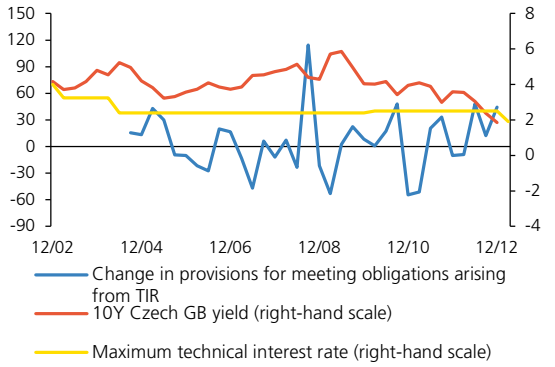
Shares of bonds in the total assets of individual sectors by maturity
(%; share in assets; as of 31 December 2012)



Source: CNB
Note: The figures for the insurance sector include financial placement of unit-linked insurance.

CHART IV.19

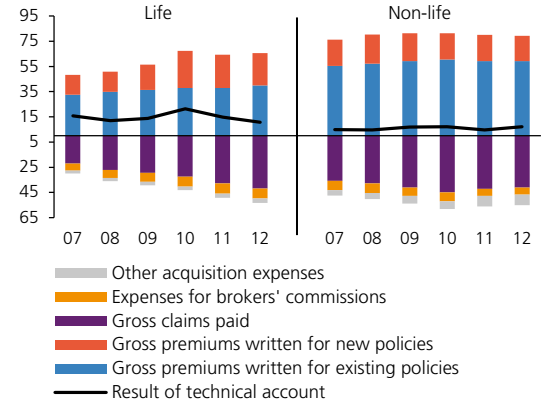
Maximum technical interest rate and provisions for meeting the obligations arising from the technical interest rate
(%)



Source: CNB

CHART IV.20

Key financial indicators for the insurance sector
(CZK billions)



Source: CNB

of a decline in the market prices of the securities held, with an adverse impact on profitability, if the financial market situation suddenly changes for the worse.

… but an excessively long period of low yields may impair their financial results

Although debt securities with long maturities dominate the financial asset placement of pension funds and life insurers (see Chart IV.18), both sectors are also characterised by long liability maturity, which usually exceeds asset maturity. The current low rates on debt securities are significantly limiting the ability of pension funds to generate returns that outpace inflation, and this, in turn, is making them less attractive to households as a form of saving. Life insurance companies face a similar problem, especially in the case of policies containing guaranteed yields, which are typical of traditional life insurance products. The low or even negative differential between market and guaranteed nominal returns is reducing the scope for generating profit on these products. An excessively long period of low yields on debt securities therefore implies a risk that both sectors will be motivated to invest in more risky assets or offer products without guaranteed returns and carry on unconventional activities.

The adverse effects of the financial cycle are being partly dampened by regulations

Thanks to strict regulations, however, the risk associated with this "search for yield" is not as relevant in the Czech pension fund sector as it is in some other European countries. In the case of insurance companies, the impact of the financial cycle on their finances is reduced by the option of valuing government bonds at amortised cost on the asset side, in combination with the parameters for creating statutory technical provisions (whose level is set using the technical interest rate) on the liabilities side. In the case of changes in the financial conditions[20] regular liability adequacy testing is reflected in the creation or release of additional reserves (see Chart IV.19). Another instrument contained in the existing regulations is a ceiling on guaranteed returns (the technical interest rate). The upper limit on the technical interest rate is 60% of the average yield on Czech government bonds maturing during the last 36 months (see Chart IV.19).[21] This limit partly reduces the competitive pressure to offer excessively high guaranteed returns on traditional life insurance products and hence also the risk associated with generating a guaranteed investment return. On the other hand, it makes traditional life insurance less attractive to households.

20 The sufficiency of technical provisions and the potential creation of additional provisions are affected by a number of other variables, such as a rising survival period.
21 The maximum technical interest rate is regulated by Decree No. 434/2009 Coll.

However, the overall trend in the insurance market is not very favourable

Despite the relatively stable and high average profitability of the sector (see line NI.6 in the *Table of Indicators*), the outlook for the insurance market is rather unfavourable, reflecting the evolution of the real economy. In life insurance, premiums written are stagnating, mainly as a result of a fall in lump-sum premium payments. Moreover, this stagnation is being accompanied by a rise in claim settlement costs, due mainly to policy survival. The slight downward trend in premiums written in non-life insurance is continuing (see Chart IV.20). This trend is most pronounced in vehicle liability insurance and vehicle accident insurance. By contrast, the financial results of non-life insurers are being favourably affected by a fall in claim settlement costs in insurance against damage to or loss of property, as no major natural disasters have occurred in the last two years.

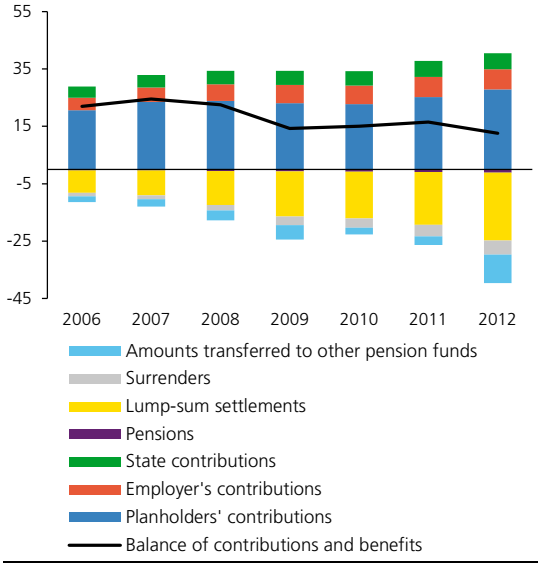
The pension fund sector has seen a surge in demand

The pension fund sector has been significantly affected by the pension system reform approved in 2012.[22] The legislative rules applying to the investment policies of pension funds (now pension management companies) were changed under amendments to the third pillar. The original savings are now managed in transformed funds maintaining the original investment conditions unless the current planholder chooses otherwise. New planholders may choose from four types of funds differing in investment strategy.

