

## 4 RISKS TO FINANCIAL STABILITY AND MACROPRUDENTIAL POLICY

The aim of this section is to assess the main risks to financial stability and to provide information about risk mitigation tools. To this end, the text evaluates the risks stemming from the external environment, the current position of the Czech economy in the financial cycle, the resilience of the Czech financial sector to the risks identified, and the tasks and recommendations arising from the analyses for macroprudential policy, microprudential supervision and other economic policies. The first part contains an assessment of financial stability indicators, including a macroprudential dashboard. The second part describes the CNB's measures to mitigate sources of risks to financial stability. The third, fourth and fifth parts provide detailed information about the use of specific macroprudential tools to reduce procyclical behaviour by the financial sector and risks relating to property and sovereign exposures. The final, sixth part describes developments in the national and international regulatory environment, macroprudential policy in the EU, progress in the banking union area and the capital markets union project.

### 4.1 SOURCES OF RISKS TO FINANCIAL STABILITY

#### High private sector debt in advanced countries remains an obstacle to renewed robust economic growth

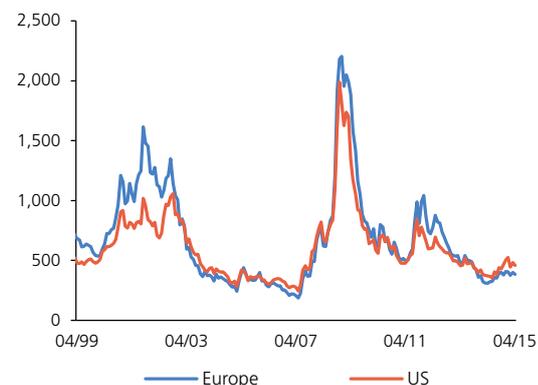
The fragility of the economic recovery remains a significant source of risks to financial stability in advanced countries. A return to recession would lead to higher credit losses, which would complicate the still unfinished process of stabilisation of bank balance sheets. Credit growth remains subdued in many advanced countries and no major recovery is likely in the next few years owing to high private sector debt. Sluggish rates of growth in credit, and in some countries absolute declines in the stock of credit to the private sector, are amplifying the risk of a sustained deflation trend. Uncertainty surrounding the continuation of the economic recovery and deflationary pressures are forcing central banks to carry on with very accommodative monetary policy. This is heightening the importance of preventive macroprudential policies.

#### Historically low interest rates and yields on high-quality assets are a source of market risks

Zero or negative monetary policy interest rates and very low yields on most government bonds and other high-quality assets are motivating many investors to take on increased risks. Low interest rates on loans and other sources of external financing may encourage people to buy property or other assets in order to take advantage of the favourable conditions to attain better returns. This may result in some asset prices rising above levels consistent with the long-term trends in fundamental factors. From the global perspective, growth in prices on bond markets combined with a decline in bond risk premia is a possible risk. The yield spreads of US and European high-yield corporate bonds have fallen to unusually low levels close to their pre-crisis figures (see Chart IV.1).

CHART IV.1

#### Yield spreads on risky private sector bonds (bp)

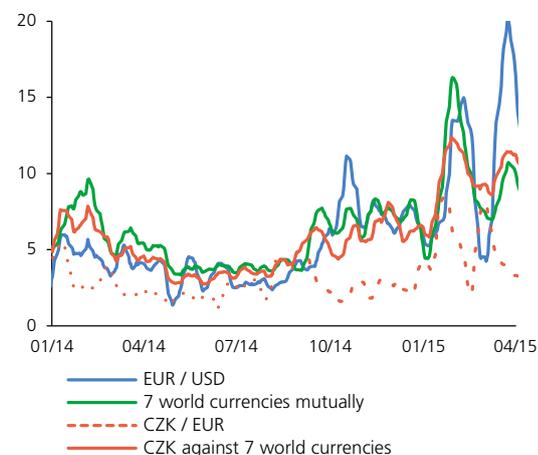


Source: Bloomberg L.P.

Note: Yield spread means the option-adjusted spread between private sector and government bond yields; a risky bond is a speculative-grade bond (BB+ or lower).

CHART IV.2

#### Exchange rate volatility (% on annual basis)

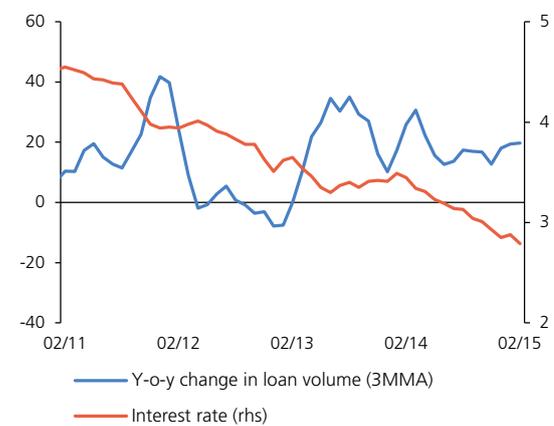


Source: Bloomberg L.P.

Note: The seven world currencies are USD, EUR, JPY, GBP, AUD, CHF and CAD. Volatility is calculated as the average day-to-day change in the exchange rate over a ten-day moving window. The largest and smallest day-to-day changes are not used. Smoothed by the five-day moving average.

CHART IV.3

#### New koruna loans to households for house purchase (%)

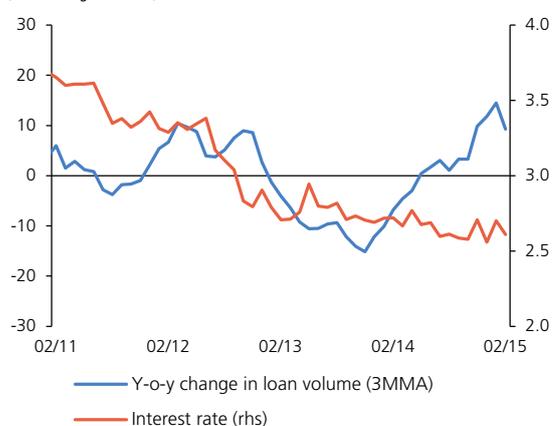


Source: CNB

Note: The data for households also include data for non-profit institutions serving households. Loans to households for house purchase also include refixed and refinanced loans.

CHART IV.4

#### New koruna loans to non-financial corporations (%; including overdrafts)



Source: CNB

Note: New koruna loans to non-financial corporations also include overdrafts.

Rather than a low risk level, this may indicate a reduced ability of the markets to price risks. A sudden correction in bond prices (for example in response to negative economic news or stronger geopolitical risks) could then be amplified by low market liquidity on bond markets.<sup>1</sup> Owing to strong correlation between many assets, there could be contagion to other markets and subsequent sizeable market losses. In the euro area, this risk is exacerbated by uncertainty surrounding the repayment of Greek sovereign debt.

#### Emerging economies also face risks of increased volatility

Uncertainty regarding the timing of the change in the monetary policy stance of key central banks remains a significant potential source of higher financial market volatility. The appreciation of the US dollar in late 2014 and early 2015<sup>2</sup> (which was partly due to communication by the Fed on the gradual normalisation of monetary policy) resulted in a large outflow of capital from several emerging economies. Further appreciation of the dollar could have an adverse effect on countries where the private or public sector has a high proportion of dollar-denominated debt. These countries include Turkey, Russia and many Asian and Latin American countries. A further rise in currency market volatility (see Chart IV.2) and a loss of confidence in continued rapid growth of these economies could restrict their access to liquidity and lead to currency depreciation, an increase in credit defaults and considerable losses on the part of investors.<sup>3</sup>

#### The Czech economy is gradually bouncing back from the bottom of the financial cycle

The domestic economy is currently in a phase of the financial cycle that can be regarded as the onset of a recovery. This is evidenced by a slightly rising financial cycle indicator and other indicators described in more detail in section 4.3. Growth in bank loans to the private sector is increasing slightly (see Chart IV.17). However, developments differ across specific segments. New koruna loans to households for house purchase have been rising at an average rate of 19% since early 2013 (see Chart IV.3).<sup>4</sup> New loans to non-financial corporations started rising during the last year, following a period of year-on-year declines<sup>5</sup> (see Chart IV.4).<sup>6</sup> This trend continued into 2015 Q1, when new corporate loans rose by around 9% year on year. Overall, the risk of excessive

- 1 As regards liquidity, there are concerns about the ECB's government bond purchases under its new quantitative easing programme, which could reduce the availability of these liquid assets on the market.
- 2 Between October 2014 and March 2015, the US dollar appreciated more against the other major currencies than during any other similar period since 1981.
- 3 The imposition of economic and financial sanctions on Russia in August 2014 had a similar impact. This led to a weakening of the Russian rouble, a downgrade of the country's credit rating to the lowest investment grade and a capital outflow from Russia.
- 4 These loans also include refixed and refinanced loans, which accounted for more than one-third of total new loans in March 2015.
- 5 This can be partly explained by increased bond issuance, as the share of bonds in the sector's total financing has been growing in recent years (see section 2.2).
- 6 However, the base period of 2013, to which the year-on-year changes in this text relate, was significantly below average in the case of loans to non-financial corporations. As a result, the year-on-year growth must be interpreted with caution.

growth in lending remains low. This is a key guide for determining the countercyclical capital buffer, which is dealt with in section 4.3.

**The recovery in bank loans is being accompanied by an easing of credit standards and a further drop in interest rates...**

The results of the Bank Lending Survey<sup>7</sup> suggest that the credit standards applied to all types of loans to corporations and households began to ease in 2014. This trend continued into 2015 Q1. The softer lending conditions coupled with historically low interest rates may boost the interest of households and firms in new loans and increase their willingness to take on higher investment risks. This is particularly true of loans for financing property purchase and construction.

**... which may become a source of risks for households and credit institutions**

Expectations of further property price growth combined with the aforementioned loan market tendencies in the area of financing of property purchases and construction may become a potential source of systemic risk. Thanks to low interest rates, loans to households for house purchase are becoming more affordable for borrowers with lower and less stable income, who are more likely to experience repayment problems at times of rising interest rates or worse economic development. At the same time, the perceived attractiveness of buying to let as an investment is increasing. In the event of adverse economic developments, such borrowers may have a weaker incentive to repay than in the case of owner-occupied housing. Property price growth usually leads to a rise in the amount of loans provided, which increases the vulnerability of borrowers' budgets. A CNB survey of LTV and LTI for new loans secured by residential property (see section 4.4) indicates a rise in this type of risk.

**The low interest rates are favourably affecting the financial situation of borrowers...**

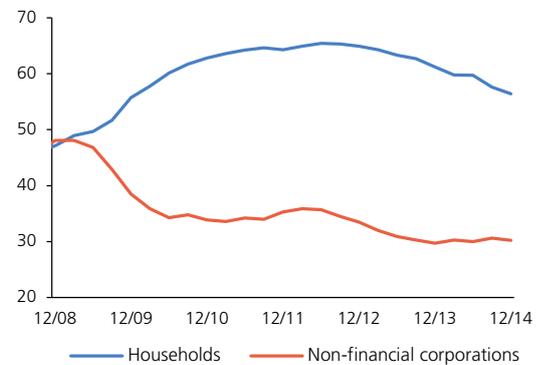
A falling amount of interest paid (see Chart IV.5), related to the marked decrease in interest rates, is having a favourable effect on the debt servicing costs of non-financial corporations and households. Together with the recovery in credit growth, this is fostering a rise in domestic demand and a recovery in economic activity.

**... but are squeezing the profitability of financial institutions**

The decrease in interest rates has been accompanied by a decline in interest margins in recent years. Margins on bank loans to households for house purchase continued to record historical lows during 2014 (see Chart IV.6). By contrast, the interest rate margin on bank loans to non-financial corporations stabilised (see Chart IV.7). If the current very low level of interest rates were to persist for a long time or even fall further, it could have an adverse effect on the profitability of credit institutions, whose income depends heavily on interest margins (see Box 3 in

CHART IV.5

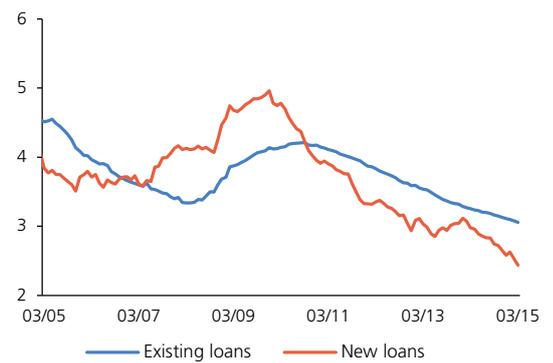
**Interest paid on bank loans**  
(CZK billions; annual moving totals)



Source: CNB

CHART IV.6

**Margins on bank loans to households for house purchase**  
(pp)

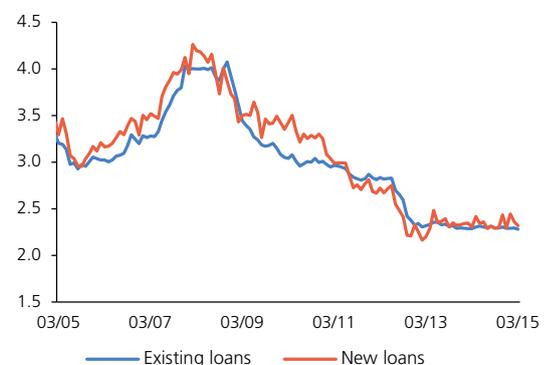


Source: CNB

Note: The margin on existing (new) loans is calculated as the difference between the interest rate on the stock of (new) loans to households for house purchase and the interest rate on the stock of (new) total deposits.

CHART IV.7

**Margins on bank loans to non-financial corporations**  
(pp)



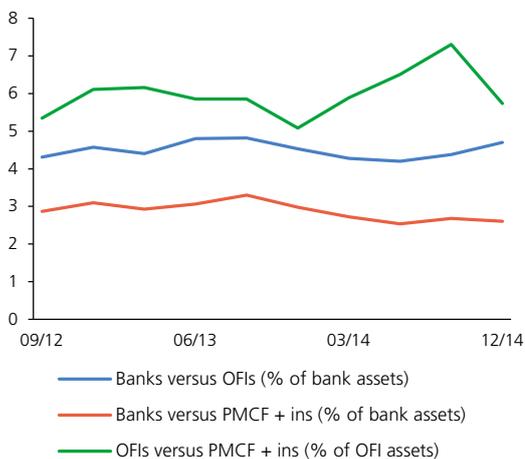
Source: CNB

Note: The margin on existing (new) loans is calculated as the difference between the interest rate on the stock of (new) loans to non-financial corporations and the interest rate on the stock of (new) total deposits.

7 CNB (2015): *Bank Lending Survey*, January and April 2015.

CHART IV.8

**Interconnectedness of segments of the financial sector**  
(sum of all mutual exposures in assets and liabilities between sector pairs in % of assets)



Source: CNB, financial accounts  
 Note: OFIs comprise other financial corporations engaged in lending and mutual funds other than money market funds. PMCF + ins comprises pension management companies, funds of pension management companies and insurance companies.

section 3.1). This is particularly true of building societies, which have a limited ability to react quickly to a decline in market interest rates under the legal framework for building savings. Low interest rates may also negatively affect the performance of insurance companies (see section 3.1).

**There are no major changes in the links within the financial sector**

The individual segments<sup>8</sup> of the financial sector are directly interconnected through exposures in the form of deposits, loans, ownership interests and other instruments. A strengthening of the links within the financial sector could intensify the structural component of systemic risk, leading to an increased risk of the emergence and spread of financial distress across segments. However, the volume of financial assets making up the individual links saw no major changes in 2014 either in absolute terms or as a percentage of the financial assets of the individual segments (see Chart IV.8). A slight rise in financial system interconnectedness can be observed in the area of concentration of bank liabilities. The share of the five largest liabilities to credit institutions, including foreign ones, in regulatory capital rose by 4.5 pp to 121% (see part 2 of the macroprudential dashboard).

