Economic performance was very mixed across the regions of the world economy last year. In most European countries, however, the initial expectations of an economic recovery again failed to materialise. In 2014, however, the advanced European countries should return to GDP growth. The same goes for the Czech economy, where the risk of deflation has been averted by an easing of monetary policy by the CNB. Nevertheless, the risk of a general decline in prices is very topical in other EU countries, and the ECB will probably react by easing monetary policy. However, an increase in risks connected with search for yield and increased risk-taking in investing on asset markets could be a side effect. Additional risks to the EU economy are coming in mainly from emerging economies, which in many cases have been showing signs of imbalances. The expected growth slowdown in some of these economies may impinge on Czech exports, especially those to Germany. High debt will dampen the economic recovery in advanced countries. Private sector debt is also rising slightly in the Czech Republic, but from a low level. The Czech Republic’s external debt rose in 2013, but its coverage by external assets and by the CNB’s international reserves increased as well. The Czech Republic’s ratio of government debt to GDP stabilised and should not rise significantly in the next two years.

Economic activity was very mixed across the regions of the world economy…

The more optimistic expectations at the start of the year regarding economic growth in the world economy again failed to materialise in almost all regions in 2013. As regards large economies, only Japan recorded a slightly better-than-expected result. Despite the general non-fulfilment of growth expectations, last year was characterised by uneven developments. GDP growth in advanced economies was very low on average (see Chart II.1). By contrast, most emerging economies again showed rapid growth (see Chart II.2), although in some cases it showed signs of unsustainability. In the euro area, which is the main trading partner of the Czech economy, the situation also remained heterogeneous. The countries hit by the debt crisis showed subdued economic activity and an unfavourable labour market situation. Nevertheless, slightly better results were achieved in the euro area than in 2012. Compared with the euro area countries, corporations and households in the USA and the UK are having more success in bringing down their debt ratios, aided by monetary policies and weaker...
currencies. Both economies experienced a noticeable recovery in 2013, although with different labour market characteristics. While labour demand remained muted in the USA, it rose unexpectedly fast in the UK.

... but this time the expectations of a return to growth in advanced European countries are on a more realistic footing
The 2013 Q4 results, leading indicators such as the PMI, and growth estimates themselves suggest that the advanced countries should continue to recover gradually this year (the yellow bars in Chart II.1) amid still very low inflation. The outlooks also indicate that the recession in the euro area should end. Although most forecasts published around the start of the year in previous years were also relatively optimistic, the favourable expectations are now on a more realistic footing.

Domestic economic activity bottomed out in 2013 and its growth in the two years ahead should be relatively robust
The Czech economy recorded a GDP contraction of 0.9% in 2013, with all demand components except government consumption making negative contributions to GDP growth. However, only the contribution of gross fixed capital formation was significantly negative. Developments were very uneven in the course of the year, with the economic contraction culminating at the start of the year and then being replaced by a subdued recovery in Q2 and Q3. The recovery turned into marked annual and quarterly GDP growth in Q4. Industrial production started to rise as early as in 2013 Q3 and recorded growth of 0.5% for 2013 as a whole. The CNB’s May forecast predicts a relatively robust recovery of the Czech economy (GDP growth of 2.6%), aided by stronger external demand and easier monetary policy as a result of the weakening of the koruna amid slightly expansionary domestic fiscal policy. The weaker currency is boosting the price competitiveness of domestic production and, via a decrease in real interest rates, will support private consumption and investment expenditure. In 2015 economic activity should strengthen further, with GDP growth reaching 3.3%. The CNB Bank Board assessed the risks to the May forecast as being slightly anti-inflationary. In a debate of the forecast, the Bank Board stated that the probability of a later exit from the exchange rate commitment was increasing.