The option of retaining the original supplementary pension insurance conditions (including a guaranteed minimum zero return) associated with joining the third pillar before the pension reform took effect led to record-high interest in pension schemes in 2012.[23] The inflow of new planholders was reflected in a rise in contributions (see Chart IV.21). Benefits also recorded a further year-on-year increase. The number of planholders qualifying for a pension is also continuing to rise, in line with the demographic trend and the structure of the Czech population.[24] Pensions paid out in regular instalments are recording modest growth, but planholders still most often opt for lump-sum settlements, under which they receive 50% of their savings. Continuing extraordinary

CHART IV.21

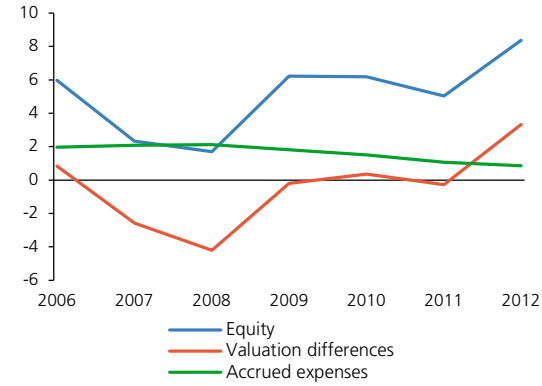
Pension fund contributions and benefits
(CZK billions)



Source: CNB

CHART IV.22

Pension fund capitalisation, valuation differences and accrued expenses
(% of assets)



Source: CNB

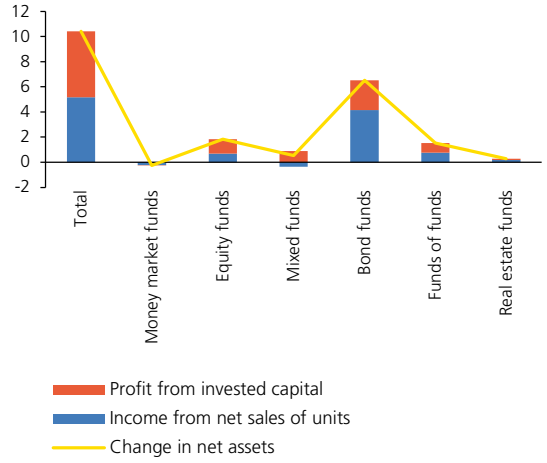
22 The reform of the pension system took effect on 1 January 2013. In addition to the existing first pillar (the pay-as-you-go system), it introduced a new second pillar in the form of fund saving. The third pillar – allowing voluntary pension schemes – was amended at the same time (for details see Box 5 in FSR 2011/2012).

23 An additional change in the conditions relates to the possibility of early termination of pension schemes. This can occur after 24 months of saving for new policies, while older policies contain a limit of 12 months. Changes were also made to the conditions for lump-sum pension payments, which, under the new policies, planholders may apply for only after reaching retirement age. Moreover, the option to take out 50% of savings after 15 years of saving (the service pension option) was abolished.

24 In this context, the parameters of entitlement to pension scheme benefits and the conditions of payment thereof are also a factor. According to the original conditions, planholders are entitled to lump-sum settlement after 15 years of saving regardless of their age. Since 2009, this entitlement has progressively been exercised for many policies arranged in the initial years following the launch of the supplementary pension insurance scheme in 1994.

CHART IV.23

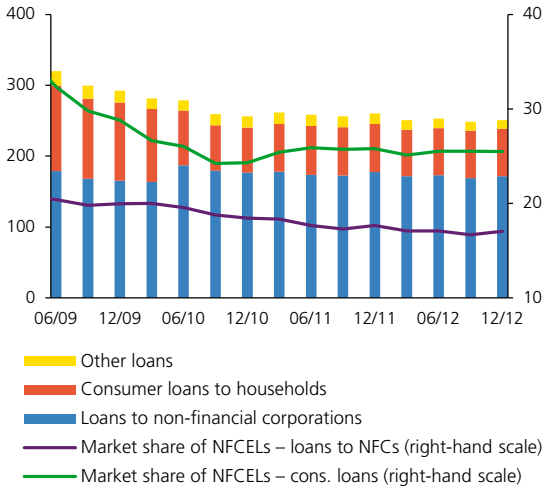
Decomposition of changes in the net assets of open-ended mutual funds intended for the public
(CZK billions; for 2012)



Source: CNB

CHART IV.24

Loans provided by non-bank financial corporations engaged in lending
(CZK billions, %)



Source: CNB
Note: Market share of total loans provided by banks and non-bank financial corporations engaged in lending to residents. Other loans comprise loans to households other than consumer loans, loans to non-residents and loans without a specified sector.

growth in migrations between funds is also partly causing growth in benefits. These migrations stem from the pension reform and from planholders' efforts to switch funds based on past performance.

The pension reform has led to a rise in the registered capital of pension funds

The pension reform also separated the management of planholder funds from the management of the fund itself. This has been reflected in a rise in registered capital (of almost CZK 1 billion). Together with a marked increase in valuation differences, this has resulted in a significant pick-up in pension funds' equity (see Chart IV.22). In 2007–2009, as a result of financial market developments, valuation differences generated accounting losses, to which pension funds responded by increasing the portfolio share of government bonds held to maturity.[25] Last year, however, pension funds reduced this part of their portfolios. This reflects favourable market developments generating accounting gains due to revaluation as well as pension funds' efforts to avoid possible liquidity problems associated with expected increased migrations between funds due to the pension reform. As in previous years, pension funds continued to release accrued expenses in 2012.

Collective investment funds recorded increased sales of units

Public interest in investing via collective investment funds (CIFs) increased in 2012 compared to the previous year. This was reflected in positive net sales of units (see Chart IV.23). Overall, CIFs generated a profit of CZK 6.7 billion in 2012. This represents a major improvement on the loss of almost CZK 6 billion recorded in 2011. Bond funds recorded the highest unit sale income thanks to higher rates of return compared to other funds stemming from a decline in bond yields and a rise in bond prices. However, as bond yields are currently at historical lows, similar results cannot be expected next year. At the same time, the current period of low interest rates is not giving money market funds investing in T-bills and short-term bonds much scope for generating investment returns. For this reason, the outflow from these funds observed in previous years continued into 2012.

Non-bank financial corporations engaged in lending recorded a slight fall in loans…

Total loans provided by non-bank financial corporations engaged in lending (NFCELs) declined by almost CZK 10 billion in 2012, to CZK 256.7 billion at the end of 2012 (see Chart IV.24). This decline was due in almost equal measure to a decrease in loans to households and in loans to non-financial corporations. Leasing companies account for almost 90% of loans provided by NFCELs. These companies are

25 The legislation allows pension funds to hold up to 30% of their assets in government bonds issued in OECD countries to maturity, and therefore recognise them at amortised cost.