**Growth in risks connected with the structural and cyclical components of systemic risk is being suppressed by robust banking sector liquidity**

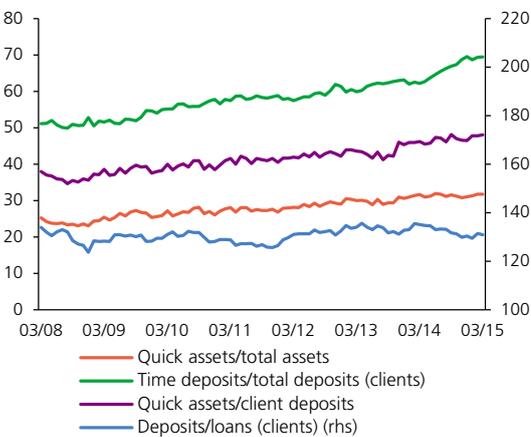
The Czech banking sector has long maintained an above-average liquidity position by international comparison, and the ratio of quick assets to total assets stayed high in 2014 (see Chart IV.9). The sector thus still has a marked excess of deposits over loans provided. However, the share of demand deposits in total deposits is still rising and maturity transformation is increasing due to a growing share of long-term corporate loans<sup>9</sup> and loans secured by property in total bank loans as well. This may be a risk factor in the event of sudden liquidity shocks on the money and bond markets.

**The macroprudential dashboard**

As in FSR 2013/2014, a graphical overview of recent developments in selected systemic risk indicators is provided using a graphical tool called the macroprudential dashboard (see Table IV.1) Indicators suggesting a need for easier or tighter macroprudential policy are distributed evenly within the dashboard. Most of the indicators are little changed compared to last year. The dashboard suggests that low interest rates stand out as a potential source of systemic risk. This risk is captured by the very low level of ten-year government bond yields and by the low interest rate margin.<sup>10</sup> By contrast, a weakening of future risks is evident, for example, in only modest growth in the total stock of loans in the economy. The

CHART IV.9

**Banking sector liquidity ratios**  
(%)



Source: CNB

8 The financial sector comprises the segment of monetary and financial institutions, insurance companies and pension funds and the segment of other financial intermediaries.  
 9 The ratio of long-term bank loans to non-financial corporations to total loans to non-financial corporations rose by 1.6 pp year on year to 53.2%.  
 10 Part 1b of the macroprudential dashboard now shows the share of government bond holdings in bank assets.

risks to financial stability are being kept at a low level thanks also to a further increase in banks' capital adequacy and low leverage.

Of course, the CNB's decisions on the configuration of macroprudential tools cannot be based mechanically on simplified instruments such as the dashboard, which serves more as a way of presenting the risks identified. The decisions are based on many other, more detailed data and model-supported considerations. The multi-criteria nature of the financial stability objective makes it necessary to expertly assess whether each particular indicator value reflects the emergence of future risks or the materialisation of past risks, whether it indicates a short-term or medium-term risk, and so on. A more detailed assessment of the risks described by the individual indicators is given in the following subsections.

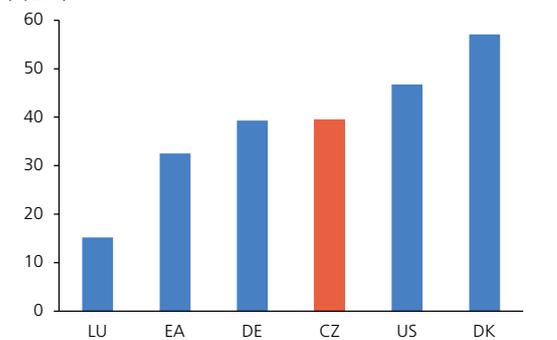
TABLE IV.1

<b>Macroprudential dashboard (key financial stability indicators in 2013 and 2014)</b> (distance from benchmark expressed as number of standard deviations)	
<b>1. RISK FACTORS (sources of risks associated primarily with financial cycle)</b>	
<b>1a. Short-term</b>	
Real GDP growth (year on year, %)	
Real gross disposable income growth (year on year, %)	
Interest expenses/gross disposable income (%)	
Non-performing loans/total loans (%)	
Growth in demand deposits in banks (year on year, %)	
10Y government bond yield (average for period, %)	
Growth in residential property prices (transaction prices, %)	
Dividends (% of CET1 of banks)*	
<b>1b. Medium-term</b>	
Volume of bank loans to private sector/GDP (%)	
Y-o-y growth in bank loans to private sector (%)	
Public sector debt/GDP (%)	
Household debt/nominal gross disposable income (%)	
Government bond holdings/bank assets (%)	
Apartment price/average annual wage	
Apartment price/annual rent (according to IRI)	
Interest margin (new loans vs. deposits, %)	
<b>2. MULTIPLICATION OF IMPACTS ON FINANCIAL SYSTEM (sources of risks primarily of structural nature)</b>	
Interconnectedness in banking sector (%)	
Concentration of bank claims (five largest/CET1, %)	
Concentration of bank liabilities (five largest/CET1, %)	
<b>3. ABSORPTION MECHANISMS IN FINANCIAL SYSTEM</b>	
<b>3a. Absorption of all types of shocks</b>	
Excess of CET1 of banks above regulatory minimum (pp)	
Leverage (bank assets/equity)	
<b>3b. Absorption of credit risk</b>	
Aggregate LTV for residential mortgage loans (%)	
NPL coverage ratio (provisions/NPLs, %)	
<b>3c. Absorption of liquidity risk</b>	
Quick assets/total assets of banks (%)	
Client loans and credit facilities/client deposits of residents (%)	

Source: CNB, CZSO  
 Note: Unfilled (filled) values are for 2013 (2014). Green (red) indicates a need to consider looser (tighter) macroprudential policy; grey signifies no clear indication in either direction in the current situation. The benchmarks for the indicators are estimates of the trend values or the averages since 2002 (or later, depending on data availability). The indicators are unweighted, so the same values for different indicators can mean different contributions to total systemic risk.  
 \* Dividends paid out of the profits of the previous year and earlier periods.

CHART IV.10

Share of loans for house purchase in total bank loans to the non-financial sector (%; 2014)



Source: ECB, Fed  
 Note: LU and DK are the countries with the lowest and highest figures in the EU. Bank loans to the non-financial sector also include debt securities.

CHART IV.11

Growth in NPLs and share of loan loss provisions (year-on-year change in %)



Source: CNB  
 Note: The data are adjusted for the exposures of the Czech Export Bank and take into account the merger of the Czech and Slovak UniCredit Bank.

## 4.2 MACROPRUDENTIAL POLICY RECOMMENDATIONS AND INSTRUMENTS

### 4.2.1 MACROPRUDENTIAL POLICY RECOMMENDATIONS

#### Financial institutions must maintain a high loss-absorbing capacity

The robust capital adequacy, favourable aggregate capital ratio and high degree of liquidity and profitability of Czech banks form a stable basis for absorbing shocks in the event of adverse developments (see section 3.2). All this is also of key importance for maintaining high public and investor confidence in the stability of the Czech banking sector. To cover credit and market risks and the risk of a potential deterioration in profitability due to changes in the interest rate environment, it is essential in the current situation to maintain high levels of capital, including the capital buffers applied by the CNB under CRD IV since 2014 (see sections 4.2.2 and 4.3). Maintaining robust capital buffers is of particular importance for banks that are systemically important by dint of their position and character. If new systemic or sectoral risks are identified, the CNB will use all the means at its disposal – in particular the capital and liquidity regulatory framework for macroprudential policy and microprudential supervision – to increase the stability of the financial sector.

#### The CNB will apply preventive tools to counteract growth in risks in the area of financing of residential property purchases

The more optimistic expectations of corporations and households, the low interest rates, the strong balance-sheet liquidity of banks, the softer credit standards and the renewed property price growth are starting to affect the housing loan market (see sections 2.3 and 2.4). The growth in residential property prices and the increasing profitability of buying to let are creating potential for the emergence of a price spiral between property prices and housing loans. According to CNB analyses, the configuration of credit standards on the housing loan market remains mostly conservative. However, growing diversity between banks' approaches and increasing tendencies to provide riskier loans for house purchase can be observed (see section 4.4). The CNB does not currently assess this as a direct source of risk. As loans to households for house purchase represent the largest part of the credit portfolio of domestic banks (and are also very significant by international comparison; see Chart IV.10), the CNB deems it necessary to deploy preventive tools to counteract growth in these risks in the years ahead. These tools consist in a set of recommendations for credit institutions providing retail loans secured by residential property (see section 4.4). If the domestic property market started to show signs of overheating in future years, the CNB would apply the tools defined in the CRD IV/CRR legislation to mitigate the risks associated with exposures to the residential property market. In particular, these tools include higher sector-specific risk weights for the calculation of capital requirements for banks.

#### The concentration risk associated with sovereign exposures will be stress tested

Given the continued growth in client deposits and subdued demand for loans among non-financial corporations, banks are allocating a significant

proportion of their funds to government bonds (mainly Czech ones). Their share in banks' total assets increased slightly year on year in the Czech Republic. The accumulation of government bonds in banks' balance sheets is natural for a number of reasons, but there is an increased risk of concentration in some banks. The CNB has therefore created a methodology for reviewing and assessing the systemic aspect of sovereign exposure concentration. In applying this methodology, the CNB will conduct an annual stress test of Czech public finance and, where necessary, will set an additional capital requirement under Pillar 2 for banks with increased sovereign exposure concentration risk (see section 4.5 for more details). Given the stability of Czech public finance, however, the CNB will not apply additional capital requirements over the next three years. In addition to sovereign risk, the government bond portfolio is associated with market risk, which increased further in 2014 and in the first few months of this year as a result of global financial market developments (see section 2.1).

#### Credit risk requires increased monitoring

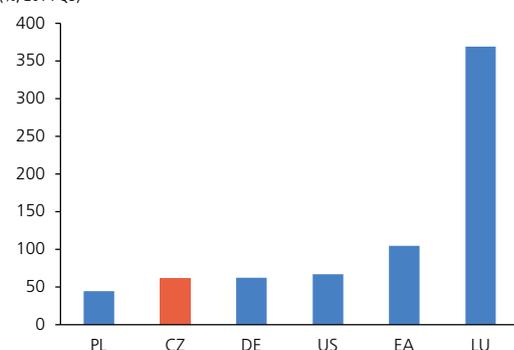
The economic recovery in 2014 helped reduce credit risk in non-financial corporations and stabilise credit risk in households. The favourable trend is also evidenced by NPL growth and provisioning in the banking sector as a whole (see Chart IV.11). Latent balance-sheet and off-balance-sheet credit risk decreased and the long-running decline in total risk weights halted. On the other hand, NPLs are continuing to migrate to the worst loss category and their past-due period is getting longer. Exposures to non-financial corporations in some sectors (construction and energy) and some categories of clients (particularly small enterprises) are showing an increased level of risk, which may reflect deeper problems of a non-cyclical nature. The escalation of geopolitical risks is increasing the riskiness of loans to non-residents and non-financial corporations with strong international links. The credit risk of both non-financial corporations and households is currently being suppressed by the relatively low debt ratios of these sectors (see Charts IV.12 and IV.13) and by low interest rates on loans. However, these may also become a source of vulnerability due to easier availability of loans. As the economy is starting to shift to a more expansionary phase of the business cycle, the CNB will closely monitor bank credit standards.

#### The CNB will continue to focus on the resilience of banks and credit unions

The banking sector as a whole is in good shape. This is confirmed by the solvency and liquidity stress test results (see sections 3.2 and 3.3). However, significant differences in capitalisation, profitability and approaches to credit risk and liquidity management persist across institutions. Small banks are vulnerable because of their low profitability, so due care and attention will be paid to them. The regulatory framework applying to building societies,<sup>11</sup> which forbids changes to deposit interest rates during the six-year saving cycle, exposes this segment to profitability

CHART IV.12

Ratio of debt of non-financial corporations to GDP  
(%; 2014 Q3)

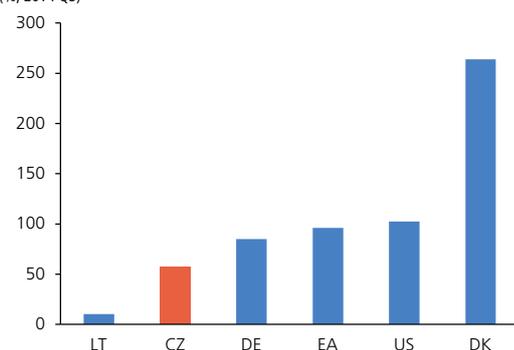


Source: ECB, White Book

Note: PL and LU are the countries with the lowest and highest figures in the EU. The figures do not include data for MT.

CHART IV.13

Ratio of household debt to GDI  
(%; 2014 Q3)

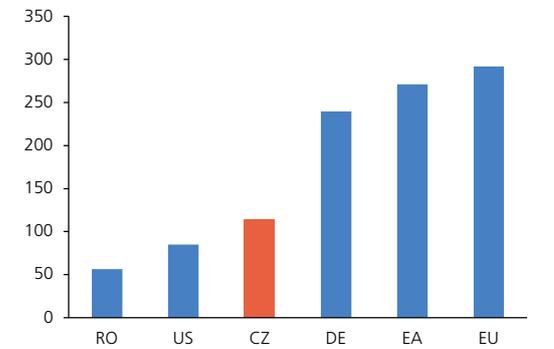


Source: ECB, White Book

Note: LT and DK are the countries with the lowest and highest figures in the EU according to the available data. The data for LT are for 2013.

<sup>11</sup> Article 5(7) of Act No. 96/1993 Coll., on Building Savings Schemes.

CHART IV.14

**Ratio of banking sector size to GDP**  
 (%; 2013)


Source: ECB, Fed

Note: The ratio of the aggregate total assets of commercial banks to GDP. RO and LU are the countries with the lowest and highest figures in the EU.

risk linked with the environment of sustained low interest rates (see Box 3 in section 3.1). The credit unions segment is undergoing changes connected with the amendment of its legal framework. In the long term, this will significantly reduce risky behaviour, which has had negative effects in past years. In the interim, however, the segment will need close monitoring. On a general level, it is essential for banks and credit unions to remain prudent in measuring the risks linked with their claims and in classifying their loans, to assess collateral quality conservatively, to set aside sufficient loan loss provisions and to manage their NPL portfolios effectively. The low interest rate environment, which is associated with a risk of a sudden adjustment of asset prices and a rise in interest rates and the interest spread, is increasing the need for prudential management of interest rate risk. In its supervisory work, the CNB will therefore continue to focus on compliance with the requirements for the structure and level of capital adequacy and the quality of credit and interest rate risk management and with the liquidity management rules.

**Pension management companies must focus on the risks associated with a potential rise in interest rates**

A sharp rise in interest rates from their current very low levels poses a significant risk to pension management companies, as the transformed funds they manage hold most of their portfolios in debt securities. Pension management companies should therefore prudently assess the size of the impact of a potential rise in interest rates and the ensuing decline in the prices of their debt securities holdings. Such developments would lead to negative valuation differences, as occurred in 2007–2009, and the value of the assets of the transformed fund could fall below the value of its liabilities. The pension management company would then be obliged to increase the capital of the transformed fund from its own resources, which would lead to a potentially significant decrease in its capital adequacy.