Developments in the euro area are the main risk to economic growth
As in the past, a renewal or escalation of adverse developments in economic activity in the Czech Republic’s main export markets is the main risk to Czech economic growth. Such developments would be broadly consistent with materialisation of the Europe in Deflation stress scenario, which is described at the end of this section. Developments in Russia and Ukraine, which may be reflected in a drop in exports to these countries from the EU and the Czech economy and in lower availability and higher prices of energy commodities, are another significant – albeit difficult to quantify – source of risks to the domestic economy (see also section 2.2).
Concerns about deflation are emerging in the euro area, and the ECB may respond by extending its unconventional policies

Although the central banks of large advanced countries have been applying strongly accommodative monetary policies for years, inflation pressures remain very subdued. In some countries, especially in the euro area, deflationary risks started to increase during 2013. Given the insufficient demand and high private and public debt, the emergence of more significant deflationary expectations or longer-running deflation could have a strong negative impact on economic activity and financial stability. In particular, elements of debt deflation would manifest themselves, with the nominal value of debt remaining the same but the real debt level increasing amid a decrease in nominal income. The deflation would thus hinder any improvement in consumer and investment demand not only through deferral of expenditure because of expected lower prices, but also through higher real debt service costs and efforts to repay existing debt faster. At the same time, with nominal disposable income falling, income and assets would be redistributed from indebted households with a high propensity to consume to creditor households with a low propensity to consume. A relatively clear trend of falling inflation can be observed across the member states (see Chart II.3). In some countries deflation has already become a realistic threat and the euro area as a whole is not too far away from it either. As a result of this risk, signals of the potential commencement of quantitative easing started to emanate from the ECB at the start of this year.

The threat of deflation in the euro area is also linked with credit market developments

The growing concerns about deflation in the euro area are also being fuelled partly by the fact that credit to the private sector is not growing overall and deleveraging is in fact occurring in some places. Lower availability of credit to the corporate sector can be observed in some countries, especially for small and medium-sized enterprises. The supply side of the credit market is perhaps being hampered in some euro area regions by the fact that banks are gearing up for the Asset Quality Review (AQR) and EU-wide stress tests as part of the preparations for the single supervisory mechanism (see section 5.6). Motivated by concerns regarding the results of these tests, some banks may be attempting to strengthen their capital positions, which may also be taking the form of deleveraging.

Accommodative monetary policies may also be generating risks to financial stability

With monetary policy having long been very easy, the difference between its effects on the real economy and on the financial sector started to be discussed in 2013. The low interest rates and quantitative easing have undoubtedly supported consumer and investment demand to some extent. However, their effects on financial market activity may have been
even stronger. Owing to low nominal yields worldwide, various forms of search for yield started to emerge, which could lead to the formation of bubbles in some asset markets, for example in European residential and commercial property markets, as evidenced by statements issued by central banks and precautionary measures adopted in Germany and Sweden (see section 5.4 for details). From the global perspective, the bond market is regarded as the biggest risk (see section 3.1 for details). However, the risk of bond overvaluation is not necessarily acute, as the exit from accommodative monetary policies will be either tapered (in the USA and the UK) or postponed further (in Japan). Amid weak demand growth, inflation will remain low and the saving rate elevated. Long-term interest rates may therefore stay at historical lows for a longer period of time, although for some corporate bonds the current yields seem excessively low. Concerns of overvaluation also relate to shares, which recorded a very good year worldwide in 2013. However, relatively weak investment in physical capital raises the question of whether the current profits of non-financial corporations are sustainable in the longer run.

Signs of a balance-sheet recession also strengthened in the Czech economy during 2013

Given the low inflation observed in Europe and the potential deflationary pressures (see the Europe in Deflation stress scenario), the risk of a balance-sheet recession is often debated. This is a situation where, as a result of a mismatch between the level of debt and the value of assets (which has been reduced by the crisis), the private sector – in order to repair its balance sheets – generates high financial surpluses which other sectors are not able or willing to spend. In this situation, a slump in aggregate demand, a protracted recession and deflation pressures can occur, and the return to a full recovery is usually very slow. Data on financial surpluses/deficits by sector can be used to identify the risk of a balance-sheet recession in the Czech economy (see Chart II.4). Although the picture provided by the available data sources is not entirely clear-cut, a gradual rise in the financial surplus of the corporate sector (non-financial and financial corporations) can be observed in 2013 amid a decrease in the deficit of general government and a slightly falling


4 The increase in share prices in 2013 can be regarded as a standard reaction to procyclical monetary policies and as a reflection of the rise in corporate profits recorded at the end of the recession. The price growth may also be due to an upward trend in the ratio of profits to national income. Uncertainty regarding the long-term sustainability of high share prices is associated mainly with the fact that many large corporations are generating sizeable cash surpluses but are returning them to shareholders rather than investing them. This may be caused by the increased importance of bonuses derived from share prices, which is leading managers to adopt approaches that are successful in the short run but pose a long-term risk to firms: they are cutting investment and making higher profits through higher margins, which may gradually result in a loss of market share. This hypothesis implies that many shares may be overvalued given the current indebtedness of corporations.