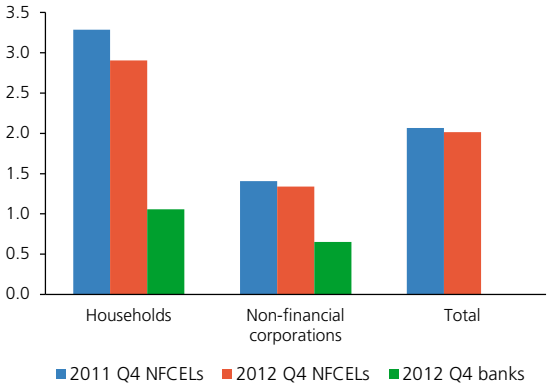
increasingly shifting from financial leasing to operational leasing.[26] Figures from the Czech Leasing and Finance Association confirm that this trend continued into 2012, with operational leasing accounting for 40.5% of the amount financed by new lending (compared to 31.6% in 2011). This change in the nature of leasing companies' activities can be regarded as one of the causes of the continuing decline in the market share of NFCELs in loans to non-financial corporations. The market share of these lenders in consumer credit provided to households remains stable above 25%, despite having fallen in absolute terms in 2012. This is due in part to the drop in consumer credit provided by banks during 2012.

… which recorded no significant changes in riskiness in 2012

Data from the Non-bank Register of Client Information (NRCI) and from the credit register of natural persons maintained by the SOLUS association indicate that credit risk in NFCEL balance sheets fell slightly during the year. This fall pertained mainly to loans to households, for which the three-month default rate declined to 2.9% in 2012 Q4. However, the risk of default remains substantially higher in the NFCEL segment than in the banking sector (see Chart IV.25).

CHART IV.25

3M default rate on loans provided by credit institutions



Source: BRCI, NRCI, SOLUS, CNB
Note: The default rate on loans provided to households by NFCELs is calculated as the average of the data from the NRCI and SOLUS. Only the NRCI is used for loans to non-financial corporations and total loans.

26 Operational leasing allows a movable or immovable item to be used, but unlike in the case of financial leasing there is no transfer of the substantial risks and benefits associated with ownership of the asset. Operational leasing is therefore de facto renting and is not included in the CNB's financial intermediation statistics.

4.2 STRESS TESTS OF BANKS, INSURANCE COMPANIES AND PENSION FUNDS

The stress tests demonstrate that the banking sector remains resilient to adverse scenarios even in a recession. Banks have a large capital buffer which enables them to absorb adverse shocks and maintain the overall capital adequacy sufficiently above the regulatory threshold of 8% even in a very unfavourable scenario. Banks also passed a liquidity stress test. The insurance company sector also showed sufficient resilience to an adverse scenario thanks to its large capital buffer. The pension fund sector remains sensitive to the price volatility of securities holdings, but a capital increase in 2012 enhanced its resilience compared to the previous year.

The stress tests are based on an adverse scenario called *Protracted Depression*, which has been extended to include other sensitivity analyses

The resilience of banks, insurance companies and pension funds was tested in macro-stress tests using a *Baseline Scenario* and a *Protracted Depression* stress scenario, representing a long-lasting and pronounced decline in economic activity in the Czech Republic (see section 2.1). As part of its stress tests, the CNB traditionally extends the stress scenario to include other sensitivity analyses that magnify the impacts of the shocks and illustrate the sectors' resilience to other relevant risks.

The bank stress test methodology has been further refined

While last year the banking sector solvency stress tests were extended to increase the test horizon from two to three years, this year's tests have been refined as regards the satellite models used, which have been re-estimated using the most recent time series. The interbank contagion test has been made slightly tougher and now takes into account total exposures between banks, not only their net exposures. Attention has also been paid to the method for estimating bank profits, which serve as the first buffer for covering potential losses and therefore play a significant role in the overall test results.

In this year's tests, the original model for estimating banks' adjusted operating profit has been extended to include an alternative approach based on the evolution of interest rates. Adjusted operating profit has been divided into interest and non-interest components.[27] While non-interest income and expenses are assumed to be constant for individual banks over the test horizon, interest income and expenses are modelled by projecting average interest rates in the main credit segments, i.e. loans to non-financial corporations, loans for house purchase and consumer credit provided to households, and other loans. Interest rates are estimated as a function of the PRIBOR interbank rate. Deposit rates are

TABLE IV.5

Key variables in the individual scenarios
(averages for given years)

	Actual value	*Baseline Scenario*			*Protracted Depression*		
	2012	2013	2014	2015	2013	2014	2015
Macroeconomic variables							
GDP (y-o-y %)	-1.2	-0.5	1.8	2.8	-2.3	-3.3	-1.4
CZK/EUR exchange rate	25.1	25.6	25.3	25.0	26.5	27.7	27.8
Inflation (%)	3.3	1.7	1.8	1.7	1.7	1.1	-0.8
Unemployment (%)	7.0	7.7	8.0	7.7	7.9	9.2	10.0
Nominal wage growth (%)	2.9	1.2	3.5	3.8	-1.0	-4.3	-2.6
Effective GDP growth in euro area (%)	0.8	0.5	1.6	2.1	-0.1	-0.3	-0.3
Credit growth (%)							
Total	2.4	1.4	2.6	4.4	-1.5	-4.2	-1.6
Corporations	0.9	1.4	4.0	6.1	-2.9	-5.5	-2.5
Households	3.6	1.7	1.6	3.4	-0.3	-3.8	-1.0
Default rate (PD, %)							
Corporations	1.9	2.7	2.5	2.3	3.9	6.4	6.1
Loans for house purchase	3.9	4.3	3.9	3.4	4.9	7.1	6.3
Consumer credit	4.3	4.9	4.6	4.0	5.4	7.8	10.5
Loss given default (LGD, %)							
Corporations	45.0	45.0	45.0	45.0	48.6	55.3	55.2
Loans for house purchase	22.0	22.7	22.8	22.4	30.7	46.4	51.6
Consumer credit	55.0	55.9	57.1	55.9	56.9	65.7	67.2
Asset markets (%)							
3M PRIBOR	1.0	0.3	0.6	1.3	0.5	0.5	0.5
5Y yield	1.5	0.9	1.1	1.9	1.2	1.5	1.6
3M EURIBOR	0.6	0.2	0.4	0.6	0.2	0.1	0.1
5Y EUR yield	0.5	0.3	0.4	0.5	0.3	0.3	0.3
Change in res. property prices	-4.0	-1.6	0.3	1.6	-10.4	-9.9	-0.1
Change in share prices	14.0		-5.0			-25.0	
Banks' earnings							
Adjusted operating profit (y-o-y %)	-5.2	-5.3	-5.0	-2.1	-16.8	-13.8	-7.3

Source: CNB, CNB calculation, BRCI
Note: In contrast to the unemployment rate given in the previous FSR, this year's values correspond to the ILO definition of the general unemployment rate.