**The CNB will pay a high degree of attention to changes in the EU financial regulation and the banking union project**

Within the European supervisory authorities, the CNB is actively involved in the preparation and implementation of the regulatory tools and measures required by the CRD IV framework; within the Financial Stability Board (FSB) and the Basel Committee on Banking Supervision (BCBS) it participates in discussions on the development of standards for the banking sector; and within the ESRB it is involved in designing macroprudential policies. Proposals for new regulations in the EU require constant close attention, as they sometimes only take account of the features of the financial sectors of euro area countries and do not always suit the Czech financial sector. This applies in particular to the banking sector, which applies traditional, conservative approaches and is small by comparison with the euro area (see Chart IV.14). One regulatory initiative that presents a potentially significant risk from the perspective of the Czech financial sector is the directive establishing a framework for recovery and resolution. One part of this directive that may have considerable macroprudential consequences in the Czech Republic is the introduction of a tool for writing down or converting capital instruments and eligible liabilities, specifically a minimum requirement for own funds

and eligible liabilities (MREL). The CNB commented on the draft regulatory technical standards on MREL prepared by the European Banking Authority (EBA). The draft did not take sufficient account of conservative and locally oriented retail banks, which finance their activities fully or mostly from insured deposits. Were it to be implemented, it could have a negative effect on the asset and liability structure of domestic banks. Within the EBA, the CNB will therefore lobby for resolution authorities to be allowed to take account of a bank’s business model, mode of financing and risk profile when setting its MREL.

**The CNB considers stabilisation of the regulatory framework to be a priority**

Besides contributing positively to the stability of financial systems, the plethora of international and European regulatory initiatives rolled out in past years may have some unintended adverse consequences. These may be linked with regulatory overlaps pertaining to various types of risks. Many of the new regulations are targeted at mitigating risks associated with the functioning of large and complex institutions: the capital buffer for global and other systemically important institutions, the systemic risk buffer, Pillar 2 instruments, TLAC/MREL requirements and – in some countries – the leverage ratio. Numerous initiatives are also focused on preventing excessive leverage or excessively low risk weights: the leverage ratio, sectoral risk weights, the revision of standardised and model approaches, and minimum risk weights in the Basel rules. Several instruments should also help reduce procyclicality in the financial sector: the countercyclical capital buffer, the new IFRS 9 method for accounting for asset impairment, the leverage ratio and the Pillar 2 tools. This complex regulatory framework will prevent the emergence of unregulated grey areas, but it may also create opposite incentives as regards the asset and liability structures chosen by banks. These could have a negative effect, for example, on the financing of corporate exposures and long-term investment projects. Banks may also concentrate too much on implementing the new regulations or, conversely, on seeking ways of circumventing them, to the detriment of client services and prudential risk management. In light of all this, the CNB feels that stabilisation of the regulatory framework should be a priority in the years ahead.

**4.2.2 MACROPRUDENTIAL POLICY INSTRUMENTS**

Macroprudential authorities can choose relevant macroprudential tools to mitigate sources of systemic risk once they have identified them.<sup>12</sup> In addition to capital buffers, the CNB has at its disposal tools targeted at specific and sectoral risks (see Table IV.2).

<sup>12</sup> The CNB bases its choice of appropriate macroeconomic policy tools on the ESRB recommendation on intermediate objectives and instruments of macroprudential policy. The individual tools are described in detail in *The ESRB Handbook on Operationalising Macro-prudential Policy in the Banking Sector*.

TABLE IV.2

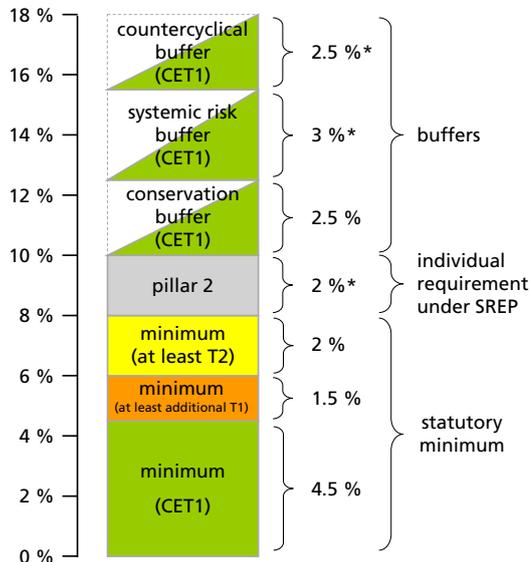
Summary of macroprudential instruments

Systemic risk	Key instruments	Applied in CZ	Detailed information
Excessive credit growth and leverage	Countercyclical capital buffer	Yes, since 2014, zero rate	section 4.3
	Leverage ratio	Expected as from 2018	section 4.2.2
	Capital requirements by sector (in particular real estate exposure)	No increases as yet	section 4.4
	Systemic risk buffer	Yes, for four banks since 2014	section 4.2.2
	LTV/LTI caps	Yes	section 4.4
Excessive maturity mismatch and market illiquidity	Stable funding restrictions (e.g. NSFR, LTD)	Expected in future	section 4.2.2
	Liquidity coverage ratio (LCR)	Yes, as from 1 October 2015	section 4.2.2
	Liquidity charges	No	-
Exposure concentration	Large exposure restrictions and capital requirements (by counterparty, sector, geographic)	Yes, option of additional capital requirements to cover risk of concentration of sovereign exposures, methodology in place as from 2015	section 4.5
Misaligned incentives	SIFI capital surcharges (G-SII and O-SII buffer)	No	section 4.2.2
	Systemic risk buffer	Yes, for four banks since 2014	section 4.2.2

Source: CNB  
 Note: The classification of risks and tools is based on the Flagship Report on Macroprudential Policy in the Banking Sector (ESRB, 2014).

CHART IV.15

## Structure of capital requirements



Source: CNB

Note: \* Expected upper limit, but actual values may be higher.

Since last year, the CNB has been using several types of capital buffers, including a capital conservation buffer, a countercyclical capital buffer and a systemic risk buffer. Banks have to keep these buffers above the statutory minimum capital requirement (see Chart IV.5). This year, the CNB will also introduce a set of recommendations on management of risks associated with providing loans secured by residential property (see section 4.4) and a Pillar 2 instrument to reduce risks associated with concentrations of sovereign exposures in banks' balance sheets (see section 4.5).

All banks are required to hold the capital conservation buffer at the full amount of 2.5% of CET1 as from July 2014. In August 2014, the CNB also announced a countercyclical capital buffer, currently set at 0%.<sup>13</sup> The CNB sets this buffer rate on a quarterly basis about one year in advance. Information on the setting of this rate for the period starting in July 2016, including a detailed analysis of the factors which the CNB takes into account, is provided in section 4.3. As from 2016, banks will adopt the rates set in other member countries (or EEA countries) for the calculation of the countercyclical capital buffer. Up to a rate of 2.5% of the overall risk exposure banks will adopt the rate automatically. If the rate is higher than 2.5%, the CNB will recognise that rate or set a rate of 2.5%. As from 2016, banks will also adopt the rates set in non-member countries. For exposures in these "third" countries the CNB will be able to introduce a non-zero rate or raise a rate that is lower than 2.5% to 2.5%. If the rate is higher than 2.5%, the CNB will again be able to recognise it or set a rate of 2.5%.

Since November 2014, the CNB has set systemic risk buffer rates for the four most systemically important banks: 3% of risk-weighted exposures for Česká spořitelna and ČSOB, 2.5% for Komerční banka and 1% for UniCredit Bank. Under the relevant provisions of CRD IV, the buffer rate will have to be reviewed in two years' time at the latest, i.e. in the second half of 2016. Macroprudential authorities in a number of other EU countries have also introduced systemic risk buffers as a means of combating certain systemic risks.<sup>14</sup>

Under CRD IV and related implementing regulations of the EBA, the CNB is also required announce a list of institutions that in its view satisfy the definition of other systemically important institutions ("O-SIIs") by the end of 2015. Given the method the CNB has chosen for determining the set of institutions subject to the systemic risk buffer, it is reasonable to assume that the list of O-SIIs will largely overlap with the list of institutions for which the systemic risk buffer has been declared. Subsequently, the CNB may (but does not have to) declare a specific "buffer relating to other systemically important institutions" for O-SIIs. The CNB is not currently planning to do so. However, conversion of the

<sup>13</sup> The countercyclical capital buffer rate was set at 0% for the period starting in October 2015 and will remain at this level for the period starting in April 2016.

<sup>14</sup> A list of national macroprudential authorities is published on the ESRB website: <https://www.esrb.europa.eu/mppa/html/index.en.html>.

systemic risk buffer into the buffer relating to other systemically important institutions is not ruled out in the future. This will depend on developments in the European legislation.

### **The leverage ratio**

The leverage ratio is one of the capital tools constraining the systemic risk of excessive credit growth and leverage (see Table IV.2). Basel III defines it as the ratio of Tier 1 capital to non-risk-weighted exposures. It is to be implemented in full at the start of 2018. Basel III sets a preliminary regulatory limit of 3% for the leverage ratio, i.e. a bank's assets should not exceed its Tier 1 capital multiplied by 33. According to preliminary data, all but two Czech banks were compliant with this level at the end of 2014 (see Chart III.10 in section 3.1).

The Basel Committee is to set the final definition and calibration of the leverage ratio by the end of 2017. This final form may be affected by the debate on the sufficiency of the 3% limit currently ongoing not only within the Basel Committee and EU bodies, but also in many countries around the world. Some countries have already announced their intention to incorporate part of the capital buffers for systemically important banks or part of the countercyclical capital buffer into the leverage ratio.<sup>15</sup> This would involve the creation of a "macroprudential leverage ratio", which should reflect the total capital requirement expressed in terms of Tier 1 capital inclusive of capital buffers. At EU level, the ESRB<sup>16</sup> is analysing the macroprudential leverage ratio. It supports application of the macroprudential leverage ratio at the discretion of national macroprudential authorities.

### **Liquidity buffers**

A liquidity coverage requirement<sup>17</sup> comes into force this year. It is intended to strengthen the liquidity position of credit institutions and reduce their dependence on short-term financing or liquidity provided by the central bank. This general requirement is specified in more detail in a Commission regulation effective from 1 October 2015, which introduces the liquidity coverage ratio (LCR).<sup>18</sup> The LCR is defined as the ratio of the liquidity buffer to net liquidity outflows over a 30 calendar day stress period. The LCR will be phased in as follows: a minimum of 60% from October 2015 rising to 100% on 1 January 2018. The definition in the Commission regulation introduces several major changes compared to the general requirement. The requirement to conduct a stability test on all retail deposits has a substantial impact on the LCR calculation for the

15 The USA, the UK, Switzerland and the Netherlands have announced their intention to apply a higher leverage ratio limit for systemically important banks, and the UK also plans to incorporate part of the countercyclical buffer into the leverage ratio.

16 For details see *The ESRB Handbook on Operationalising Macro-prudential Policy in the Banking Sector*, where the section on the leverage ratio includes a passage on the macroprudential leverage ratio.

17 Articles 412(1) and 460(2) of the CRR.

18 Commission Delegated Regulation (EU) No. 2015/61 with regard to liquidity coverage requirement for credit institutions.

Czech banking sector.<sup>19</sup> Up to now, credit institutions have often applied a 15% outflow rate because of the difficulty of implementing this test. Given the large amount of retail deposits in the Czech banking sector (see section 3.1), this implies a relatively significant effect on outflows in the LCR denominator. However, the Commission regulation is to be amended and it is already clear that it will undergo further changes.

The implementation of the requirement for stable sources of funding in the form of the ratio of available to required sources of stable funding (the net stable funding ratio, NSFR) is behind schedule. The EBA is supposed to report to the European Commission by the end of this year on whether and how it would be appropriate to implement the NSFR requirement and identify potential impacts. The implementation date cannot be estimated at present.

#### **Regulatory changes prepared by the Basel Committee**

Planned changes in the international regulatory framework defined by the Basel Committee on Banking Supervision (BCBS) may also have major macroprudential effects. In its November 2014 report to the G20, the BCBS stated that there was a need to reduce excessive variability in banks' regulatory capital ratios. The objective of this plan is to improve the consistency and comparability of the calculation of capital requirements and boost confidence in the risk-weighted exposure system. This is to be achieved by improving non-modelled approaches, reviewing modelling practices, setting an aggregate capital floor for modelling approaches and recalibrating the leverage ratio requirements. The review is to be comprehensive and cover all types of risks and exposures. The BCBS will also work on reducing the number of national discretions and enhancing bank transparency.

In connection with the above plan, the BCBS in December 2014 opened consultations on revisions to the standardised approach (SA) for credit risk. The current approach is based on the use of external credit ratings to determine risk weights. The aim is to replace such ratings with risk assessments based on key risk drivers. The risk weights on corporate exposures would range from 60% to 300% on the basis of corporate revenue and leverage. For retail exposures (consumer credit in particular), the criteria to qualify for the 75% preferential risk weight would be tightened. Weights on exposures secured by residential property would range from 25% to 100% on the basis of LTV and DSTI ratios (see section 4.4). Exposures secured by commercial property would be either treated as unsecured or risk-weighted on the basis of the LTV ratio. Risk weights on interbank exposures would range from 30% to 300% on the basis of a capital ratio and an asset quality ratio.

<sup>19</sup> This test is needed in order to classify individual types of deposits in terms of their stability and to assign them with appropriate outflow rates.

### 4.3 THE SETTING OF THE COUNTERCYCLICAL CAPITAL BUFFER IN THE CZECH REPUBLIC

The countercyclical capital buffer (“CCB”) is a macroprudential tool designed to increase the banking sector’s resilience to cyclical risks associated with fluctuations in lending. The CNB sets the CCB rate on a quarterly basis. It was announced for the first time on 1 October 2014.<sup>20</sup> The CCB rate becomes legally binding on the institutions concerned upon the issuance of a provision of a general nature.<sup>21</sup>

#### Assessment of the current position of the Czech economy in the financial cycle

Overall growth in loans to the private sector responded only gradually to the economic recovery in 2014 and 2015 Q1. The annual growth rate of total loans to the private sector was 2.9% at the end of 2014, still below the long-term average (see Chart IV.16). The growth rate of the main component of total loans – bank loans – was 4.5% for households and 1.4% for non-financial corporations in 2014 (see Chart IV.17). It rose further in 2015 Q1. A slight increase can also be seen for loans provided by non-bank financial corporations engaged in lending, where the year-on-year growth stood at 3.4% for non-financial corporations and 2.1% for households at the end of 2014.<sup>22</sup> The growth rate of total loans in the non-financial corporations sector is being strengthened by continued growth in issuance of corporate bonds. The share of this type of financing in the total funds of the non-financial corporations sector has been increasing in recent years (see Chart II.28). However, the bond issuance pertains to a very limited number of firms, so its growth cannot be considered a sector-wide trend (issues of corporate bonds and related risks are discussed in more detail in section 2.2).

The ratio of credit to GDP, which the CNB is obliged to disclose under an ESRB recommendation, provides key information about the assessment of the current position of the economy in the financial cycle.<sup>23</sup> This ratio

<sup>20</sup> In accordance with CRD IV and its implementation into Czech law, the CNB took the opportunity to apply this macroprudential instrument before 2016, which is the binding date for its introduction into regulatory practice throughout the EU.

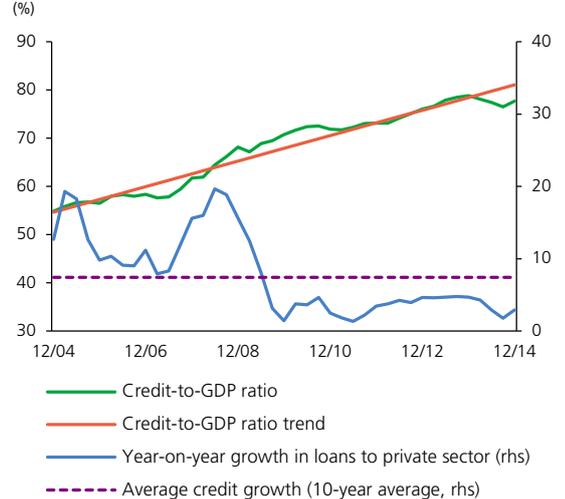
<sup>21</sup> Their texts are available on the CNB website: [http://www.cnb.cz/en/financial\\_stability/macroprudential\\_policy/countercyclical\\_capital\\_buffer/index.html](http://www.cnb.cz/en/financial_stability/macroprudential_policy/countercyclical_capital_buffer/index.html).