5 The balance-sheet recession scenario was presented in more detail in Box 1 in FSR 2011/2012.
The gap between the surpluses of the private sector and the general government deficit (sometimes also called the deflation gap) switched from a decreasing deficit to positive values in 2013; according to financial account data, it was in fact the highest positive gap in the history of these statistics. A positive gap represents a surplus of domestic funds, which could have been consumed (or invested) by domestic entities and used to increase domestic demand. The said developments therefore suggest that some shortfalls in aggregate demand occurred during 2013. These can be regarded as signals of a balance-sheet recession, or rather its more moderate form where a mismatch arises between expected future income and expenditure. A more accurate assessment of these signals will depend mainly on developments in the quarters ahead, which may generate a turnaround in the current tendency thanks to the economic recovery or, conversely, provide clearer confirmation of the current signals. The use of the exchange rate as a monetary policy instrument and the weakening of the koruna, which led to the elimination of deflationary expectations and an easing of the monetary conditions supporting a recovery in GDP growth, significantly reduced the risk of a balance-sheet recession. Monetary policy is thus helping to reduce the risks to financial stability.

New risks to economic activity in the EU are coming in from the external environment

European economies are currently facing many risks from the external environment, with some of these now stemming from emerging economies. In addition to rising private and government debt, many of these countries are showing current account and public finance deficits. Moreover, emerging markets may face capital flows in either direction. If interest rates in advanced countries fall further, short-term capital may start flowing into emerging economies again. Conversely, if interest rates rise, owing, for example, to a re-assessment of risk premia, capital will flow out of emerging economies, causing their currencies to depreciate. These trends were observed in late 2013 and early 2014 in Turkey, South Africa, Brazil, Russia, India and Indonesia.

Weaker economic growth in emerging economies will affect Czech corporations

Efforts by emerging economies to stop the rapid rise in credit or stabilise their currencies through tighter monetary policy are contributing to a slowdown in economic growth from its previously very high levels in this group of countries. This, in turn, will affect exports from advanced countries, including Czech exports, which are heavily dependent on the activity and exports of German corporations. Like Czech exports, German exports are influenced mainly by developments in economic activity in neighbouring countries. In the case of Germany, the share of exports to emerging economies is just over 20%, of which the BRIC countries (Brazil, Russia, India and China) account for 11 pp, Turkey for 2 pp and other emerging economies for 8 pp (see Chart II.5). Of course, Czech exports would also be adversely affected by a deterioration of the situation in Ukraine and Russia (see section 2.2). The conflict could also have a negative impact on EU countries through bank exposures. However, consolidated banking statistics from the Bank for International
Settlements (BIS) reveal that these exposures are in the order of billions of euros vis-à-vis Ukraine and tens of billions of euros vis-à-vis Russia, together representing less than 0.5% of the assets of European banks.

**Euro area debt is falling too slowly**
High private sector debt can be regarded as the main obstacle to a recovery in consumer demand and demand for new housing in many advanced countries. Deleveraging, i.e. a reduction in debt relative to income, is taking place particularly slowly in private entities in the euro area, whereas in the USA the credit-to-GDP ratio has already fallen substantially from its peak (see Chart II.6). The high debt ratio pertains mainly to households, but in the euro area corporations are highly leveraged as well. If interest rates on loans were to rise as a result, for example, of renewed financial market stress without a corresponding increase in income dynamics, the default rate would increase in both sectors. The evolution of nominal income, as proxied by nominal GDP growth, has not facilitated the repayment of loans accepted before the crisis since 2008 (see Chart II.7). A key factor going forward will be the evolution of relative debt servicing costs, which have increased in many countries.