27 The non-interest components of adjusted operating profit include administrative expenses, fee and commission income and expenses, amortisation and depreciation, creation of reserves, dividend income and other gains and losses.

obtained by assuming that banks try to maintain a particular margin, i.e. a spread between lending and deposit rates. In contrast to the aggregate model of adjusted operating profit, this approach allows us to configure shocks to various interest rates depending on the assumptions of the scenario.

The *Baseline Scenario* indicates a rise in credit risks and a decline in the sector's profitability

Stress tests of the banking sector are traditionally one of the most important tools for assessing potential risks to the stability of the Czech financial sector as a whole. Particular attention is paid to credit risk, which is the largest risk in the Czech banking sector. The evolution of credit risk is closely linked with developments in the household and corporate sectors. The still unfavourable economic outlook in these sectors is therefore reflected in growth in credit risk in the years ahead (see sections 2.2 and 2.3). The expected default rate in the *Baseline Scenario* remains elevated and increases further compared to 2012 (see Table IV.5). Given the long-standing environment of low interest rates and the increased competition, banks' adjusted operating profit is expected to continue to trend downwards by around 5% a year. Despite this worse outlook for banking sector profitability and growth in credit risks, the banking sector remains resilient over the entire test horizon and has sufficient capital reserves. The sector's aggregate capital adequacy is around 15%, i.e. well above the regulatory limit of 8%. Nevertheless, two banks (representing 1% of the sector's assets) get into a situation of insufficient capital adequacy in the *Baseline Scenario*. This is due to their business models, which the stress test methodology assesses as unsustainable from a longer-term perspective. This implies an adjustment of the banks' business models or an increase in their capital in the future (see Table IV.6, column 1).

The *Protracted Depression* stress scenario would imply a marked rise in credit risk…

In the *Protracted Depression* stress scenario, the combination of a decline in economic activity and external demand, increased unemployment and a drop in real wages would be reflected in a marked rise in credit losses and a higher default rate among both non-financial corporations and households (see Table IV.6, column 2). This is also due to the long recession eroding households' and corporations' financial reserves, which are used to repay their debts. The scenario implies significantly negative credit growth rates due to a decrease in demand for loans and limited supply stemming from a tightening of credit standards. The decrease in credit intermediation together with the low overall level of interest rates will lead to a marked fall in interest profit, causing a decline of around 33% in the total adjusted operating profit of the banking sector over the prediction horizon. The expected evolution of the economy coupled with high credit losses will therefore be reflected in an accounting loss of the banking sector in 2014 and 2015.

TABLE IV.6

Impact of the alternative scenarios on the banking sector

	Baseline Scenario			*Protracted Depression*		
	2013	2014	2015	2013	2014	2015
Expected credit losses (minus sign for losses)						
CZK billions	-24,2	-25,1	-23,4	-36,4	-67,9	-62,4
% of assets	-0,5	-0,5	-0,5	-0,8	-1,4	-1,4
Profit/loss from market risks						
CZK billions	3,7	-3,2	-7,1	0,9	-1,0	-0,9
% of assets	0,1	-0,1	-0,1	0,0	0,0	0,0
Earnings for covering losses (adjusted operating profit)						
CZK billions	73,5	69,8	68,3	64,6	55,7	51,6
% of assets	1,5	1,4	1,4	1,3	1,2	1,1
Pre-tax profit/loss						
CZK billions	52,9	41,5	37,9	29,0	-13,8	-11,9
% of assets	1,1	0,8	0,7	0,6	-0,3	-0,3
Capital adequacy ratio at end of period in %						
total	**16,0**	**16,3**	**15,2**	**14,9**	**13,2**	**12,0**
Tier 1	**15,6**	**15,8**	**14,8**	**14,5**	**12,8**	**11,6**
Capital injections						
CZK billions		0,3			16,0	
% of GDP		0,01			0,4	
No. of banks below 8% CAR		2			13	

Source: CNB, CNB calculation

TABLE IV.7

Haircuts on EU countries' exposures in *the Loss of Confidence* sensitivity analysis

Country	Haircut in %
Belgium	7
France	4
Ireland	25
Italy	25
Cyprus	35
Hungary	35
Malta	21
Germany	0
Netherlands	0
Portugal	39
Austria	4
Greece	60
Slovenia	20
Spain	25
United Kingdom	0

Source: Rating agencies, CNB calculation
Note: The haircuts are calculated using the main agencies' ratings as of May 2013 for EU countries with debt exceeding 60% of GDP. Slovenia was included in the list of countries because of increased uncertainty about the stability of its banking sector.

TABLE IV.8

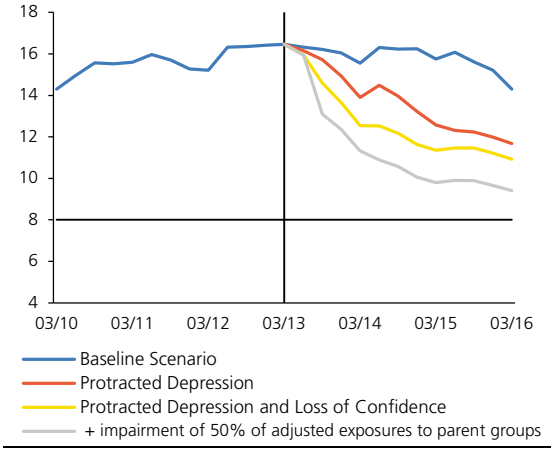
Results of the sensitivity analyses
(in *Protracted Depression* scenario)