<sup>22</sup> However, the base period of 2013, to which the year-on-year changes in this text relate, was significantly below average in the case of loans provided by non-bank financial corporations to non-financial corporations. Loans from non-bank financial corporations are dealt with in more detail in section 3.1.

<sup>23</sup> According to the BCBS and an ESRB recommendation (*Recommendation (ESRB/2014/1) on guidance to EU Member States for setting countercyclical buffer rates*), the need to introduce a non-zero CCB rate is assessed on the basis of the deviation of the credit-to-GDP ratio from its long-term trend. This deviation is an overall indicator of the build-up of cyclical risks in the economy. In the ESRB recommendation, credit is defined as total loans (i.e. not only bank loans) to the private sector plus debt securities issued. In 2014 Q2, the credit-to-GDP ratio was greatly affected by methodological changes made to the national accounts, specifically the switch to the ESA 2010 methodology. Due to insufficient revision of the national accounts data, which contain information on total credit as defined by the BCBS, the current time series of the credit-to-GDP ratio only takes into account the revised GDP series. Conversely, the time series of total credit does not yet reflect changes associated with the switch to the new standards and the new BPM6 balance of payments manual (in particular, it does not reflect the switch in the reporting of cross-border inter-company loans from a net basis to a gross basis; this increases the previous stock of total

CHART IV.16

#### Growth in loans to the private sector

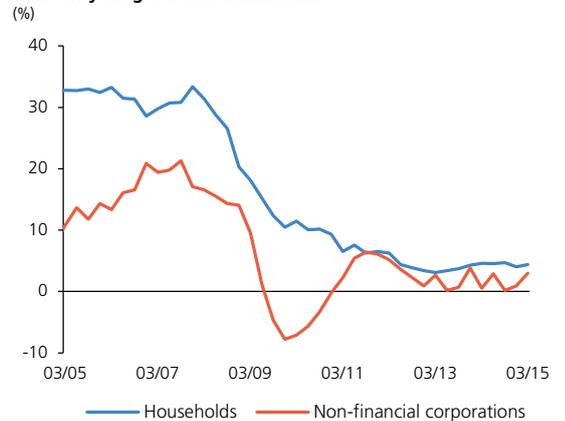


Source: CNB

Note: The total stock of credit to the private sector under BCBS methodology contains loans and bonds issued. The credit-to-GDP ratio trend is calculated using the HP filter and corresponds to indicator (3) in Table IV.3. The private sector comprises non-financial corporations, households and non-profit institutions serving households.

CHART IV.17

#### Year-on-year growth in bank loans

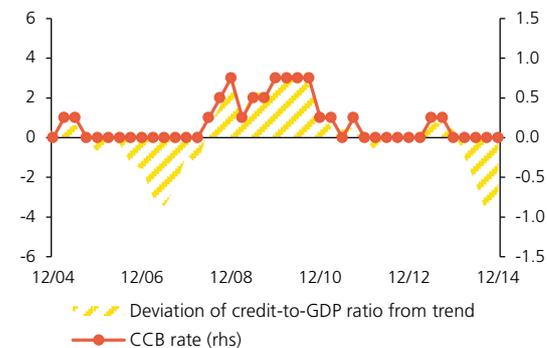


Source: CNB

Note: The data for households also include data for non-profit institutions serving households.

CHART IV.18

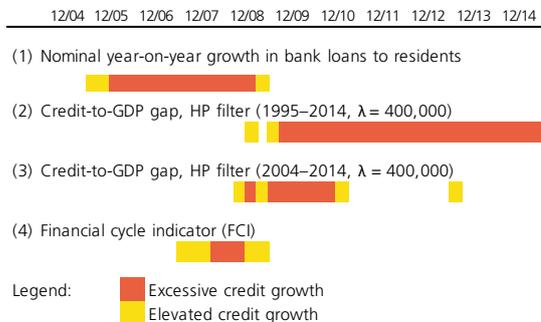
**Assessment of the need to set a non-zero countercyclical capital buffer rate**



Source: CNB  
 Note: This is an ex-post assessment, not an assessment in real time. The total stock of credit to the private sector under BCBS methodology contains loans and bonds issued. The credit-to-GDP ratio trend is calculated using the HP filter and corresponds to indicator (3) in Table IV.3. The private sector comprises non-financial corporations, households and non-profit institutions serving households.

TABLE IV.3

**Identification of excessive borrowing and accumulation of risks according to various indicators**



**For indicator 1:** y-o-y growth > 10 pp for elevated growth, > 15 pp for excessive growth. **For indicators 2–3:** credit-to-GDP gap > 2 pp for excessive growth, > 0.7 pp for elevated growth. **For indicator 4:** excessive growth for FCI > 0.5, elevated growth for FCI > 0.3.

Source: CNB

stood at 77.7% in 2014 Q4 (see Chart IV.16) and its deviation from the long-term trend was 6.0 pp. These values would imply a CCB reference rate of 1.25%. However, the information value of this indicator for the Czech Republic is greatly affected by the removal of bad loans from banks' balance sheets in the late 1990s and in the following decade, which resulted in a need to use alternative methods to set the CCB rate. In line with the ESRB recommendation, one option is to use an additional deviation of the credit-to-GDP ratio, one whose calculation is based on a shorter time series excluding the period during which bad loans were written off (i.e. the post-2004 time series). The deviation from the long-term trend calculated in this way is -3.4 pp, implying a zero CCB rate (see Chart IV.18 and Table IV.3).

The setting of a zero CCB rate is consistent with the aggregate financial cycle indicator (FCI), which the CNB uses to some extent to complement the recommended credit-to-GDP ratio. The FCI combines signals of cyclical risks from various segments of the economy. These signals cover both supply and demand factors (such as credit growth, property prices, the speed of private sector borrowing and interest rate spreads).<sup>24</sup> The currently observed FCI levels suggest that the financial cycle remains close to its trough and its recovery is gradual (see Chart IV.19 and Table IV.3). The individual components of the FCI are mostly in line with the overall economic situation and also suggest the onset of a recovery phase. Residential property prices recorded a slight increase in 2014, but the analyses indicate that the growth is still consistent with economic fundamentals. According to the *Baseline Scenario* of the current round of stress tests, continuing growth is expected in 2015. However, the growth should remain subdued and no major pick-up is expected, nor are any price bubbles expected to form (see sections 2.4 and 4.4). The speed of private sector borrowing relative to income is still low by comparison with the pre-crisis period, and total debt service does not currently represent an excessive burden overall.<sup>25</sup> Domestic equity indices were mostly flat in 2014, merely adding to the evidence of the absence of an excessively optimistic investment environment in this period. Within two months of the announcement of quantitative easing by the ECB in January 2015, however, the domestic equity index increased by around 9% (see Chart II.6). The evolution of banks' credit standards is a major factor indicating a shift of the economy to an expansionary phase of the business cycle. However, it has not yet been accompanied by changes in other types of cyclical risks. It is therefore appropriate to use instruments other than the countercyclical capital buffer to mitigate this source of risk (see section 4.4).

Overall, the relevant indicators can be assessed as suggesting that the position of the economy in the financial cycle did not move significantly

credit by more than CZK 0.5 billion). The long-term trend is calculated using the HP filter with a smoothing parameter of 400,000.

24 The financial cycle indicator (FCI) methodology is described in detail in the thematic article *An Indicator of the Financial Cycle in the Czech Economy* published in FSR 2013/2014.

25 However, this does not necessarily apply to specific segments of the credit market (see sections 4.1 and 4.4).

towards rapid growth in the period since the previous setting of the CCB rate (18 March 2015). The Czech economy as a whole is displaying a low level of risk associated with excessive credit creation. Given also that the level of cyclical risks remained broadly unchanged from the previous quarter, the CNB does not consider it necessary to set a non-zero CCB, so the rate will be left at its current level of 0%. The forecast for future credit growth in the *Baseline Scenario* of the current round of stress tests and for developments in relevant markets suggests that a zero CCB rate will probably be applied in the next two years as well. However, this probability has decreased as a result of a recovery in credit growth, an easing of credit standards and a slight improvement in investment sentiment.

**4.4 REGULATION OF RISKS ASSOCIATED WITH EXPOSURES TO THE PROPERTY MARKET**

Section 2.4 described current developments in property markets and identified risks associated with growth in residential property prices. This section assesses these risks using a formalised procedure. It also evaluates credit standards applied to new loans secured by property. Given the risks identified, it then presents a recommendation on the management of risks associated with the provision of retail loans secured by residential property.

**4.4.1 ASSESSMENT OF PROPERTY PRICE SUSTAINABILITY**

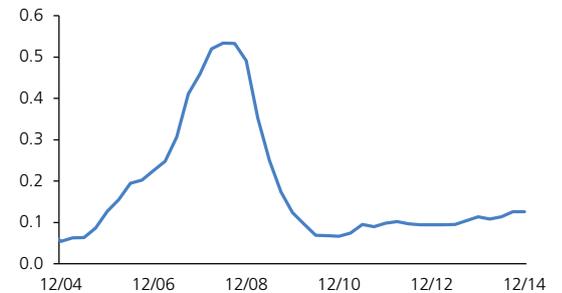
An assessment of the degree of overvaluation/undervaluation of property prices is important for evaluating the risks associated with exposures to the property market. In the case of the residential property market, the assessment is based on apartment prices. These prices are the most volatile in the residential property segment and may thus show the highest degree of overvaluation or undervaluation during the financial cycle.

In this Report, the CNB assesses apartment prices for the first time on the basis of a formalised approach combining the results of four statistical and econometric models.<sup>26</sup> Using this method, a modest overvaluation of 2.5% was estimated for apartment prices as of 2014 Q4.<sup>27</sup> Three of the four estimates entering the aggregate assessment indicate apartment price overvaluation in the range of 3.3%–4.2% (see Chart IV.20 and Table IV.4). Undervaluation of 1% was estimated only by the price-to-rent method, where the results are affected by a strong increase in rents in 2014. The results of this aggregate model-based approach to property

26 For details see the thematic article *A Comprehensive Method for House Price Sustainability Assessment* in this Report.  
 27 The thematic article assesses equilibrium apartment prices as of 2014 Q2, until when data on apartment transaction prices based on tax returns published by the CZSO are available. This section assesses apartment prices as of the end of 2014. The data on transaction prices based on tax returns were extended using data on transaction prices from a CZSO survey. On the one hand this extension of the time series allows us to assess the current data, but on the other hand the results may be affected by different dynamics of prices estimated by the CZSO from different data sources.

**CHART IV.19**

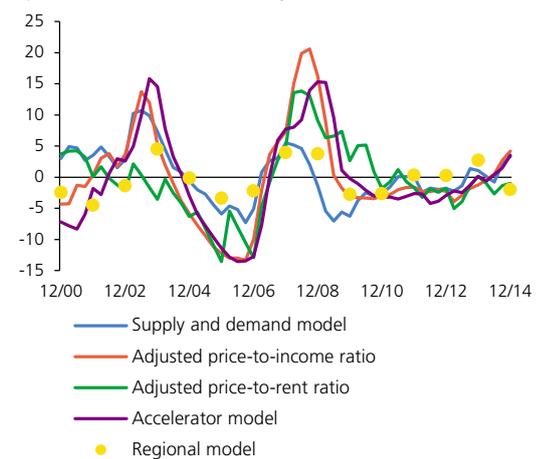
**Aggregate financial cycle indicator**  
(0 minimum, 1 maximum)



Source: CNB  
 Note: The FCI methodology is described in the thematic article *An Indicator of the Financial Cycle in the Czech Economy*, FSR 2013/2014.

**CHART IV.20**

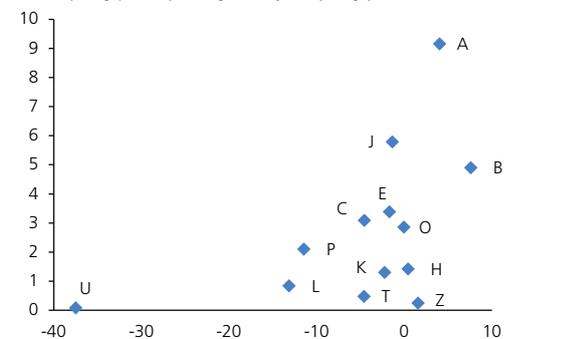
**Apartment price gaps according to various methods**  
(%; positive values indicate overvaluation, negative values undervaluation)



Source: CZSO, IRI, MRD, EC, CNB calculation

**CHART IV.21**

**Apartment price gaps – regional comparison**  
(%; x-axis: price gaps from panel regression; y-axis: price gaps from HP filter)



Source: CZSO, CNB calculation  
 Note: Price gaps from the panel regression are calculated on the basis of data for 1999–2015. Price deviations from the HP filter are calculated with lambda = 1,600. City abbreviations: A – Prague, B – Brno, C – České Budějovice, E – Pardubice, H – Hradec Králové, J – Jihlava, K – Karlovy Vary, L – Liberec, O – Olomouc, P – Plzeň, T – Ostrava, U – Ústí nad Labem, Z – Zlín.

TABLE IV.4

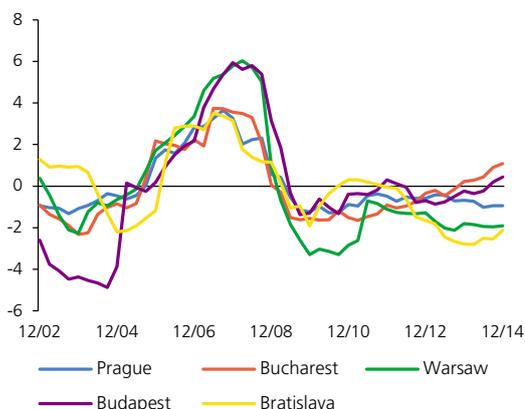
**Apartment price gaps according to various methods as of the end of 2014**  
(%)

Main methods	Degree of undervaluation/overvaluation
Supply and demand model	3.3
Accelerator model	3.5
Adjusted price-to-income ratio	4.2
Adjusted price-to-rent ratio	-1.0
Overall	2.5
Supporting methods	Degree of undervaluation/overvaluation
Statistical assessment (HP filter)	2.7
Regional model, average for regions	-2.0

Source: CNB calculations

CHART IV.22

**Office price gaps**  
(%; price gaps from panel regression)



Source: Jones Lang LaSalle, CNB calculation

price assessment are confirmed by a statistical assessment method based on the HP filter, which indicates apartment price overvaluation of 2.7%.

However, the assessment of equilibrium apartment prices at national level may mask differences between regions (see section 2.4). For this reason, the CNB also works with a regional apartment price assessment model,<sup>28</sup> which estimates the average price undervaluation in the regions at 2%. The results show that the overvaluation/undervaluation in some regions is linked with both the absolute level and dynamics of prices. The highest overvaluation was recorded in Prague (A) and Brno (B), whereas prices were most undervalued/least overvalued in Ústí nad Labem (U). The results of the model-based approach and the statistical approach based on the HP filter are again essentially consistent for the individual regions (see Chart IV.21).<sup>29</sup>

The assessment of commercial property prices focuses on office property prices, for which the largest risks were identified (see section 2.4). The CNB assesses equilibrium office property prices using an error-correction model applied to data on office property in Central European countries.<sup>30</sup> Office property prices in the Czech Republic were estimated as slightly undervalued by 1% in 2014 Q4 (see Chart IV.22). The Czech Republic thus ranks between those countries with slightly overvalued office property (Hungary and Romania) and those with more strongly undervalued prices (Poland and Slovakia).