**The credit market situation in the Czech Republic is relatively favourable, although income growth remains subdued**
In contrast to most euro area countries, the volume of loans in the domestic economy increased in 2013, driven mainly by loans to households for house purchase. In their case credit standards remained similar as in 2012, while for other loan types tightened slightly (see Chart II.8). The Czech Republic has a low ratio of bank loans to GDP, but also low income growth from the long-term perspective (see Chart II.9). However, it is one of a minority of countries in which debt servicing costs have also declined in recent years and remain at a low level (see Chart II.10). The ratio of interest and principal repayments to income is below 20%. This is due chiefly to a marked drop in interest rates on loans for house purchase, linked with the easing of monetary policy by the CNB and competition between mortgage loan providers.

**The Czech Republic’s external debt increased, but has higher coverage by banks’ external assets**
The ratio of the gross external debt of the Czech economy to GDP rose from 51% to 57% in 2013 (see Chart II.11). However, this rise was partly due to the statistical effect of the weaker koruna following the CNB’s foreign exchange interventions in November. It therefore needs to be seen in this context and should be assessed according to the coverage of the credit market situation in the Czech Republic.

6 The structural causes of the weakened consumer demand in advanced and emerging economies may include rising income inequality and an increasing share of capital in national income in relation to labour. In advanced countries this factor became very visible after the fall in demand temporarily funded by rising debt. The importance of this factor is pointed out in a highly regarded study written by the former IMF chief economist and current governor of the Reserve Bank of India Raghuram Rajan. See Rajan, R.: *Fault Lines: How Hidden Fractures Still Threaten the World Economy*, Princeton University Press, 2010.

7 In contrast to the euro area, therefore, private sector deleveraging is not needed in the Czech Republic.
the external debt by banks’ external assets, which conversely rose from 70% to 78% because of an increase in the CNB’s international reserves. The investment position deficit shrank by CZK 104 billion in 2013, and the figure is similar when adjusted for the direct investment balance. The government’s net external debt continued to increase at roughly the same pace as in previous years. According to the balance of payments statistics, this debt more than doubled to CZK 620 billion\(^8\) between 2008 and 2013 (see Chart II.12). Its further growth could be a source of systemic risk from the long-term perspective.

The government debt to GDP ratio stabilised

The general government deficit was 1.5% of GDP in 2013. The ratio of government debt to GDP fell from 46.2% to 46.0% in the same period (see Chart II.12). The decrease in the government’s gross borrowing needs\(^9\) was due to use of the issuance activity reserve; in the years ahead, it will return roughly to the levels seen in 2009–2012. Both the level and the growth rate of government debt are favourable in the European context. The level of the structural deficit may be problematic. Last year it reached the lowest level in several years (about 0.5% of GDP), but in the future it should rise towards 2% of GDP according to the CNB forecast. The ratio of government debt to GDP should be stable around 46% in 2014 and 2015 and increase to roughly 47% in 2016. Figures of around 50% may raise questions among investors about the sustainability of such debt levels. However, the structural characteristics of Czech government debt are favourable, thus reducing this risk.

Alternative economic scenarios

Alternative economic scenarios were defined on the basis of potential alternative future macroeconomic trends along with the risks identified. These scenarios are used mainly in section 4.2 to test the resilience of the Czech financial sector. The paths of key variables in each scenario are shown in Charts II.13A–D.\(^{10}\) The evolution of other variables relevant to the stress tests in relation to the evolution of the macroeconomic environment (credit growth, the default rate, the NPL ratio\(^{11}\) and property prices) is presented in the following sections.

The Baseline Scenario is based on the CNB’s May macroeconomic forecast published in Inflation Report II/2014 and assumes an increase in economic activity of 2.6% this year due to growth in both domestic and external demand. In 2015 the economy is expected to return to relatively robust growth of 3.3%. According to the forecast, the general

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\(^8\) Using the Ministry of Finance definition of external government debt as government debt issued abroad, the figure would be CZK 393 billion.

\(^9\) Unlike in the past, the Ministry of Finance now calculates the government’s gross borrowing needs net of repayments of T-bills. For the sake of comparability, we use the original methodology in the time series.

\(^{10}\) The path for the Baseline Scenario in the first two years is based on the CNB’s official prediction of May 2014. Beyond this horizon it is extrapolated towards the expected long-term equilibrium values.