	Protracted Depression and Loss of Confidence			*Parent groups*		
	2013	2014	2015	2013	2014	2015
Expected credit losses (minus sign for losses)						
CZK billions	-38.0	-71.8	-57.3	-38.0	-71.8	-57.3
% of assets	-0.8	-1.5	-1.2	-0.8	-1.5	-1.2
Profit/loss from market risks						
CZK billions	-16.5	2.6	3.7	-16.5	2.6	3.7
% of assets	-0.3	0.1	0.1	-0.3	0.1	0.1
Country risk						
CZK billions	-24.5	0.0	0.0	-24.5	0.0	0.0
% of assets	-0.5	0.0	0.0	-0.5	0.0	0.0
Loss from parent exposures						
CZK billions	0.0	0.0	0.0	-39.2	0.0	0.0
% of assets	0.0	0.0	0.0	-0.8	0.0	0.0
Interbank contagion						
CZK billions	-0.1	-0.7	-0.2	-0.1	-3.9	0.0
% of assets	0.0	0.0	0.0	0.0	-0.1	0.0
Earnings for covering losses (adjusted operating profit)						
CZK billions	65.0	58.8	51.0	65.0	58.8	51.0
% of assets	1.4	1.2	1.1	1.4	1.2	1.1
Pre-tax profit/loss						
CZK billions	-14.0	-11.0	-2.8	-53.2	-14.2	-2.6
% of assets	-0.3	-0.2	-0.1	-1.1	-0.3	-0.1
Capital adequacy ratio at end of period in %						
total	**13.7**	**11.6**	**11.2**	**12.4**	**10.1**	**9.7**
Tier 1	**13.2**	**11.2**	**10.8**	**11.9**	**9.7**	**9.3**
Capital injections						
CZK billions		29.6			31.5	
% of GDP		0.8			0.8	
No. of banks below 8% CAR		14			14	

Source: CNB, CNB calculation

CHART IV.26

Capital adequacy ratios depending on scenarios
(%)



Source: CNB, CNB calculation

… but the sector's overall capital adequacy would remain sufficiently above the regulatory threshold

Despite the adverse profitability developments and high credit losses, the banking sector's aggregate capital adequacy ratio (CAR) does not fall significantly below 12% in the *Protracted Depression* scenario. The Tier 1 CAR is about half a percentage point below the total CAR, again illustrating that the sector is well capitalised. Although the aggregate CAR is sufficiently above the regulatory minimum, 13 banks – representing about 17% of the sector – record a fall in capital adequacy below the regulatory minimum and have to strengthen their capital. The necessary capital injections total almost CZK 16 billion, i.e. around 0.4% of GDP. Relative to the size of the banking sector, this figure is not large enough to jeopardise its stability (see Table IV.6, column 2). The banking sector's stability is based on its high CAR, which went up by a further 1.2 pp compared to the previous year, and on its ability to generate income to cover losses even in the event of adverse developments.

The *Protracted Depression* scenario has been extended to include an escalation of the debt crisis and a rise in sovereign risk

One of the variants extending the *Protracted Depression* scenario is an assumption of an escalation of the euro area debt crisis, which would renew financial market tensions and lead to significant growth in yields on EU countries' government bonds. This would manifest itself in a loss of investor confidence and growth in risk aversion not only to indebted EU countries, but also to the Czech Republic. This sensitivity analysis, named the *Protracted Depression and Loss of Confidence* scenario, assumes impairment of all exposures to EU countries. However, this basic impairment is complemented by an additional assumed impairment (haircut) on exposures to EU countries whose debt exceeds 60% of GDP (see Table IV.7). This assumption generates additional banking sector losses of almost CZK 25 billion. The value of Czech government bonds held by banks would also fall given the significant assumed increase in domestic government bond yields during 2013. The sector's capital adequacy remains around 11% in the event of this additional stress (see Table IV.8).

The aggregate CAR will remain above 8% even for an extreme shock combining an adverse scenario, a loss of confidence and write-downs of exposures to parent groups

The *Loss of Confidence* stress scenario includes another stress in the form of an assumed impairment of 50% of all exposures of the five largest domestic banks to their parent groups (this sensitivity analysis is named *Parent Groups* in Table IV.8). Adjusted exposures, obtained by deducting the domestic bank's liabilities in the form of loans and deposits received from the parent bank from the total gross exposure (see section 4.1), are used for testing purposes. This extreme assumption will cause the banking sector to incur additional losses of over CZK 39 billion and a decline in its CAR below 10% (see Chart IV.26). This additional shock should be understood as a means of quantifying the transmission of adverse shocks from parent groups to the Czech banking sector rather than as an assumption that the five parent banks considered will go

bankrupt. The necessary capital injections for this shock exceed CZK 31 billion (0.8% of GDP).

The portfolio concentration test confirms significant impacts of potential bankruptcy of the largest debtors

The concentration of client loan exposures, as measured by the share of the three largest exposures (in the portfolio of loans to legal entities), has long been around 13% and has been falling moderately in recent years (to 12.5% in 2012). On the other hand, the share of uncollateralised claims in loans to the three largest clients is rising (reaching around 53% at the end of 2012). If these debtors default, banks' credit losses could reach high levels. For this reason, an additional sensitivity analysis assuming the default of the three largest debtors of each bank is performed in the *Protracted Depression and Loss of Confidence* scenario. Given the share of uncollateralised claims in loans to the three largest clients, the test assumes an impairment of 50% for these exposures.

The assumed shock has a major impact on the stability of the banking sector, whose aggregate CAR falls towards 11.2% at the end of 2013. If off-balance sheet exposures to the three largest clients are taken into account, it falls to 10.8% (see Chart IV.27). In terms of stress, however, this test assumption is very extreme and exceeds the stress scenarios normally used owing to its strength and substantially smaller probability. The resulting CAR of the banking sector in the event of such a strong shock can therefore be regarded as positive.

An additional sensitivity analysis in the *Protracted Depression* scenario assesses the impacts of a continued recession…

The final sensitivity analysis extends the *Protracted Depression* scenario to include an assumption of a long-running recession over the entire three-year test horizon. This is accompanied by a sharper fall in household and corporate income and a further reduction of their consumption and investment. Owing to unfavourable expectations, households increase their precautionary saving and the saving rate in the economy rises further. On the other hand, in the case of lower-income households the long-running economic decline and growth in unemployment will exhaust their remaining financial reserves, causing a substantial increase in the default rate on their existing debts. Monetary policy remains inactive in this scenario and no CZK exchange rate interventions are assumed (this sensitivity analysis is named *Stronger Protracted Depression* in Table IV.9).