#### 4.4.2 ASSESSMENT OF CREDIT STANDARDS FOR NEW LOANS SECURED BY RESIDENTIAL PROPERTY

Sustained growth in property prices becomes a risk to financial stability if it is accompanied by an easing of credit standards. This can happen through the provision of loans secured by residential property with high loan-to-value ratios or through more benevolent requirements as regards the creditworthiness of loan applicants. These credit standards are normally measured using the LTV (loan-to-value) and LTI (loan-to-income) ratios. Standards applied to loans for house purchase were relaxed during 2014 and 2015 Q1 (see section 2.3). To assess the degree of easing of credit standards for loans secured by residential property, however, we need to know the LTV and LTI distributions of new loans secured by residential property. To this end, the CNB at the start of 2015 conducted

28 See Hlaváček, M., Komárek, L. (2011): *Regional Analysis of Housing Price Bubbles and Their Determinants in the Czech Republic*, Czech Journal of Economics and Finance, No. 1, 2011.

29 The undervaluation estimated on the basis of panel regression is suspiciously high only for Ústí nad Labem (U). (This strong undervaluation also drives down the average undervaluation in 2014 in Chart IV.20.) Compared to the HP filter, the panel regression also reduces the degree of overvaluation in Prague (A) and Jihlava (J). Importantly, none of the methods indicates overvaluation of greater than 10% in any region.

30 For the calculation method, see the thematic article *Office Property in Central European Countries* in FSR 2013/2014.

a survey among banks regarding the LTV and LTI category structure of new loans provided in 2014.<sup>31</sup>

In 2014, the distribution of new loans recorded a considerably higher share of loans in the 80%–90% LTV category than the LTV distribution of stock of loans (see Chart IV.23). The LTV distribution of new loans was significantly skewed, as the mean LTV was much lower than the LTV for the most frequently granted loans.<sup>32</sup> This indicates the application of internal LTV limits by banks.

The LTV distribution of new loans also differed according to bank size (see Chart IV.24). High LTV levels for new loans (above 90%) were recorded primarily by large banks and building societies. In the case of building societies, this may be partly due to their different business model under the building savings legislation.

The LTI distribution of new loans was U-shaped – loans with very low LTIs (below 3) or very high LTIs (above 5.5) were the most frequent. In addition, the proportion of new loans with high LTIs increased in 2014. If loans with high LTVs simultaneously had low LTIs, the credit risk of loans with high LTVs would be low. The survey also reveals that there was a positive relationship between LTI and LTV levels in the structure of new loans in 2014 (see Chart IV.25). With increasing LTI, the share of loans with LTVs below 70% decreased and, conversely, the proportion of loans with LTVs between 80% and 100%, and partly also of loans with LTVs above 100%, increased. With increasing LTI, the average loan amount also increased,<sup>33</sup> whereas average income did not differ much across LTI levels. However, this phenomenon may be partly due to different housing affordability across regions,<sup>34</sup> as households in regions with higher house prices may take out larger loans (see section 2.4).

Overall, the survey of the LTV and LTI structure of new loans suggests a modest shift towards easier credit standards. As property prices are still rising slowly and remain broadly in line with fundamentals, this easing does not pose any direct risk to financial stability. However, given the potential risks associated with the future evolution of property prices (see section 2.4) and loan dynamics (see section 4.3), the CNB deems it necessary to introduce instruments to counteract the risk of feedback between property price growth and growth in lending. For this reason, the CNB will in June 2015 issue a recommendation on the management

31 Fifteen banks, accounting for 98.3% of all loans for house purchase provided in 2014, took part in the survey.

32 The distribution is skewed to the left, i.e. there are more outliers to the left than to the right of the mean, and most of the values are to the right of the mean. The skewed LTV distribution of new loans means, among other things, that the mean LTV is not very appropriate for describing the market situation. A more suitable indicator is the median LTV, which for new loans reached a relatively high level of 76.5% in 2014 (versus a mean LTV of 63.1%). Half of the loans provided in 2014 thus had LTVs above this level.

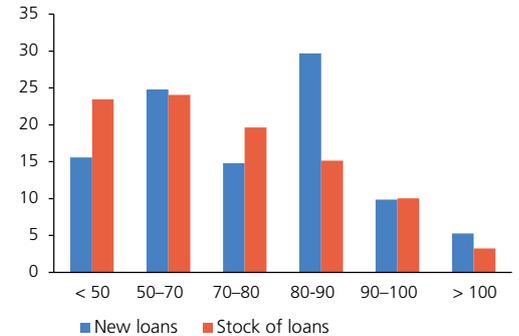
33 The amount of loans in the LTI > 5.5 category was 2.2 times higher than that in the LTI < 3 category. With increasing LTV, the amount of loans increased up to LTV 60%–70%, then was stable, and then started falling again from LTV 80%–90%.

34 In some regions, higher apartment prices are not always sufficiently offset by higher average wages.

CHART IV.23

**Comparison of the LTV distribution of new loans and the stock of loans**

(x-axis: LTV in %; y-axis: share of loans in %)

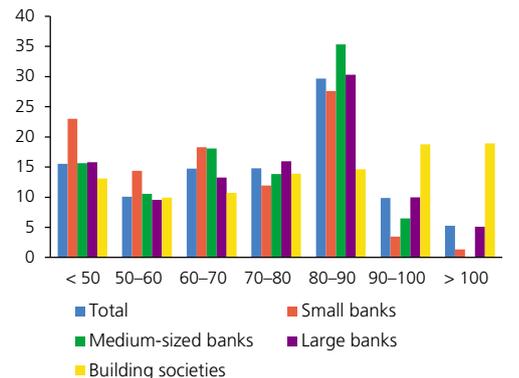


Source: CNB

CHART IV.24

**Distribution of new loans by LTV and bank size**

(x-axis: LTV in %; y-axis: share of loans in %)



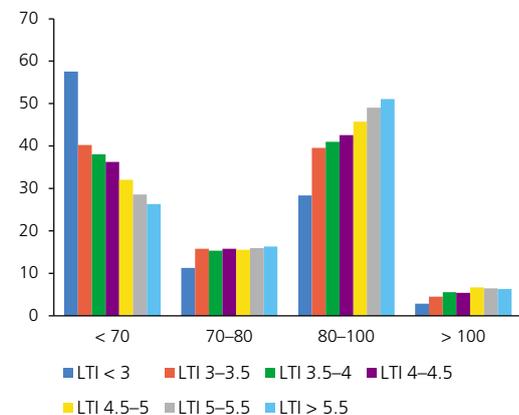
Source: CNB

Note: The breakdown by bank size does not necessarily correspond to the size of the market shares for loans for house purchase.

CHART IV.25

**Relationship between LTV and LTI for new loans**

(x-axis: LTV in %; y-axis: share of loans in %)



Source: CNB

of risks associated with the provision of retail loans secured by residential property, which is described in the next section.

#### 4.4.3 RECOMMENDATION ON THE MANAGEMENT OF RISKS ASSOCIATED WITH THE PROVISION OF RETAIL LOANS SECURED BY RESIDENTIAL PROPERTY

**The CNB is issuing preventive macroprudential recommendations for credit institutions directed against potential growth in risks in the area of loans secured by residential property**

The CNB has prepared a recommendation (or rather a set of recommendations) for credit institutions providing retail loans secured by residential property. This recommendation is based on a recommendation of the European Systemic Risk Board (ESRB),<sup>35</sup> recommendations of other international authorities and EU legislation.<sup>36</sup> This CNB recommendation pursues one of the major intermediate objectives of macroprudential policy, namely to mitigate and prevent excessive credit growth and leverage. It also takes into account prudential principles and recommended procedures for meeting the objectives of microprudential supervision and consumer protection. Similar measures are in place in other countries. A summary of the application of such instruments inside and outside the EU was provided in FSR 2013/2014 (pp. 98–100).<sup>37</sup>

**The recommendations are intended to prevent any escalation of risks in the banking sector due to credit and property market developments**

In previous Financial Stability Reports, the CNB reported that the Czech credit and residential property markets were stable and were not a direct source of risks to financial stability. The CNB also stated that this situation was not necessarily permanent and it would therefore prepare and legislate for tools preventing the potential build-up of systemic risks in the banking sector. Such build-up usually occurs as a result of growth in loans secured by residential property combined with a concurrent easing of the interest rate or non-interest rate component of the credit conditions and rising residential property prices. The CNB regularly analyses loans secured by residential property and the property market situation. Where it identifies rising and increased risks, it is ready to activate the relevant instruments to reduce the financial sector's vulnerability to potentially adverse developments in economic activity and conditions on the property market with negative impacts on financial stability in the Czech Republic.

**The recommendations include quantitative limits on the LTV ratio and qualitative criteria to ensure that credit standards comply with the criteria of sufficient tightness and prudence**

The main instruments listed in the ESRB recommendation for meeting the above property financing-related intermediate objective include an upper limit on the LTV ratio. The LTV limit is set so as to reflect the possible volatility of property prices and the potential for such prices to fall during recessions or crises. As a result, when purchasing property, borrowers will

35 ESRB Recommendation on Intermediate Objectives and Instruments of Macroprudential Policy (ESRB/2013/1).

36 Financial Stability Board (2012): *FSB Principles for Sound Residential Mortgage Underwriting Practices*; European Banking Authority (2013): *Opinion of the European Banking Authority on Good Practices for Responsible Mortgage Lending*; Directive 2014/17/EU on Credit Agreements for Consumers Relating to Residential Immovable Property and Amending Directives 2008/48/EC and 2013/36/EU and Regulation (EU) No 1093/2010.

37 In 2014, macroprudential measures targeted at property financing-related risks were adopted, for example, in Slovakia, Belgium, Denmark and Estonia. A complete list of macroprudential measures in EU countries is available in the *Macro-prudential policy actions* section of the ESRB website ([www.esrb.europa.eu](http://www.esrb.europa.eu)).

not enter into commitments that significantly exceed the collateral value, and even in bad times the reduced property value will still serve as sufficient collateral. The ESRB recommendation also states that Member States should select and apply any additional macroprudential instruments taking into account their effectiveness and efficiency, to achieve each of the intermediate objectives. As regards the risks associated with the provision of loans secured by residential property, the instruments should ensure that credit standards comply with the criteria of sufficient tightness and prudence. Such instruments include limits on the LTI and debt service-to-income (DSTI) ratios.

An assessment of information gathered by the CNB in the course of its supervisory work over the last two years reveals that credit institutions operating in the Czech Republic are mostly prudent when providing loans secured by residential property. However, there are signs of some easing of credit standards in this segment. Foreign experience indicates that preventive measures for counteracting growth in risks associated with the provision of loans secured by residential property are more effective in a situation where the risks on the credit and property markets are still low. The CNB is therefore issuing a set of quantitative and qualitative recommendations for banks, foreign bank branches and credit unions. These recommendations, described below, define correct procedures and standards for the provision of loans secured by residential property. They are aimed at enhancing existing internal risk management systems in such institutions and encouraging a prudent approach to providing loans secured by residential property.

*Recommendation A* is focused on compliance with LTV limits for new loans. It includes a limit on new loans secured by residential property with a high LTV ratio relative to total new loans of this kind provided in a certain period. Specifically, new loans secured by residential property with an LTV of more than 90% should not exceed 10% of the total amount of such loans provided in any given quarter. A limit of 100% is also applied to the LTV ratio for any individual loan. In addition, circumvention of the above limits through the concurrent provision of unsecured consumer credit relating to the residential property concerned is defined as unacceptable practice. The recommendation concerning the LTV ratio is preventive in nature. It does not preclude institutions from providing loans with a higher LTV in justified cases, i.e. in cases where other indicators considered in the application assessment process together indicate a high probability of the loan being repaid.

In addition to *recommendation A* regarding the LTV ratio, the CNB provides several other recommendations to credit institutions. Some of them concern the principles of prudent provision of retail loans. Recommendation B is directed at the assessment of clients' ability to service their loans and to withstand increased stress in the event of adverse economic developments. When providing retail loans secured by residential property, institutions should prudently assess indicators of clients' ability to service loans from their own resources and set internal limits for such indicators. They can do so by, for example, setting limits on LTI, DSTI or similar ratios in their internal methodologies. Institutions

**The recommendations are intended for banks, foreign bank branches and credit unions**

**Recommendation A:  
LTV limits for new loans**

**Recommendation B:  
Assessment of clients' ability to service loans from their own resources**

should also carefully assess clients' ability to service their loans under adverse conditions (i.e. they should stress-test clients' ability to repay), especially in the event of a sizeable fall in income or a rise in lending rates. This is particularly important in the current period of historically low nominal interest rates, which may create an illusion of favourable debt service in the long term. In such times, it is essential to adopt a conservative approach taking into account the possibility of a pronounced increase in lending rates in the medium to long term.

**Recommendation C:  
Loan term and repayment schedule**

The experience of other economies shows that an excessive easing of credit standards can become a source of systemic risk. This should be prevented by *recommendation C*, according to which the term of the loan should reflect the lifetime of the property and the expected remaining period of economic activity of the client and, as a rule, should not exceed 30 years. Owing to the risk of circumvention of *recommendation A*, it is stipulated that the term of unsecured consumer credit provided to clients that have a loan secured by real estate should not exceed 8 years. Institutions should not provide retail loans secured by residential property with a non-standard repayment schedule leading to a shift of the client's credit commitments to a later period. This refers to loans negotiated with partial or full deferral of interest or principal payments, with gradually rising payments, with a temporarily reduced interest rate, or with a less frequent than monthly repayment schedule. The provision of such loans may give the client the illusion of easy repayment and defers risks to the future. In bad times, these deferred risks manifest themselves much more strongly.

**Recommendation D:  
Approach to increasing loans when refinancing**

Increases in principal during loan refinancing are a potential mechanism of excessive easing of credit standards. *Recommendation D* therefore states that if institutions refinance a loan secured by residential property and simultaneously increase the outstanding amount of principal, they should proceed in the same manner as in the case of new loans. If they increase the outstanding amount of a refinanced loan by more than 10% or CZK 200,000, they should separately assess compliance with all the prudential risk management principles and determine the current value of the property serving as collateral.

**Recommendation E:  
Lending through intermediaries**

In *recommendation E*, the CNB points to the need to apply a prudent approach when working with loan intermediaries. Institutions should consider the risks associated with the different interests of intermediaries, as these also create potential for an excessive easing of credit standards. For loans negotiated by intermediaries, institutions should separately monitor credit risk and compare it with that on other loans secured by residential property.

**Recommendation F:  
Financing of buy-to-let purchases of residential property**

The final recommendation, *recommendation F*, focuses on the risks associated with the growing interest in providing loans to finance buy-to-let purchases of residential property. For credit risk management purposes, institutions are recommended to identify and separately monitor the different characteristics of owner-occupied and buy-to-let portfolios of loans secured by residential property.

The CNB will regularly assess compliance with the above recommendations. The results will be published in the Financial Stability Report. If increased risks to financial stability are identified, the CNB will be ready to tighten the relevant parameters of individual recommendations, to expand the recommendations as a whole, or to convert them into supervisory benchmarks.

#### 4.5 RISKS ASSOCIATED WITH SOVEREIGN EXPOSURES

The CNB has repeatedly indicated in its Financial Stability Reports that it closely monitors the build-up of sovereign exposures in domestic banks' balance sheets.<sup>38</sup> This is due mainly to risks stemming from links between the banking and government sectors.<sup>39</sup> The share of all government bonds (91% of which are domestic bonds) in the total assets of credit institutions in the Czech Republic was up slightly year on year at the end of 2014 (by 0.6 pp to 16.6%). The share of domestic government bonds in assets remained stable (15.2%). However, it is above average by international comparison (see Chart IV.26).

The CNB has prepared an internal methodology (a new prudential supervisory tool) for reviewing and assessing the risk of systemic concentration of sovereign exposures under Pillar 2. It conducted a public consultation on the draft version in spring 2015.<sup>40</sup> The tool is based on the fact that CRD IV requires credit institutions to ensure consistent and effective management of concentration risk in their risk management systems. Concentrated sovereign exposures are no exception.<sup>41</sup> According to EBA guidelines, national supervisory authorities should assess concentration risk management.<sup>42</sup> When performing supervision, the CNB will therefore review and assess at least once a year, and from now on according to the methodology described below, whether the arrangements, strategies, procedures and mechanisms the credit institution has in place do in fact ensure proper management and coverage of this risk.<sup>43</sup> One of the intermediate objectives of macroprudential policy recommended by the ESRB also focuses on exposure concentration.<sup>44</sup>

38 In this section, "credit institution" means an institution having its registered office in the Czech Republic, i.e. a bank pursuant to Act No. 21/1992 Coll., on Banks, or a credit union pursuant to Act No. 87/1995 Coll., on Credit Unions.