\(^{11}\) The default rate and the NPL ratio relate to an identical event, i.e. a breakdown in a debtor’s payment discipline. Whereas the default rate is a (usually forward-looking) flow indicator focused on a particular time interval (see the Glossary), the NPL ratio is a stock indicator describing the level of NPLs at a given point in time.
unemployment rate will be flat at around 6.8% in 2014 and fall gradually from 2015 onwards. Headline inflation will increase from its low levels and reach the inflation target of 2% in early 2015. Consistent with the forecast is stability of market interest rates, followed by a gradual rise in rates as from the start of 2015. The koruna exchange rate will continue to be used as an instrument for easing the monetary conditions during 2014.

The Europe in Deflation stress scenario assumes a marked drop in economic activity in Europe, for example as a result of negative expectations about the global economy and a general increase in investors’ risk aversion with regard to emerging economies, or a resurgence of problems in the euro area. The Czech economy falls back into recession owing to a decrease in external demand, reinforcing the private sector’s pessimistic expectations about future economic developments and increasing the deferral of household consumption and corporate investment. The combination of a downturn in external demand and then also in domestic demand will cause a sizeable decline in economic activity in the Czech Republic over the entire three-year horizon and result in a “V-shaped” recession. In addition, the debt deflation scenario will materialise, with price deflation leading to an increase in private sector debt in real terms as a result of declining economic activity, rising unemployment and falling wages. Moreover, the adverse economic situation lasting since 2009 will cause the funds of households and non-financial corporations to become exhausted. Coupled with a rise in real debt, this causes a significant deterioration in their ability to repay. The problems in the real sector later also affect the financial sector, which records considerable credit losses and a marked decline in profits. Monetary policy remains easy, the three-month PRIBOR stays very low over the entire test horizon and the exchange rate weakens. However, long-term bond yields surge as global risk aversion increases and the safety of some assets is re-assessed.
2.2 NON-FINANCIAL CORPORATIONS

At the end of 2013 the non-financial corporations sector recorded an increase in performance in line with the economic recovery. However, the adverse effects of the long recession are still fading and performance differs significantly across industries. The sector’s total debt was not much higher, but current profits and real interest rate growth slightly reduced corporations’ ability to service their debts. The low increase in total debt can be explained mainly by demand factors, whereas credit supply can be assessed as satisfactory. The evolution of credit risk was favourable overall, though highly heterogeneous across the sector, with some industries recording a further rise. There are also large differences in credit risk in terms of corporation size, with the smallest firms having been hit hardest by the recent recession. The main risk scenario for the sector remains unfavourable developments in the Czech Republic’s trading partner countries and a return to recession. In addition to euro area developments, the sector’s financial situation may be affected by risks associated with an escalation of the Russia–Ukraine crisis.

The economic recovery in late 2013 is not yet fully reflected in the sector’s financial results…

The sector’s performance increased gradually in 2013, and Q4 brought some signals of a visible recovery. Overall, however, the results of the non-financial corporations sector for 2013 should be assessed with caution despite the favourable data at the year-end. The adverse tendencies associated with the long period of increased financial stress, when the economy was in recession and corporate financial reserves shrank, are still present. This environment continues to exert strong negative pressure on some corporations, putting their profit potential at risk. In 2013, profitability in corporations with return on equity (RoE) close to the median was similar to that in 2012 (see Chart II.14), but the growing difference between the median and mean RoE shows that other corporations recorded a decrease in RoE or an increase in losses. The proportion of loss-making corporations was similar to that in the crisis year 2009. The sector’s current condition and profitability is also documented by a falling investment rate and margin rate (see Chart II.15), although Q4 was favourable in terms of both these rates. According to the Baseline Scenario, growing external demand together with a weaker exchange rate and improving domestic sentiment should contribute to an overall improvement in the financial situation. However, the lag between the start of economic growth and its pass-through to the sector’s financial condition will probably still negatively affect its results in the course of this year.