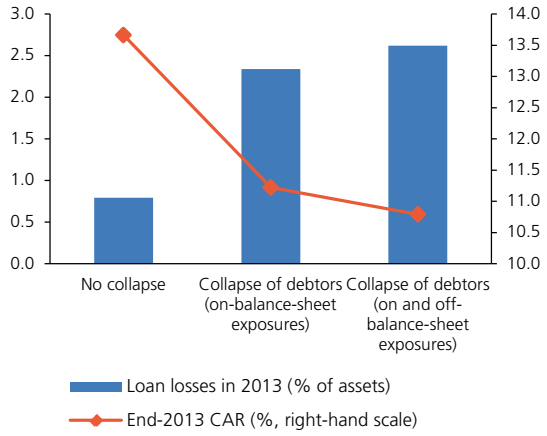
… which will be reflected in a significant rise in the banking sector's credit losses

The sensitivity analysis also assumes growth in non-linearities connected with several years of recession. This manifests itself in a significant rise in the corporate and household default rate and loss given default (LGD) in the final two years of the tests. This combination of adverse factors would be reflected in a very marked increase in banks' credit losses, which are 3.5 times higher than those expected in the *Baseline Scenario* and reach more than CZK 80 billion at the end of 2015 (see Table IV.9). Security revaluation losses are limited given the expected stability of

CHART IV.27

Impact of the collapse of the three largest debtors of each bank

(%; *in Protracted Depression scenario and Loss of Confidence*; LGD = 50%)



Source: CNB, CNB calculation

TABLE IV.9

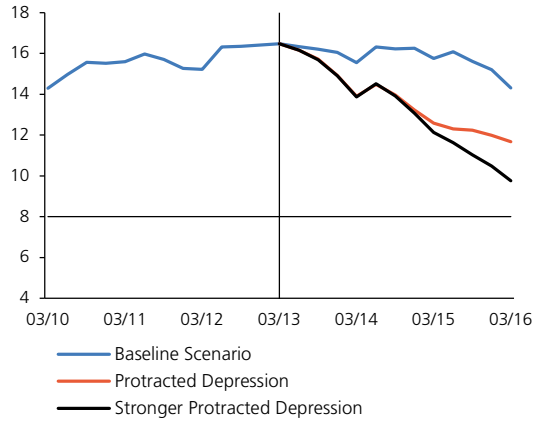
Sensitivity analysis *Stronger Protracted Depression*

	Protracted Depression			*Stronger Protracted Depression*		
	2013	2014	2015	2013	2014	2015
Macroeconomic variables						
GDP (y-o-y %)	-2.3	-3.3	-1.4	-1.8	-1.9	-2.0
Inflation (%)	1.7	1.1	-0.8	1.7	1.0	-1.4
Unemployment (%)	7.9	9.2	10.0	7.9	9.0	10.1
Nominal wage growth (%)	-1.0	-4.3	-2.6	-1.0	-4.6	-3.4
Default rate (PD, %)						
Corporations	3.9	6.4	6.1	3.9	6.7	6.9
Loans for house purchase	4.9	7.1	6.3	4.6	7.0	8.5
Consumer credit	5.4	7.8	10.5	5.4	8.2	11.0
Loss given default (LGD, %)						
Corporations	48.6	55.3	55.2	47.5	53.2	57.9
Loans for house purchase	30.7	46.4	51.6	30.7	46.9	60.2
Consumer credit	56.9	65.7	67.2	56.8	66.6	69.1
Asset markets (%)						
Change in res. property prices	-10.4	-9.9	-0.1	-9.3	-12.0	-10.3
Impact on banking sector (CZK bn)						
Credit losses	-36.4	-67.9	-62.4	-35.4	-70.1	-84.1
Adjusted operating profit	64.6	55.7	51.6	64.9	57.3	46.9
Pre-tax profit/loss	29.0	-13.8	-11.9	30.1	-14.4	-38.3
CAR at the end of period (%)						
Total	14.9	13.2	12.0	14.9	13.1	10.5
Tier 1	14.5	12.8	11.6	14.5	12.7	10.1
Capital injections						
CZK billions		16.0			29.1	
% of GDP		0.4			0.7	
No. of banks below 8% CAR		13			14	

Source: CNB, CNB calculation

CHART IV.28

Capital adequacy ratios depending on scenarios
(%)



Source: CNB, CNB calculation

TABLE IV.10

Scenario type and shock size in the bank liquidity stress test

Scenario type	Values
One-month/three-month bank run (average for banks, %)	11/20*
Drawdown of credit facilities (credit lines, % of volume)	10
Share of short-term claims on banks that will become unavailable (%)	50
Share of short-term claims on other clients that will become unavailable (%)	30
Reduction in value of government bonds eligible as collateral in CNB liquidity-providing operations (%)	25
Reduction in value of other securities (%)	30
Reduction in value of assets sold before maturity (average for banks, %)	50

Source: CNB, CNB calculation
Note: *The first figure applies to the one-month test and the second figure to the three-month test.

interest rates, but the long-running economic decline gives rise to a 15% average year-on-year decrease in banks' adjusted operating profit due to lower borrowing rates and interest margins and a reduction in banks' fees and commissions.

The banking sector as a whole remains resilient but needs sufficient capital buffers

The banking sector as a whole makes an accounting loss in the final two years of the test horizon, and 14 banks – representing almost 19% of the sector – find themselves in a situation of insufficient capital adequacy. Almost CZK 29 billion in capital injections would be needed. Capital injections of similar magnitude were required in the above-mentioned sensitivity analyses, which subjected the banking sector to additional losses (e.g. impairments of exposures to indebted EU countries). However, these losses were never as large as a result of adverse developments in the corporate and household sectors alone. In this negative scenario, the banking sector's aggregate CAR would stay above the regulatory threshold of 8% (see Chart IV.28), but if the adverse trend continued beyond the three-year test horizon it could fall below the critical level. Although the assumption of this sensitivity analysis is relatively extreme, its results underline the importance of banks keeping sufficient capital buffers to cover losses stemming from very adverse unexpected developments and maintaining their current resilience to negative shocks.