39 For more information on the risks stemming from the relationship between the banking and sovereign sectors, see the article *Fiscal Sustainability and Financial Stability* in FSR 2012/2013.

40 CNB (2015): Consultation paper: Internal CNB methodology for the review and assessment of sovereign exposure concentration risk.

41 Articles 30 and 42 of Decree No. 163/2014 Coll., on the performance of business of banks, credit unions and investment firms.

42 According to EBA guidelines (Guidelines on common procedures and methodologies for the supervisory review and evaluation process, article 154), supervisory authorities should assess the degree of concentration of exposures to individual countries, including sovereign exposures, as part of the Pillar 2 supervisory process.

43 Article 25c of Act No. 21/1992 Coll., on Banks, Article 21a of Act No. 87/1995 Coll., on Credit Unions, Article 135b of Act No. 256/2004 Coll., on Capital Market Undertakings.

44 ESRB recommendation on intermediate objectives and instruments of macroprudential policy (ESRB/2013/1), page 9, second paragraph: "to limit direct and indirect exposure concentrations, taking into account their degree of riskiness. Direct concentration risk arises from large exposures to the non-financial sector (e.g. the housing market, sovereigns)..."

**An assessment of credit institutions' compliance with the recommendations will be published each year in the Financial Stability Report**

**Domestic credit institutions face sovereign exposure concentration risk**

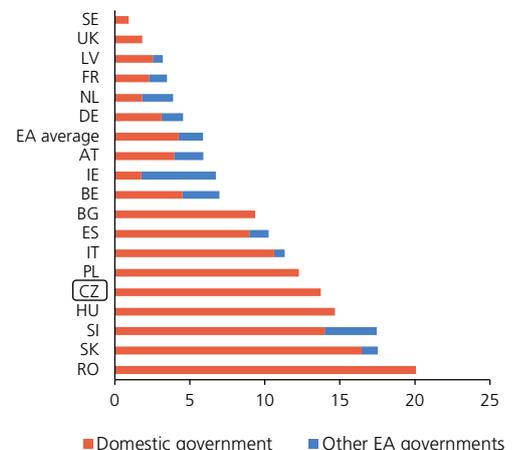
**The CNB has prepared a supervisory tool in the form of a methodology for checking the proper management of sovereign exposure concentration risk**

**This tool is neither a new regulation nor a national discretionary requirement**

**CRD IV requires institutions to ensure consistent and effective management of concentration risk; national supervisory authorities assess management of this risk**

CHART IV.26

Share of government bonds in MFI\* balance sheets  
(% of assets of MFIs\*)



Source: ECB

Note: Data as of March 2015. For banks in non-euro area countries, euro area government bonds are not included, as they do not offer a direct alternative to domestic government bonds. \* Including credit institutions and money market funds, excluding central banks.

**The tool motivates institutions to treat systemically important sovereign exposures prudently**

The purpose of the tool is to motivate credit institutions to adopt a prudent approach to sovereign exposures that are starting to take on systemic importance. In simple terms, sovereign exposures are exposures to individual governments and their agencies in EU Member States in all currencies, to which exemptions apply under Pillar 1 (the exemptions for sovereign exposures are described in more detail in FSR 2013/2014, p. 104).<sup>45</sup> The methodology defines an important sovereign exposure as an exposure held by a credit institution with a minimum ratio of 100% to its eligible capital. It becomes systemic if the assets of credit institutions with important exposures exceed 5% of their total assets. Each year, the CNB assesses whether sovereign exposures have reached systemic importance according to this rule and publishes this information in the Financial Stability Report.

**The internal methodology divides a sovereign exposure into a below-limit and above-limit part and sets an additional capital requirement for the above-limit part when increased risk is identified**

The main feature of the new supervisory tool is a percentage *limit* on each sovereign exposure. It divides the exposure into a below-limit and above-limit part. The limit is a function of the sovereign risk indicator (ISR) estimated by the CNB (see Box 6). The ISR is key to the calculation not only of the sovereign exposure limit, but also of any potential capital requirements. Simply put, the ISR is a variable lying within the range of 0%–100% indicating the risk of default on a monitored sovereign exposure (see Box 6). The sovereign exposure limit ranges between 222% and 0% of eligible capital.<sup>46</sup> The limit decreases with an increasing riskiness of the sovereign exposure. If the ISR is 0%, the limit is at its upper bound of 222% of eligible capital, whereas if the ISR is 100%, the limit is at the lower bound of zero. If sovereign exposures are considered to be safe, the limit is more than double the eligible capital.

**The CNB would indicate any additional capital requirement well in advance**

The CNB will require credit institutions to meet an additional capital requirement for the above-limit part of the exposure. However, this will apply only where it finds in a concentration risk management review conducted in individual credit institutions that the *coverage is insufficient* with regard to the riskiness of the sovereign exposure.

The CNB will set additional capital requirements for institutions at the *three-year horizon*, at the earliest when the ISR outlook at this horizon exceeds a “soft” threshold of 5% and the results of an expert analysis<sup>47</sup> confirm that an additional capital requirement is necessary.<sup>48</sup> If a “hard” ISR threshold of 8% is exceeded, it will be indicated that an additional capital requirement must be met unconditionally at the three-year

45 A similar sovereign exposure definition is given in Article 4(61) of Directive 2014/65/EU on markets in financial instruments (MiFID II) (“sovereign debt”).

46 The upper bound of the limit of 222% at an ISR of 0% corresponds to the bank’s ability to cover the loss with capital should the issuer default and should 45% of the exposure be written off (LGD = 45%). As the limit decreases linearly between the two ISR bounds, its amount in CZK billions can be expressed for any ISR value as  $((1 - \text{ISR}) * \text{eligible capital}) / 0.45$ .

47 The expert analysis includes an assessment of the contributions of individual variables to the excess over the “soft” threshold (see Table IV.1 Box) and an evaluation of other macroeconomic conditions that cannot be modelled.

48 If the expert analysis does not confirm that an additional capital requirement is necessary, the CNB will step up its monitoring. Institutions will have the duty to manage risks with increased prudence.

horizon. The ISR outlook will be published every year in the Financial Stability Report.

Three years after the additional capital requirement is indicated, the CNB will set the above-limit part of sovereign exposures for individual institutions. Potential additional capital requirements relating to the above-limit part of the exposures will be applied. The risk weight will be derived from the standard formula set out in Article 153 of the CRR. The PD parameter will be replaced by the *current* ISR value (not the original ISR outlook obtained from the stress test). Furthermore, an LGD of 45% and a maturity of 2.5 years will be applied.<sup>49</sup>

If a credit institution already creates a capital requirement to cover risk stemming from the sovereign exposures concerned on the basis of the IRB approach under Pillar 1 or on the basis of its own risk management system under Pillar 2, the CNB will take this into account. The already allocated capital will be subtracted from the additional capital requirement for the coverage of concentration risk arising from above-limit sovereign exposures.

#### BOX 6: THE SOVEREIGN RISK INDICATOR AND THE PUBLIC FINANCE STRESS TEST METHODOLOGY

The ISR is a variable taking values in the range of 0%–100% which aims to assess the risk of sovereign exposure default. For the purposes of estimating the ISR, sovereign exposure default means a write-off of the exposure, government debt restructuring or the launch of an international economic aid programme, for example by the IMF. The ISR is constructed on the basis of a statistical analysis of historical observations of debt crises and selected variables. These explanatory variables can be divided into several categories. The first category is made up of fiscal variables describing the performance of public finances – the general government primary balance and general government debt and its maturity, currency and territorial structure. The second category comprises macroeconomic variables affecting public finances – real economic growth, the current account balance and the government bond yield. The last category contains additional indicators reflecting the soundness of the financial system (a binary variable indicating whether the economy is going through

TABLE IV.1 Box

#### Construction of the sovereign risk indicator

	Critical limit	fpr (%)	fnr (%)	Weight (%)
<b>Macroeconomic variables</b>				
Real GDP growth (%)	< -2.3	4.8	65.0	6.3
Current account balance (% of GDP)	< -1.8	47.6	10.0	8.9
Gross national savings (% of GDP)	< 19.3	26.5	35.0	8.1
External debt (% of GDP)	> 99.6	18.0	56.0	5.5
Difference between real GDP growth and real GB yield (pp)	> 6.3	9.0	69.3	4.5
<b>Fiscal variables</b>				
Government debt (% of GDP)	> 64.7	28.0	60.0	2.5
Primary balance (% of GDP)	< -3.2	17.1	45.8	7.8
10Y government bond yield (%)	> 10.8	30.5	34.1	7.4
Government debt maturing within one year (% of GDP)	> 19.0	23.9	62.3	2.9
Share of government debt maturing within one year (%)	> 21.7	52.7	24.6	4.8
Share of foreign currency debt (%)	> 27.1	31.0	47.2	4.6
Share of non-residents in debt holdings (%)	> 34.9	49.9	20.2	6.3
<b>Institutional variables</b>				
Government effectiveness (WGI score)	< 1.0	33.9	16.8	8.3
Political stability (WGI score)	< 0.8	40.4	13.4	7.8
Rule of law (WGI score)	< 1.2	44.9	10.5	7.5
Banking crisis	> 0	6.4	75.0	3.9
Past sovereign defaults	> 0	21.5	65.0	2.8

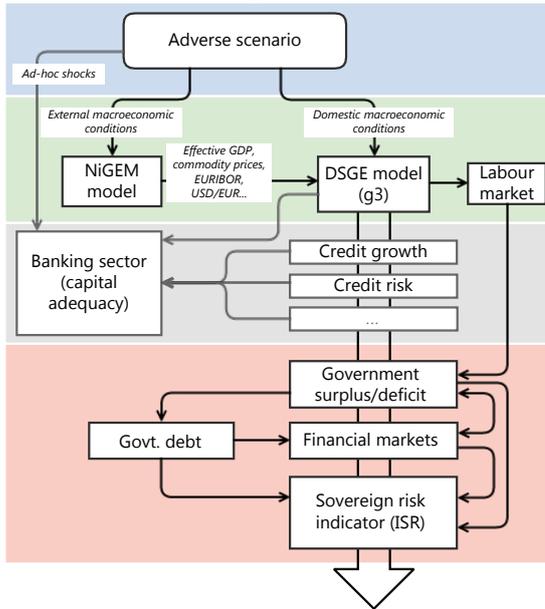
Source: CNB; for other sources see footnote 52

Note: fpr (fnr) stands for false positive (negative rate). The symbol > (<) denotes that a higher (lower) variable means the critical limit has been exceeded and increased risk is indicated. Higher WGI scores mean higher institutional quality. The auxiliary composite indicator *CI* is the sum of the weights of variables that are above their thresholds. The ISR is subsequently calculated as  $ISR = \exp(-8.1+10.1CI)/(1+\exp(-8.1+10.1CI))$ .

<sup>49</sup> The actual values of the explanatory variables for the previous year, known as of the end of March, will be used to calculate the current ISR value. Where final data are not available, preliminary data will be used. In 2015, for example, the current ISR value would be determined using the values in column 2 of Table IV.5 (header "2014").

CHART IV.1 Box

## Public finance stress test diagram



Source: CNB

a financial sector crisis), external debt, past debt defaults and indicators of government effectiveness, political stability and rule of law.<sup>50</sup>

The relationships between sovereign exposure default and the explanatory variables are modelled using the noise-to-signal method, which is used, for example, by the European Commission to construct public debt crisis early warning indicators.<sup>51</sup> Using data from more than 50 countries between 1980 and 2014,<sup>52</sup> a critical limit is found for each variable monitored. This limit divides default and non-default observations in such a way that it minimises the sum of the false positive rate (*fpr*) and the false negative rate (*fnr*).<sup>53</sup> Exceeding the critical limit can be regarded as a warning signal. A higher number of warning signals for a higher number of variables means a higher risk of default. A composite indicator is constructed from all the observed signals using a weighted average where each signal is weighted by its ability to distinguish between default and non-default observations ( $1-fpr-fnr$ ). The composite indicator is then recalibrated to the ISR using logistic regression (see Table IV.1 Box).

Projections of the main variables entering the ISR are obtained using a public finance stress test.<sup>54</sup> In the context of the current framework for regular stress testing at the CNB, the public finance stress test is a system of interconnected models simulating individual parts of the economy and their effect on public finances. A simplified diagram of the test is shown in Chart IV.1 Box.

Data on the state of the economy at the end of the previous year are the starting point of the test. Subsequent developments over

50 Past debt defaults are represented by a binary variable indicating whether the issuer has defaulted in the past ten years. The government effectiveness, political stability and rule of law indicators are taken from the World Bank's Worldwide Governance Indicators database.

51 See Berti, K., Salto, M. and Lequien, M. (2012): *An Early-Detection Index of Fiscal Stress for EU Countries*, European Economy, Economics Papers 475, December 2012.

52 The data for the ISR calibration are taken from the databases Economist Intelligence Unit Country Data, International Monetary Fund IFS and GFS, World Bank Worldwide Governance Indicators and Moody's Sovereign Default and Recovery Rates and from the articles Emanuele, et al. (2011): *Assessing Fiscal Stress*, IMF Working Papers; Cruces, J. J., and Trebesch, C. (2013): *Sovereign Defaults: The Price of Haircuts*, American Economic Journal: Macroeconomics 5(3); Reinhart, C. M., Rogoff, K. S., and Savastano, M. A. (2003): *Debt Intolerance*, Brookings Papers on Economic Activity 34. The sample of countries consists mainly of EU and OECD member countries. Countries with a high proportion of official creditors (the USA, Japan, the UK and Switzerland) were left out of the sample.

53 The false positive (negative) rate is the ratio of the number of false positive (negative) signals to the number of all actual negative (positive) observations. In this case, a default observation/signal is regarded as "positive". It is considered an error if the variable exceeds (does not exceed) the critical limit when default subsequently did not (did) occur.

54 Some variables (for example from the "institutional variables" category) are not projected using the stress test and the latest observation is assumed for the entire test horizon.

the three-year horizon are derived from a stress scenario that contains assumptions about adverse shocks to the main macroeconomic variables and other additional shocks reflecting currently perceived risks, especially market risk. Some of these macroeconomic variables directly enter the calculation of the ISR. The general government finance projection is calculated on the basis of these assumptions and initial data.

The general government surplus/deficit is projected on the basis of individual government revenue and expenditure items. The projections of the variables entering the ISR calculation are an average of two variants. The first variant models government revenues and most government expenditures on the basis of GDP growth in the stress scenario. The projection uses the structure of the individual revenue and expenditure categories according to their share in GDP in line with the CNB's fiscal forecast.<sup>55</sup> The second variant assumes that expenditures will remain at the level foreseen in the CNB fiscal forecast. Expenditures on old-age pensions, health care, unemployment benefits and interest payments enter both variants in the same way. They are modelled on the basis of adverse shocks to GDP, wages, inflation, the unemployment rate and money market rates in the stress scenario.

Old-age pension expenditure is a function of the expected number of future pensioners and the amount of their pensions, calculated assuming the current pension-increase scheme for already awarded pensions and a constant replacement rate for newly awarded pensions. Health care expenditure is based on the cost profiles of individual population groups according to age and gender. Interest payments are based on the debt portfolio structure and reflect expected financial market developments.