… the nature of the main risks was broadly unchanged…

The main risks to the sector going forward are still linked with the robustness of the recovery in trading partners’ markets. If the adverse

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12 Besides some individual industries, small and medium-sized enterprises (SMEs) are most at risk. The situation in the SME segment is dealt with in more detail in Box 1.
Europe in Deflation scenario were to materialise, the risk level would increase further, potentially leading to a sharp deterioration in the situation because of shrinking financial reserves. The problems would be significantly exacerbated if the materialisation of the main risks were accompanied by a re-assessment of risk premia (see section 2.1), which would result in a rise in interest rates and a fall in debt servicing ability. In addition, the geopolitical risk in the form of potential sanctions threatening exports to Eastern markets (Russia and Ukraine), which have been growing in recent years, has increased significantly. On the other hand, retaliatory measures by the Russian Federation could result in a marked increase in prices of imported commodities, natural gas in particular.

... and differences in performance also persist across industries

Despite the economic recovery, some industries are still experiencing a strong downturn and facing problems with weak demand. The differences in performance are documented by asymmetric profitability developments (see Chart II.16). The fact that key industries accounting for a large proportion of the sector’s value added – especially manufacturing and, within it, the automotive industry – have managed to emerge from the downturn phase is an important factor for financial stability in the near term. Although the automotive industry recorded a decrease in margins on sales in 2013 (see Chart II.17) and its RoE for the year as a whole still declined (see Chart II.16), 2013 H2 saw a recovery in external demand and partly also in domestic demand. However, the over-dependence of economic growth on the automotive industry may be problematic in the long term, and the short-term positive effects do not necessarily signify a very robust type of stability for the sector.

Whereas the tensions in manufacturing have eased, the long-running crisis in construction continues. The slump in construction is significant also by European standards. Building construction, which is facing a dramatic decline in public orders, is particularly hard hit. In addition to construction, the recovery has not yet passed through very strongly to the situation in services. In the longer run, serious risks are emerging in the area of energy, electricity supply and coal mining. This is due to the unsatisfactory situation and low competitiveness of the European energy sector, especially compared to the USA.13 Although the signs of a direct threat may not be all that apparent for Czech energy companies yet, a marked reduction in planned investment, a decrease in production and a sustained decline in the sector’s RoE can already be seen (see Chart II.16). If energy prices were to stay higher in Europe than in the rest of the world in the long term, the competitiveness of European industry – and thus also of Czech industry – would probably fall.

13 The loss of competitiveness is mainly a result of high subsidies for renewable resources. If, however, the present course is changed and the subsidies are abolished, the energy segment based on renewable resources (e.g. photovoltaics) will be negatively affected. Czech banks' credit exposure to photovoltaics companies is currently around CZK 35 billion.
Credit risk is falling slightly overall…
Taking into account the length of the recession and the adverse conditions to which non-financial corporations have been exposed, the evolution of credit risk can be assessed as positive overall. The 12-month default rate on bank loans decreased gradually in 2013 (see Chart II.18), as did the ratio of non-performing bank loans to total loans to non-financial corporations (see Chart II.19). Non-bank financial intermediaries also recorded an improvement in corporate loan quality (see section 4.1). By contrast, one negative phenomenon in the credit risk area is that reclassification to the NPL category is not limited to old loans provided during the pre-crisis credit boom, but also applies to new loans, which are consequently turning into NPLs very quickly (see Chart II.20). This may indicate that some newly financed projects bear an increased level of risk and some banks are willing to lend to risky projects owing to sufficient liquidity or increased competition (see section 4.1).

Despite the improving macroeconomic data on the Czech economy, a more pronounced decline in credit risk cannot be expected in the near term. According to the Baseline Scenario, credit risk should be broadly flat for about a year and then fall slightly. If the present recovery proves to be only temporary and the conditions of the adverse Europe in Deflation scenario materialise, credit risk would rise sharply. It would start falling again in 2015, but would remain elevated (see Chart II.19).

... but the situation in some industries and in small enterprises remains extremely difficult
The overall evolution of credit risk masks large differences in riskiness across industries and may be over-optimistic (see Chart II.21). The varying level of credit risk across industries mirrors their differing performance in recent years. Construction, where credit risk has risen significantly further and the NPL ratio is almost four times higher than for the sector as a whole, is still one of the worst affected segments. With the conjunctural indicators in construction suggesting a continuing negative outlook, it can be assumed that credit risk in this industry may not have peaked yet. Some increase in risk can also be seen in manufacturing, primarily as a result of its worse performance in 2013 H1. Unlike in construction, however, the current data suggest a shift towards an improvement in the overall situation, and credit risk in this industry is no longer expected to rise significantly.