Liquidity tests confirm the good liquidity position of banks in the Czech Republic

The assessment of the banking sector's resilience also involved applying a liquidity stress test in the *Protracted Depression* scenario (see Table IV.10). The two-round macro-stress-testing model presented in FSR 2010/2011 was used to test banks' liquidity risk. The test focuses on the resilience of the liquidity buffer of banks to potential liquidity shocks. The first round of the impact involves the emergence of a potential gap in banks' balance sheets associated with increased demand for asset financing amid lower resources (see the first two items of Table IV.10) and a concurrent decline in the value of some assets (the other items) with no difference in their accounting, i.e. the revaluation also affects assets held to maturity. The outflow of deposits and the decline in the value of assets sold before maturity are expressed as average values of various parameters applied to a specific bank. These were derived from the results for individual banks obtained in the solvency stress tests presented above.[28] The second round of shocks emerges as a result of a rise in reputational and systemic risk brought about by banks' efforts to close the liquidity gap and is expressed through additional losses arising from the revaluation of securities held in the balance sheet. Overall, these are scenarios with a very high degree of stress.

28 Banks that incurred accounting losses in the credit risk stress scenarios face a greater outflow of liquidity than profitable banks. In sales of illiquid assets, account is taken of the quality of the bank's assets as measured by the credit portfolio risk costs.

The scenario was applied individually to 23 banks having their registered offices in the Czech Republic at the one-month and three-month horizons. To assess balance-sheet liquidity, the liquidity buffer (LB) was selected.[29] It was calculated at its initial value and after the application of the two rounds of liquidity shocks (see Chart IV.29). The initial liquidity buffers (the full columns) suggest a relatively high level of quick assets in the banking sector as a whole (over 20%). The lowest level of quick assets is held by building societies (below 20% in most cases). The impacts of the negative shocks on the balance sheets of the groups of banks monitored were quite mixed (see Chart IV.29).

On average, small banks would be hit hardest at the one-month horizon, followed by large banks, while building societies followed by small banks would be hit hardest at the three-month horizon. The liquidity buffer would decline by more than two-thirds on average. If the three-month horizon was applied, the volume of quick assets of the building society sector would fall by more than 90%. This is due to the configuration of the building savings system, where a significant share of time deposits consists of deposits redeemable at notice of three months. The liquidity buffer would be fully exhausted by two banks in the case of the one-month test and by six banks in the case of the three-month test. This is due to the types of business model chosen by individual banks and the total volume and composition of quick assets held (see Table IV.11). Very specific business models (especially in the case of some medium-sized and small banks) where long-term assets financed by issues of own securities stand against the minimum liquidity buffer (of about 5% on average) cannot withstand the simulated stress by definition.

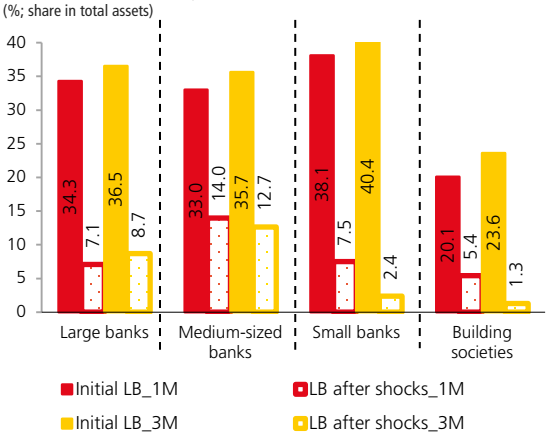
The composition of the liquidity buffer varies from bank to bank. While large banks, small banks and most building societies hold a large part of their liquidity in the form of Czech government bonds, medium-sized banks have a more balanced allocation across other assets of the liquidity buffer. Medium-sized banks were the best performers on average in this test; however, if a larger stress was applied to uncollectibility of short-term claims, for example owing to a frozen interbank market, the results of these banks would not be so favourable. Similarly, if a scenario similar to the Greek crisis was applied, with Czech government debt being subject to large write-downs due to materialisation of sovereign credit risk, the results would be much worse for building societies and other banks with high concentrations of Czech government bonds in their balance sheets.

Although the conditions of the scenario were relatively tough, the banks tested withstood the simulated shock and would be able to close the potential liquidity gap within one month or three months even under worse market conditions. The good liquidity position of domestic banks is

CHART IV.29

Results of the liquidity test

(%; share in total assets)



Source: CNB, CNB calculation
Note: LB = liquidity buffer; 1M = one-month; 3M = three-month.

TABLE IV.11

Composition of the liquidity buffer for claims with maturities of up to one month

	Large banks	Medium-sized banks	Small banks	Building societies
Cash	2.5	0.3	0.9	0.0
Claims on				
central banks	21.7	24.2	21.5	10.9
credit institutions up to 1M	7.0	13.3	13.7	7.1
general government up to 1M	0.1	0.0	0.0	0.0
other clients up to 1M	15.3	13.8	9.7	0.2
Bonds issued by Czech government in CZK	49.2	29.2	49.0	61.5
Bonds issued by CNB in CZK	0.0	0.0	0.0	0.0
Liquidity buffer/total assets	33.7	30.5	43.1	19.1

Source: CNB
Note: The figures in the table express the median for the relevant banks.

[29] The liquidity buffer the one-month horizon is defined as the sum of cash, claims on the central bank, Czech government bonds and claims maturing within one month, while claims maturing within three months are taken into account for the three-month horizon.

also evidenced by a survey of LCR ratios under the CRD IV/CRR rules. The survey results show that Czech banks would easily comply with the required limits by a sizeable margin.

TABLE IV.12

Results of the pension fund stress tests
(one-year horizon)

		Baseline Scenario	Protracted Depression and Loss of Confidence
Equity (as of end of 2012)	CZK billions	22.9	22.9
	% of assets	8.4	8.4
Allocation of 2012 earnings for policyholders	CZK billions	-4.0	-4.0
	% of assets	-1.5	-1.5
Losses arising from interest rate risk	CZK billions	-0.2	-4.2
	% of equity	-1.1	-18.4
Gains/losses from changes in share and unit value	CZK billions	-0.2	-1.4
	% of equity	-0.9	-6.0
Exchange rate gains/losses	CZK billions	0.5	2.8
	% of equity	2.0	12.4
Gains/losses from changes in property value	CZK billions	-0.03	-0.2
	% of equity	-0.1	-0.8
Impact of risks on equity	CZK billions	-0.02	-2.9
	% of assets	-0.01	-1.1
Equity (as of end of 2013)	CZK billions	18.9	15.9
	% of assets	7.1	5.9
Equity (as of end of 2013) In event of assumed fall in equity of CZK 10 billion due to valuation differences	CZK billions	-	5.9
	% of assets	-	2.2