The financial markets block simulates a change in market conditions for the issuance of new government debt reflecting the adverse scenario. The yield on new government debt is projected using a statistical model in which the explanatory variables are the main macro-financial and fiscal variables: growth in government debt, the issuer's rating, money market interest rates, expected inflation and the dollar yield curve. The model is estimated by the panel regression method on a sample of data for 35 advanced countries over the last 24 years. The sample of countries includes stabilised countries as well as countries which faced a debt crisis during this period. Sovereign issuer credit risk and the monetary conditions are thus both taken into account. To maintain the dynamics over time, the model assumes that even past yield

TABLE IV.5

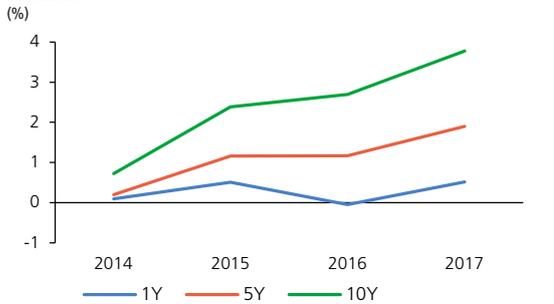
Public finance stress test	2014	Adverse Scenario			Critical limit
		2015	2016	2017	
<b>Macroeconomic variables</b>					
Real GDP growth (%)	2.0	-2.9	-4.1	-2.0	< -2.3
Current account balance (% of GDP)	0.6	2.0	-2.8	-3.4	< -1.8
Gross national savings (% of GDP)*	25.9	25.9	25.9	25.9	< 19.3
External debt (% of GDP)*	56.5	56.5	56.5	56.5	> 99.6
Difference between real GDP growth and real GB yield (pp)	-2.8	4.1	10.8	6.6	> 6.3
<b>Fiscal variables</b>					
Government debt (% of GDP)	42.6	43.5	53.1	63.6	> 64.7
Primary balance (% of GDP)	-0.7	-1.5	-4.3	-6.5	< -3.2
10Y government bond yield (%)	1.6	2.4	2.8	4.0	> 10.8
Government debt maturing within one year (% of GDP)	6.8	7.2	9.1	11.4	> 19.0
Share of government debt maturing within one year (%)*	16.0	16.6	17.1	17.9	> 21.7
Share of foreign currency debt (%)*	14.3	14.3	14.3	14.3	> 27.1
Share of non-residents in debt holdings (%)*	31.7	31.7	31.7	31.7	> 34.9
<b>Institutional variables</b>					
Government effectiveness (WGI score)*	0.9	0.9	0.9	0.9	< 1.0
Political stability (WGI score)*	1.1	1.1	1.1	1.1	< 0.8
Rule of law (WGI score)*	1.0	1.0	1.0	1.0	< 1.2
Banking crisis*	No	No	No	No	> 0
Past sovereign defaults*	No	No	No	No	> 0
<b>Sovereign risk indicator (ISR, %)</b>	-	<b>0.28</b>	<b>2.37</b>	<b>1.27</b>	

Source: CNB; for other sources see footnote 52

Note: \* Variable not modelled, last known value assumed in projection. The figure for the share of non-residents in debt holdings is derived statistically from the balance of payments. According to the quarterly financial accounts methodology, this share is 22%. The symbol > (<) denotes that a higher (lower) variable means the critical limit has been exceeded and increased risk is indicated. Where the limit is exceeded, the relevant variables are indicated in red.

55 CNB (2015): *Inflation Report III/2015*.

CHART IV.27

**Czech government bond yields in 2014 and in the stress scenario**

Source: Bloomberg L.P., CNB calculation

Note: The figures for 2014 are the actual market yields to maturity observed on 31 December 2014. The other data are average demanded yields assumed for the given period.

**The CNB identified exposures to the domestic sovereign sector as systemically important...****The stress test indicates a low risk of default of the sovereign exposure under review****The CNB will not apply the additional capital requirement for concentration risk at the three-year horizon**

values have forecasting potential, i.e. that market participants' expectations are partly adaptive. The analysis was carried out using government bond yields of three maturities: one year, five years and ten years. The yields for other maturities are derived from these three.

In the current stress test methodology, the maturity structure of newly issued bonds is derived from the maturity structure of government debt in the previous period. This is a simplification, as a sharp increase in the yield curve slope may lead to a decrease in issues with very long maturities. Other variables entering the ISR are regarded as constant over the three-year horizon and their most recent known value is used.

Exposures to the Czech government were identified as systemically important at the end of 2014. This exposure of credit institutions as a whole totalled around CZK 740 billion, or 185% of eligible capital. The share of credit institutions with this systemically important exposure was 85% of their total assets.<sup>56</sup> Therefore, an ISR estimate was made for these exposures using a stress test of Czech public finances. The test is based on the same *Adverse Scenario* as that used in the macro stress tests of financial institutions (see section 3.2).

According to the public finance stress test (see Table IV.5), the three-year ISR outlook for exposures to the Czech government is 1.27% and thus does not exceed its threshold values over the given horizon. The marked economic decline assumed in the *Adverse Scenario* would be reflected in a rise in the primary deficit to 6.5% and a subsequent increase in total government debt to 63.6% of GDP. Financial markets would respond by increasing the nominal yield demanded on the ten-year government bond. However, given the deflation assumed in the *Adverse Scenario*, this yield would not exceed 4% at the three-year horizon (see Chart IV.27). Moreover, the assumed volume of new issuance is relatively low in view of the current debt maturity structure (the average maturity was 5.3 years at the end of 2014). The impact of growth in interest rates on the total deficit is thus limited. However, the difference between the real yield and the GDP growth rate would be sufficient to reach the critical limit of 6.3%. As real economic growth, the primary deficit and the current account balance would also reach their critical limits, the ISR would stand at 2.37% in 2016. In 2017, however, the ISR would fall to 1.27% owing to an expected increase in economic growth above the critical limit.

Given the result of the stress test of Czech public finances and the estimated ISR documenting their stability, the CNB will not require

<sup>56</sup> Sovereign exposures to other governments, the EU and the EIB were not found to be systemically important.

institutions to meet an additional capital requirement to cover concentration risk for the above-limit part of these exposures at the three-year horizon. The limit for domestic sovereign exposures remains close to 222% of the sector's capital and most exposures are therefore below the limit.

#### **4.6 MACROPRUDENTIAL POLICY AND THE REGULATORY ENVIRONMENT IN THE EU**

##### **4.6.1 ACTIVITIES OF THE EUROPEAN SYSTEMIC RISK BOARD**

The CNB is forming its macroprudential policy in close connection with the approaches to the identification and mitigation of systemic risks being developed in the EU as a whole. This work is going on mainly within the European Systemic Risk Board (ESRB).

In 2014 the discussions within the ESRB focused mainly on assessing notifications of specific macroprudential measures introduced in this period in various EU countries. The notifications, which were submitted by a whole range of EU Member States, were already governed by CRD IV and pertained to several types of macroprudential tools (for example, risk weights for mortgages and capital buffers based on the country's position in the financial cycle or on structural risks). The CNB provided notification of the introduction of the capital conservation buffer, the countercyclical capital buffer and the systemic risk buffer. The ESRB made no objections to any of the CNB's notifications.

In addition to assessing notifications, the ESRB continued to issue recommendations to central banks, supervisors and other authorities. A recommendation on how Member States should set countercyclical capital buffer rates was issued in 2014. During the preparation of this recommendation, CNB experts successfully promoted the principle that the standard recommended credit-to-GDP ratio is not necessarily the best guide for setting this buffer rate, depending on specific national circumstances. In a review of compliance with the ESRB recommendations issued to date, implementation in the Czech Republic was assessed as being fully compliant.

The ESRB paid great attention to the completion of a report on possible improvements in the regulatory treatment of sovereign exposures (see section 4.5). This is a sensitive topic from both the macroprudential and microprudential regulation and economic policy perspectives. The CNB considers the preparation and publication of this report to be a step in the right direction, even though it regards some of the solutions for the risk mitigation tool relating to sovereign exposures (especially the setting of the limit on bank exposures to sovereigns at the level currently used for other types of exposures) as overly restrictive and unrealistic.

The ESRB was also involved in the preparation of stress scenarios for stress tests of banks and insurance companies in EU countries, conducted during 2014. It also served as a forum where central banks and regulators from individual EU countries could debate various topical

issues (such as persisting low interest rates, risks stemming from excessively large banking sectors, mandatory derivatives clearing through central counterparties, credit activities of investment funds and developments in Ukraine and Russia).

#### 4.6.2 THE BANKING UNION AND THE CAPITAL MARKETS UNION

In addition to the specific instruments listed in section 4.2 and ESRB recommendations, projects focused on deepening financial market integration in the EU and changes to international regulatory standards may have a significant impact on systemic risk and macroprudential policy in the EU.

##### Single Supervisory Mechanism

The Single Supervisory Mechanism (SSM) was launched last year. Following two years of preparations, the ECB assumed responsibility for supervising the 120 largest euro area banks. During the preparatory phase, regulatory framework documents<sup>57</sup> were approved, a list of significant supervised entities was published and the rules of banking supervision<sup>58</sup> were completed. The main objectives of the framework are to create a level playing field for all SSM members and to reduce the tendency of the financial system to fragment into separate national financial sectors. Joint supervisory teams of the ECB and national supervisors were set up and took over responsibilities in supervisory colleges.

Before the responsibilities were taken over, a comprehensive assessment (CA) was performed. This consisted of an asset quality review (AQR) and an EU-wide stress test of the 130 largest banks, which account for 80% of the assets of the euro area banking sector (EUR 22 trillion). The results, which were published in October 2014, are important for developing cooperation between the ECB and national authorities, which is regarded as a key element of effective supervision in Europe. The detailed AQR covered 800 portfolios and 119,000 debtors. Thanks to a harmonised methodology and to exceptional attention paid to the quality of the AQR, the results allowed for cross-border comparison. A total of EUR 136 billion in new non-performing loans and additional asset impairment of EUR 48 billion were identified. Were the adverse scenario to materialise, the capital shortfall would total EUR 263 billion in 25 of the participating banks at the three-year stress test horizon. Some banks have already topped up their capital, while others have submitted plans to do so. A large part of the information was published, and the high degree of transparency boosted the confidence of investors in the European banking system. The portfolios of some Czech banks were

<sup>57</sup> The main document is the *Regulation of the European Central Bank of 16 April 2014 establishing the framework for cooperation within the Single Supervisory Mechanism between the European Central Bank and national competent authorities and with national designated authorities (SSM Framework Regulation) (ECB/2014/17)*.

<sup>58</sup> ECB (2014): *Guide to Banking Supervision*.  
<http://www.ecb.europa.eu/pub/pdf/other/ssmguidebankingsupervision201409en.pdf>

included in the review as part of the portfolios of their parent groups and no significant shortcomings were identified.

The next steps in the development of the SSM involve harmonisation of technical supervisory approaches, which should lead to a reduction in banks' costs and to better cross-border comparability. This approach should also ensure high-quality supervisory standards and unified application of prudential regulation. It should also contribute to the resolution of the long-standing problem of cooperation between home and host supervisors of banking groups operating in the euro area. Memoranda of understanding will be the key instrument for effective cooperation with non-euro area supervisors who do not join by establishing a close cooperation agreement.

The Czech Republic does not expect to join the close cooperation regime in the near future.<sup>59</sup> This is due in large part to the rules of operation of the SSM, which for non-euro area members imply a transfer of powers (in particular, direct supervision of key banks by the ECB and representation in supervisory colleges through the SSM) with no possibility of risk- and cost-sharing at times of crisis. The CNB will therefore retain its current powers over Czech financial market participants and the CNB's position in supervisory colleges will remain unchanged. The CNB is also working actively within the EBA on the preparation and implementation of regulatory tools and actions required under CRD IV and within the ESRB on the design of macroprudential policy.

#### **Capital markets union**

The capital markets union (CMU) was proposed as a response to persisting poor access to credit in some euro area countries. In the first quarter of this year, the European Commission launched a public consultation<sup>60</sup> on this project. The building blocks for the CMU institutional set-up are planned to be put in place by 2019. In line with the specified objectives, the CMU should make capital markets more effective, in particular by improving access to the capital markets for small and medium-sized enterprises (SMEs). Another aim is to offer investors and savers new investment opportunities. The CMU involves amending existing legislation rather than creating new institutions. The first specific steps are to include, for example, developing a common accounting standard providing transparent and credible information on individual SMEs so that potential cross-border investors can better choose between them. Other proposed measures include an amendment to the Prospectus Directive stipulating what information should be published by issuers of securities offered to the public. The directive may be revised to make it less onerous for small but highly creditworthy issuers. Other areas

<sup>59</sup> For more details, see the *Impact Study of Participation or Non-participation of the Czech Republic in the Banking Union – Summary Report*, prepared by the Ministry of Finance in cooperation with the Ministry of Foreign Affairs, the Office of the Government and the Czech National Bank, and discussed by the Czech government on 9 February 2015.

<sup>60</sup> European Commission (2015): *Building a Capital Markets Union – green paper*.

that could be affected by the CMU include tax regulations and insolvency proceedings.

The CNB welcomes the efforts to further the development of the European capital market. Nevertheless, it emphasises that banks traditionally play the dominant role in financial intermediation in European economies. Banks' intermediary role has been hampered by a series of new regulatory duties introduced in recent years. Instead of major structural measures, the CMU project should therefore be limited to minor steps that are easy to implement and have clear benefits, at least until the impacts of this new burden on the banking sector become clear. In the CNB's opinion, any new legislative proposals must not reduce investor protection or lower the requirements for prudent behaviour by financial market participants.

#### 4.6.3 THE RECOVERY AND RESOLUTION FRAMEWORK

Significant progress has been made in the area of the Single Resolution Mechanism (SRM). Directive 2014/59/EU of the European Parliament and of the Council establishing a framework for the recovery and resolution of credit institutions and investment firms (the Bank Recovery and Resolution Directive, BRRD) took effect in July 2014. It will be supplemented with several dozen implementing regulations and guidelines issued by the European Commission and the EBA. The primary objective of this legislation is to increase the resilience of the credit institutions sector and to put in place mechanisms to minimise the negative impacts of the failure of an institution<sup>61</sup> on the financial stability of its home Member State and on the EU as a whole. The BRRD therefore contains both preventive powers and procedures for mitigation of the risk of bank failure, and powers and procedures for the preparation and implementation of crisis resolution. These procedures are very complex and the BRRD requires constant performance of many new activities even at times when no institution is failing.

Owing to the very short deadline for transposing the BRRD into national law, many EU Member States – including the Czech Republic – have yet to complete this process. The BRRD is to be transposed in the Czech Republic by a Recovery and Resolution Act and a related amending act. The BRRD requires each EU Member State to establish a resolution authority. According to the draft transposition act, the CNB will be the resolution authority in the Czech Republic. In accordance with the BRRD, it must be ensured that the resolution function is highly independent of the other functions of the relevant authority. To this end, a Resolution Department has been established at the CNB under the direct supervision

<sup>61</sup> The BRRD applies to a broad group of entities, most notably banks, credit unions and some investment firms (hereinafter "institutions"). In addition, some of the powers envisaged in the BRRD may be applied to other members of the same financial groups. Given the structure of the Czech financial market, banks are by far the largest set of institutions as far as financial stability is concerned, so in some parts of this text we sometimes simplify and refer to banks only.

of the Bank Board. It will specialise in resolution-related duties and is independent of other units.

In the recovery area, the BRRD introduces a duty to compile recovery plans and grants resolution authorities early intervention powers. In the resolution area, it introduces a duty to prepare resolution plans to establish a resolution fund financed by contributions made by institutions. It also entrusts the resolution authorities with a number of powers. The resolution authority has bail-in tools (see Box 7), such as the sale of the business or part thereof, the use of a bridge institution or asset management vehicle, and the write-down or conversion of capital and eligible liabilities. Cooperation between the CNB and the Ministry of Finance or the government will be necessary in some cases. Any bail-out would be subject to approval by the European Commission under Article 107 of the Treaty on the Functioning of the EU. In any event, the application of resolution tools is conditional on meeting the public interest criterion.