Besides the varying strength of its impact on individual industries, the length of the recession has also had a strongly asymmetric effect on loan riskiness in terms of the size of non-financial corporations. Whereas large enterprises have been able to withstand the adverse situation for a long time and their credit risk has tended to fall, the smallest (micro) enterprises, together with sole proprietors, have been exposed to much greater financial stress. This has led to an increase in their credit risk and has caused the indicators under review to follow a different course in recent years (see Chart II.22). Credit risk in the smallest enterprises is likely to remain very high in the near future and return to normal levels only very slowly. Given that these enterprises account for a high
proportion of total employment, this situation may also pose a risk to the future income situation of households (see Box 1 for more details).

**BOX 1: SITUATION OF SMALL AND MEDIUM-SIZED ENTERPRISES**

The financial soundness of small and medium-sized enterprises (SMEs) and their access to external funding have become a major issue in Europe in recent years. Given their high share in total employment and in the value added of the sector in the Czech Republic (about 70% and 50% respectively\(^{14}\)) any adverse changes in this segment would significantly affect the performance of the economy as a whole and increase the risks to financial stability. For this reason, the risk of the economic conditions having an asymmetric effect on the soundness of SMEs and large enterprises has started to be discussed more frequently in the post-crisis period, as SMEs tend to be less resilient to large one-off shocks as well as to shallow but long-running recessions. The financial condition of SMEs may also be more sensitive to an excessive reduction in credit supply or overly costly access to external funding. This box sets out to demonstrate how relevant these risks are to the Czech economy and what developments can be expected in the SME segment in the near future.

The correlation between firm size and performance in the Czech economy is not all that surprising and is determined to a large extent by the high share of exports in GDP and the dominant position of large firms in industries with a low price elasticity of demand. Whereas export performance, which is generally linked with the production of larger enterprises, has been satisfactory overall in recent years, domestic demand, which primarily affects locally operating small enterprises (which make up the majority of SMEs), has been unfavourable. In a long-running recession, a significant role is also played by the size of reserves, which tends to be higher in larger enterprises, thanks in part to their ownership structure, as some large firms can obtain relatively cheap funding from their parent companies abroad. Against the background of these factors one can indeed see large differences in the performance of individual types of enterprises in the crisis year 2009 and over the entire post-crisis period (see Chart II.1 Box and Chart II.2 Box). The smallest (micro) enterprises, which account for more than 90% of the SME population, have been worst affected.\(^ {15}\)

\(^{14}\) 2010 figures; source: CZSO.

\(^{15}\) The large proportion of loss-making micro-enterprises in 2009 and its subsequent gradual decrease may suggest that micro-enterprises are particularly sensitive to one-off strongly
This shows that the economic situation in recent years has hit small SMEs particularly hard and their low performance is a major factor hindering the overall recovery in the non-financial corporations sector. From the point of view of financial stability, the adverse situation in the SME segment is creating a noticeable source of growth in credit risk, which is particularly high in micro-enterprises (see Chart II.22). Other negative consequences of the poor condition of small enterprises – given their large share in employment – include a decline in real wages in this segment, a deterioration in the income situation of employees and the transmission of credit risk to the household sector.

Given the poor financial results and rising credit risk in the SME segment, the question of whether the stagnation in borrowing is due solely to insufficient demand for credit or whether borrowing has also been adversely affected by a tightening of credit standards, which may exacerbate SMEs’ problems, has become an important issue. In the latter case, it would make sense to take measures aimed directly at banks’ policies towards SMEs. The available data suggests that in the case of the Czech economy the truth lies more on the side of those who support the hypothesis that it is mainly a problem of insufficient demand. The absence of fundamental constraints on the credit supply side is confirmed both by banks in the BLS and by businesses themselves, which assess the availability of loans as good across all enterprise sizes.\(^{16}\)

If we adopt the simplified assumption that small enterprises generally take out smaller loans and large enterprises larger loans, we can examine the interest rate component of the credit conditions by means of the spread between interest rates on small and large loans (see Chart II.3 Box). It is clear that larger enterprises generally have access to cheaper financing, but in recent years the spread has remained relatively stable or has narrowed slightly. This does not suggest any one-sided tightening of the interest rate component for SMEs. The size of the spread also roughly corresponds to the amount reported by banks for the SME segment in the BLS (i.e. 0.4–1.2 pp, with gradual rate convergence during 2013). Banks also stated that similar conditions should apply throughout next year.