Ad-hoc sensitivity analysis in the pension fund tests
(one-year horizon; additional shocks in individual scenarios)

		Baseline Scenario	Protracted Depression and Loss of Confidence
Revaluation of instruments held to maturity	CZK billions	-0.2	-3.7
	% of assets	-0.1	-1.4
Exposure impairment risk	CZK billions	-0.9	-0.9
	% of assets	-0.3	-0.3

Source: CNB, CNB calculation

The stress tests of insurance companies and pension funds assess the resilience of the two sectors to a marked rise in interest rates

The stress tests of insurance companies and pension funds focus on assessing the risks to the two sectors at the one-year horizon. Together with the *Baseline Scenario*, their resilience to an extended stress scenario *Protracted Depression and Loss of Confidence* was also tested; this variant captures adverse economic developments coupled with increased financial market uncertainty and a loss of investor confidence in the Czech Republic. The assumptions of this scenario are reflected in a marked depreciation of the exchange rate and a sharp rise in Czech government bond yields. This may pose a significant risk to insurance companies and pension funds, which hold a large proportion of their portfolios in debt securities.

The pension fund stress tests demonstrate that the sector is sufficiently resilient thanks to its high equity

The results of the pension fund tests confirm the sector's strong resilience to the risks assumed. This is due mainly to its high level of equity. However, equity rose considerably during 2012 (by more than CZK 10 billion) owing to a rise in valuation differences (see Chart IV.22) and could decrease substantially again in the event of adverse financial market developments (see Table IV.12). This is also evidenced by the developments in recent years – as a result of adverse financial market developments the pension fund sector recorded a decline in equity to CZK 3.2 billion in 2008, mainly because of a marked valuation loss of almost CZK 8 billion.

Furthermore, the test results show that in the adverse scenario pension funds would be hit hardest by credit risk losses exceeding CZK 4 billion. By contrast, the assumed exchange rate depreciation would generate gains for the sector due to a rise in the value of the portfolio allocated in foreign currency. The sector's low sensitivity to a drop in stock prices reflects the fact that investment in shares and units declined further during 2012. In fact, four pension funds completely liquidated their equity securities portfolios. Real estate risk is still almost negligible in Czech pension funds. The overall impacts of these shocks suggest that the sector is sufficiently resilient to the assumed adverse developments (equity stays above 2% of assets) even when a decrease in equity of CZK 10 billion due to valuation differences is assumed in the stress scenario.

Ad-hoc sensitivity analyses test additional risks that might imply losses for the sector

Two sensitivity analyses were conducted beyond the basic market risks facing the pension fund segment. The first sensitivity analysis focuses on assessing the losses that would arise from a decline in prices of government bonds held to maturity if these bonds were revalued to the market price. If this portfolio was revalued, pension funds would record

additional losses of CZK 3.7 billion in the *Protracted Depression and Loss of Confidence* adverse scenario. This loss is much lower than in last year's tests, reflecting the fact that pension funds substantially reduced their portfolios of securities held to maturity during 2012 (see section 4.1). The second sensitivity analysis focuses on the risks arising from exposures to highly indebted EU countries and assumes their partial impairment (see Table IV.7). Pension funds would record no significant losses in this case (less than CZK 1 billion). This is due to their relatively low exposure to the rest of the world, which fell further in 2012.

The stress test of insurance companies confirms the sector's strong capital position…

Like the pension fund tests, the stress tests of insurance companies were performed for the *Baseline Scenario* and for the extended adverse *Protracted Depression and Loss of Confidence* scenario. Stability can be expected in this sector under the *Baseline Scenario*. Slight revaluation losses on shares and debt securities should be partly offset by profits from insurance activities in the absence of major natural disasters. Therefore, the aggregate solvency rate at the end of 2013 should be roughly the same or slightly lower than a year earlier.

… and its resilience to adverse developments

In the adverse scenario, insurance companies would be hit hardest by losses from interest rate risk totalling 2.1% of assets, revaluation losses on shares and units totalling 1.9% of assets, and revaluation losses on government bond holdings (see Table IV.13). However, the impact of interest rate risk would be partly offset by revaluation gains on technical provisions (release of LAT provisions, see section 4.1) due to higher yields on government bonds. The cumulative impact of all the risks considered on the available solvency margin (ASM) in this scenario would be CZK 22.6 billion, or 6.1% of the assets of the sample of insurance companies tested. Given the expected profit of CZK 9.6 billion and planned dividends of around CZK 9.4 billion, the ASM would drop from CZK 58.7 billion (16%) to CZK 38.9 billion (10.6%). As a result, the aggregate solvency ratio would decline from 305% to 202%, but would stay above the regulatory minimum of 100%. As a result of these adverse developments, one insurance company would fall below the minimum solvency ratio. The necessary capital injections would amount to CZK 262 million. Despite these risks of losses, the insurance company sector can be assessed as stable and resilient to adverse developments.

TABLE IV.13

Results of the insurance company stress tests

		Baseline Scenario	*Protracted Depression and Loss of Confidence*
Equity risk	CZK billions	-0.76	-6.85
	% of assets	-0.21	-1.86
Real estate risk	CZK billions	-0.08	-0.74
	% of assets	-0.02	-0.20
Exchange rate risk	CZK billions	0.00	-0.27
	% of assets	0.00	-0.07
Interest rate risk	CZK billions	-0.18	-7.80
	% of assets	-0.05	-2.12
Credit spread risk	CZK billions	-0.38	-0.72
	% of assets	-0.10	-0.19
Risk of fall in GB prices	CZK billions	-0.38	-3.96
	% of assets	-0.10	-1.08
Premium risk	CZK billions	-0.01	-2.22
	% of assets	0.00	0.60
Impact of risks on ASM	CZK billions	-1.44	-22.55
	% of assets	-0.39	-6.14
Projected earnings from insurance activities in 2013	CZK billions	9.60	9.60
	% of assets	2.61	2.61
Planned dividends for payment in 2013	CZK billions	-9.41	-9.41
	% of assets	-2.56	-2.56
Other impacts (tax)	CZK billions	0.40	2.70
	% of assets	0.11	0.73
ASM (as of end of 2012)	CZK billions	58.74	58.74
	% of assets	15.98	15.98
ASM (as of end of 2013)	CZK billions	57.71	38.89
	% of assets	15.70	10.58
Solvency ratio	2012	305%	305%
	2013	300%	202%

Source: CNB, CNB calculation