From a practical perspective, the following duties will be of particular importance to the CNB after the transposition act has been adopted: assessing recovery plans prepared by institutions, preparing resolution plans, calculating contributions to the resolution fund and specifying the extent to which institutions will have to maintain capital and certain types of eligible liabilities that can be used to recapitalise banks (the MREL, see Box 7). Given the expected delay in transposition and the gradual preparation of implementing regulations by the European Commission and the EBA, some methodological and operational complications may arise at first. This applies in particular to the payment of the first contribution to the resolution fund and to the setting of the MREL.

The CNB is working with the EBA, the Ministry of Finance and the Deposit Insurance Fund on establishing resolution mechanisms and structures. At international level, the CNB is gearing up for participation in resolution colleges. As the systemically important banks operating in the Czech Republic are members of international banking groups, the Single Resolution Board will be the CNB's most important partner in these colleges. One source of inspiration at the moment is Austria, mainly because of its practical experience with the resolution of Hypo Alpe Austria and its successor "bad bank" HETA. Inspiration can also be drawn from the experience of the resolution of Portuguese and British banks. However, only potential future cross-border experience of resolution in the banking sector will show whether the single framework is sufficiently robust on the European scale.

**BOX 7: THE BAIL-IN TOOL AND THE MINIMUM REQUIREMENT FOR OWN FUNDS AND ELIGIBLE LIABILITIES OF BANKS (MREL)**

Preparations for the introduction of the tool for writing down or converting capital instruments and eligible liabilities (hereinafter "bail-in") into the regulatory framework at global and European

level continued last year. The BRRD introduces this tool in EU Member States. Bail-in is one of the resolution tools. It consists of a set of rules under which the owners and some unsecured creditors of an institution (e.g. holders of its bonds) will help maintain some or all of its operations in a crisis situation by writing down their capital holdings in the institution or writing down the institution's eligible liabilities to them (resulting in coverage of the institution's loss) or by converting those liabilities into capital instruments (resulting in recapitalisation of the institution or capitalisation of a bridge institution, to which the institution's business or part thereof will be transferred). Successful use of the bail-in tool is conditional on the presence of a sufficient volume of capital and debt instruments in the institution's balance sheet capable of absorbing losses.<sup>62</sup>

To ensure sufficient loss-absorbing capacity, supervisory and resolution authorities will set minimum requirements for the structure and amount of the capital and eligible liabilities of individual banks.<sup>63</sup> For this purpose, the Financial Stability Board established by the G20 is currently working on international standards for global systemically important banks using the concept of total loss-absorbing capacity (TLAC). A similar concept has already been introduced at the EU level in the BRRD, taking the form of a minimum requirement for own funds and eligible liabilities (MREL). The EBA published draft regulatory technical standards (RTS)<sup>64</sup> for the MREL in November 2014 and conducted a public consultation in late 2014 and early 2015. The EBA is expected to submit the final draft of the RTS to the European Commission for approval by July 2015.

The success of any new conceptual tool hinges on how it is implemented and configured. The way in which the level and structure of the MREL are set will be crucial as regards the application of the bail-in tool in the EU. In contrast to capital ratios and the leverage ratio, the BRRD does not specify a single minimum MREL level for all institutions in the form of a ratio of capital and eligible liabilities to risk-weighted assets/total assets. The minimum requirement will be specific to each institution and the resolution authority will have to prescribe it in the form of a

62 In addition to capital instruments, the institution's liabilities will be subject to write-down or conversion unless they fall under the exemptions defined in the BRRD. Secured liabilities, covered deposits, short-term liabilities to systems with settlement finality and some other types of liabilities are exempt.

63 The BRRD imposes additional requirements on eligible liabilities compared to liabilities to which the bail-in tool can be applied (for example, it requires eligible liabilities to have a remaining maturity of at least one year). Eligible liabilities are therefore a subset of the liabilities to which the bail-in tool can be applied.

64 Draft Regulatory Technical Standards (RTS) further specifying the criteria to set the minimum requirement for own funds and eligible liabilities (MREL). Published by the EBA on 28 November 2014.  
See <http://www.eba.europa.eu/documents/10180/911034/EBA+CP+2014+41+%28CP+on+draft+RTS+on+MREL%29.pdf>.

ratio of eligible liabilities plus capital to total liabilities plus capital. In simple terms, under the draft RTS the MREL will have two components: a loss absorption amount (LAA) and a recapitalisation amount (RCA). According to the draft RTS, the LAA should be at least equal to the total capital requirements applicable to the institution. In addition to the 8% minimum under Pillar 1, it should comprise the Pillar 2 requirements and all capital buffers (the capital conservation buffer, the countercyclical capital buffer, the systemic risk buffer and the buffer for other systemically important institutions).

The minimum RCA depends on the nature of the institution and the corresponding resolution method.<sup>65</sup> Where the resolution plan assumes that the institution will be wound up in standard liquidation or insolvency proceedings in the event of failure (bank A in Table IV.2 Box and Chart IV.2 Box), the RCA can be set at zero. In such case, the institution’s MREL would consist solely of the LAA, which means it would equal the total capital requirement. According to the draft RTS, the process of determining the MREL will be more difficult for institutions where full liquidation is not appropriate and ensuring continuity of critical functions – either in the original legal entity or through the transfer of such activities to a bridge institution – is preferable (bank B in Table IV.2 Box and Chart IV.2 Box). In this case, the RCA should equal the capital requirements depending on the assumed<sup>66</sup> size of the transfer of part of the institution’s balance sheet. For institutions where the resolution plan assumes full recapitalisation using the bail-in tool (bank C in Table IV.2 Box and Chart IV.2 Box), the RCA should be at least equal to the institution’s overall capital requirement.<sup>67</sup> For systemically important banks, this implies an MREL of at least double the total capital requirement.

The draft RTS for the MREL contained some problematic issues from the point of view of the Czech banking sector. These related primarily to the determination of the MREL for systemically important institutions. In their case, the total MREL requirement could be as much as double the institution’s total capital requirement (the Pillar 2 requirements and any capital buffers on

TABLE IV.2 Box

Illustration of the calculation of MREL components for hypothetical banks

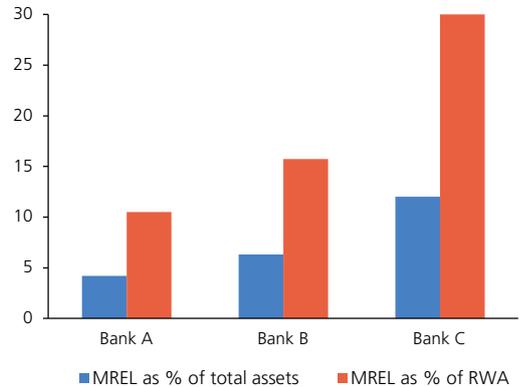
	Bank A	Bank B	Bank C
Total assets	100	100	100
RWA	40	40	40
Total capital requirement (% of RWA)	10.5	10.5	15
Capital	4.2	4.2	6
Eligible liabilities	0	2.1	6
Proportion of assets transferred	0	50	100
LAA (% of RWA)	10.5	10.5	15
RCA (% of RWA)	0	5.25	15

Source: CNB calculation

Note: It is assumed that bank A and bank B will only be required to maintain a capital conservation buffer of 2.5% on top of the 8% minimum (i.e. no Pillar 2 or buffer requirements), while bank C will additionally be required to maintain a Pillar 2 requirement of 1.5% and a systemic risk buffer of 3%.

CHART IV.2 Box

Results of the MREL calculation for hypothetical banks (% of total assets or RWA)



Source: CNB calculation

65 Even in the model examples below, resolution authorities will enjoy a considerable degree of flexibility and the choice of specific measures and procedures will depend on a number of factors. The solutions may therefore differ widely from case to case. The examples here give only an approximate illustration of how the MREL concept works.

66 The MREL will be set *ex ante* on the basis of assumptions. Of course, the amount of funds actually needed for a bail-in can be determined during the resolution process on the basis of a valuation.

67 This is a simplified assertion based mainly on the assumption that the institution goes through resolution without a change in its size (no activities terminated, no assets sold, etc.) and that the risk weights of the institution’s exposures remain unchanged.

top of the Pillar 1 minimum of 8%). In some institutions, the MREL could therefore exceed 30% of risk-weighted assets (bank C in Chart IV.2 Box).<sup>68</sup>

To meet such a high requirement, banks would need to have very high capital ratios or many eligible instruments held by unsecured investors. This can be assumed for large and complex banks with cross-border activities and high levels of financial market funding, for which the TLAC concept was originally created. However, the requirement is economically problematic for conservative and locally oriented retail banks which finance their activities fully or mostly by insured deposits. As insured deposits are not included in the MREL, these banks would have to meet the MREL requirement using capital, seek investors for eligible liabilities or radically change the risk structure of their balance sheets. Meeting the MREL with capital alone would be a costly form of financing for banks and would put them at a disadvantage compared to banks funded by bonds, for example. Replacing a large proportion of deposits with eligible liabilities could be very difficult and counterproductive from the business model perspective. If a group of banks having a large market share were forced to take such a step, prices of eligible instruments would probably fall. Potentially insufficient demand for unsecured bank bonds among private investors also poses a risk. Coupled with efforts to markedly reduce the balance-sheet risk profile in the event of insufficient interest in eligible liabilities, this could lead to lower availability of credit to the private sector and a weakening of economic activity.

The assumption contained in the draft RTS that both components of the MREL requirement, i.e. the LAA and the RCA, should be ensured at the level of the total capital requirement including all buffers is too ambitious from the retail bank perspective. The Pillar 1 and Pillar 2 capital requirements are basically meant to ensure that the institution remains solvent even in the event of unexpected losses. The combined buffer requirement is intended to reduce the probability of the institution's capital falling below the Pillar 1 and Pillar 2 levels. If that happens nonetheless, i.e. if the combined capital buffer is partly or fully exhausted, it is enough merely to restore it gradually based on a realistic recapitalisation plan. By contrast, the BRRD requires the MREL to be maintained constantly, with no option of gradually restoring the buffer using retained profits. The MREL determination mechanism in the draft RTS would therefore be much stricter and less flexible. It would take less account of the total risk of institutions and go far beyond the current capital regulation framework. Moreover, if the MREL were to include a non-zero

<sup>68</sup> An additional rule that the MREL should not be lower than 8% of total assets should also apply to systemically important institutions.

countercyclical buffer and the total requirement were primarily equal to CET1 capital, banks might not be capable of lowering the countercyclical buffer rate to zero in practice. Overall, this would reduce the effectiveness and flexibility of macroprudential policy.

In general, the CNB agrees that banks' loss absorption capacity and their ability to recapitalise as much as possible from private funds, i.e. without using taxpayers' money, fosters long-term banking sector stability and thereby contributes to public finance sustainability. After all, it was well-capitalised banks that coped with adverse shocks better and faster during the financial crisis. However, the CNB regards the method for determining the MREL contained in the draft RTS as best suited to large and complex globally active banks. It therefore submitted two sets of requests in the EBA consultation. First, resolution authorities should be allowed to consider the characteristics of a bank's business model, mode of financing and risk profile when setting its MREL. Second, resolution authorities should be allowed to judge which components of the total capital requirements or the combined capital buffer are sufficient to ensure that the institution has the capacity to absorb losses and recapitalise. Similar requests were made by other contributors to the public consultation and the final draft of the RTS can be expected to reflect them at least in part.

It is important to bear in mind that the bail-in tool does not guarantee that from now on any problems in the banking sector will be dealt with by the shareholders and creditors of distressed banks with no need for state-funded bail-outs. Both approaches to bank resolution have their advantages and disadvantages.<sup>69</sup> Bail-in promotes prudential behaviour by banks, investors and creditors, but the costs associated with maintaining the MREL arise in advance and exist continuously even in the absence of crises. In the case of a bail-out, no costs arise until the bail-out is performed. Moreover, if it is handled well, it can eventually yield profit to taxpayers. Bail-in may not be painless to the economy, and may not even be available in a systemic crisis. Resolving a systemic crisis by imposing losses on shareholders and creditors could have large or even dramatic impacts on the financial and real sectors. The authors of the BRRD were aware that in a systemic crisis the government may have to intervene to restore confidence in the stability and functioning of the sector. In this regard, it is vital to perform banking supervision and apply

<sup>69</sup> Mayes, D.: (2014): *Bank Structure and Resolution*. *Journal of International Banking and Financial Law*, December 2014, p. 4; Mayes, D.: (2014): *The Funding of Bank Resolution in Europe: Will the New Framework Meet Expectations?* Presentation for Bruegel, 16 December 2014.

macroprudential policy consistently to reduce the frequency and intensity of crises.

#### **Financial Market Guarantee System**

The draft Recovery and Resolution Act<sup>70</sup> establishes and regulates the Financial Market Guarantee System, which will manage the funds of the Deposit Insurance Fund (DIF) and the Resolution Fund (RF). The assets of the funds will be kept separate from the assets of the Guarantee System, which will operate as a management company.

Changes in the functioning of the DIF are governed by a draft law implementing the deposit-guarantee schemes directive.<sup>71</sup> The main objective of the directive is to unify the level of depositor protection in the EU.<sup>72</sup> The draft law introduces a target DIF level of 0.8% of covered deposit claims. Another significant change is the possibility for the DIF to take into account the institution's risk profile and the phase of the business cycle when setting the annual contribution. Other changes in the draft law include a shorter deadline for deposit compensation, exemption of certain deposits from the basic deposit insurance limit and the possibility of lending between the deposit insurance systems of individual Member States.

The aim of the establishment of the RF is to protect and stabilise the financial market. Banks, credit unions, investment firms and branches of these institutions established in other Member States (hereinafter the "contributing institutions") will contribute to the RF. The RF's funds may be used for resolution purposes if specified rules are observed. As for the RF that is to be established in the Czech Republic under the directive, its target level must be at least 1% of covered deposits with credit institutions in the Czech Republic as of the end of 2024. From 2015 onwards, the contributing institutions should pay more than CZK 2 billion a year into the fund. The target amount is estimated at about CZK 25 billion. Given the total bank assets of around CZK 5,300 billion (as of the end of 2014), the RF would represent roughly 0.5% of total assets.

Credit institutions established in an SSM country and banks from non-EU countries having a branch in an SSM country will gradually pay contributions through their national funds to the Single Resolution Fund (SRF) so that 1% of covered deposits with credit institutions in SSM

70 The draft Act transposes Directive 2014/59/EU of the European Parliament and of the Council establishing a framework for the recovery and resolution of credit institutions and investment firms.

71 Directive 2014/49/EC of the European Parliament and of the Council of 16 April 2014 on deposit-guarantee schemes. The directive is expected to be implemented into Czech law in the second half of 2015.

72 The compensation provided to holders of deposits has been harmonised at the European level (at EUR 100,000), but the target levels of national deposit insurance funds have not.

countries, i.e. around EUR 55 billion,<sup>73</sup> is reached by approximately 2024.<sup>74</sup> Funds will be increasingly shared between the SRF national sub-funds, which will cease to exist after a transition period. All the funds in the SRF will then be available for resolution in any SSM country. However, the target level of EUR 55 billion is quite low (0.2%) in relation to banks' total assets (around EUR 30,000 billion). In the euro area, the European Stability Mechanism (ESM) could also be used for direct recapitalisation of banks, but the funds available there are also low (at roughly the same level as in the SRF). As with the resolution framework, the robustness of these national and European sources of financing will not be tested until the next financial crisis occurs.

<sup>73</sup> EUR 55 billion is the European Commission estimate given in the presentation of the relevant legal act ([http://europa.eu/rapid/press-release\\_MEMO-14-597\\_en.htm](http://europa.eu/rapid/press-release_MEMO-14-597_en.htm)). The actual amount will be derived from the amount of covered deposits in SSM countries. The SSM membership may also develop in different ways, and this would affect the target amount of the SRF in absolute terms.

<sup>74</sup> Under certain conditions, European regulations allow the deadline for attaining the target level to be extended.