The slow reduction in the spread may to some extent be surprising, as the gap between the credit risk of small and large enterprises is not closing much. This signals that banks’ negative shocks, whereas small enterprises have difficulty withstanding a long period of recession.

\(^{16}\) The differences in the assessment of loan availability are larger across industries than across enterprise size (see above). The empirical literature has identified some financial constraints on the sound part of the SME segment in the immediate post-crisis period (see Pospíšil and Schwarz, 2014: Bankruptcy, Investment and Financial Constraints: Evidence from a Post-Transition Economy, CNB WP).
The willingness to lend to SMEs is not changing much despite the rising risks (for example due to stronger competition in the market). Nonetheless, banks have tightened the non-interest component of their credit conditions and are now demanding higher-quality and higher-value collateral or a higher degree of participation by SMEs in funding arrangements.

The CZSO’s regular surveys offer a picture of SMEs’ perceptions of the current and future economic situation. These surveys, in line with other indicators, show that in recent years larger industrial enterprises assess their condition generally more positively than small enterprises and are also more optimistic about the economic situation in the near future (see Chart II.4 Box). In the longer term, as domestic demand recovers, the situation in the SME segment should improve gradually and the segment should thus stabilise. However, the uncertainty associated with SMEs going forward remains relatively high, and continued in-depth monitoring of the segment is therefore necessary.

In the current conditions, the sector’s total debt level may trigger growing difficulties...

Although the total debt of non-financial corporations has not gone up much (see Chart II.23), their declining profitability is limiting the sector’s ability to generate enough funds to service the debt safely. Debt servicing ability is also currently being hampered by the low-inflation environment and the related rise in real interest rates on loans (see Chart II.24). Although nominal interest rates remain at record lows or are even showing a modest decline, the excessively low inflation has generated an increase in the real cost of debt, which nominal interest rates have not been able to absorb in full. By contrast, excessive escalation of corporate debt problems is being counteracted by conversion of the debt maturity profile towards longer maturities, thanks to which interest expenses are being spread over several years and funding is safer. In the event of a combination of negative trends, with the sector not showing any shift towards better financial results and real interest rates rising further amid a stable maturity profile, the current debt level may become an excessive burden. Such a scenario might materialise in the event of return of the economy to recession accompanied by deflationary pressures and a sharp increase in risk.

17 The breakdown in these business surveys is based solely on the criterion of the number of employees, which is different from the SME definition. It therefore represents only a rough breakdown from the SME perspective, but the results provide a good illustration of the overall situation.

18 Interestingly, in the construction industry it is the smallest enterprises (i.e. those with 1–19 employees) that are currently recording the best economic situation. This is because the construction industry is suffering above all from very low demand for large structures, which are built by large firms (see above).

19 See line NC.7 in the Table of Indicators and also Chart 1 in the thematic article An Indicator of the Financial Cycle in the Czech Economy published in this Report.
Number of bond-issuing non-financial corporations

Comparison of nominal real interest rates on bank loans to non-financial corporations

Concentration of bonds issued by Czech non-financial corporations

Loan availability is good, growth in lending is stagnating due to weak demand for loans...

... but the debt structure itself seems sustainable

As regards financial instruments, the sector structure of creditors and the debt structure have long been relatively stable and are not showing any shift towards more risky methods of financing. Besides trade credits, which traditionally account for a large share of the sector’s liabilities due to the frequency of client-supplier links, loans provided by the banking sector are still the key source of external funding. In the medium term, however, debt securities are playing an increasing role in the raising of external funds (see Chart II.23). However, this trend pertains mainly to certain large firms in high-investment industries. The concentration indices show that the Czech corporate bond market remains highly concentrated from the point of view of issuers (see Chart II.25), despite the fact that the number of issuers has increased noticeably (see Chart II.26). The increase in newly registered bond issues was motivated primarily by advantageous tax conditions. A closer look, however, reveals that only about one-quarter of the bonds have actually been issued to date. Some risks in the bond issue area are arising due to industry concentration. The most important issuers with rapidly growing indebtedness in the form of bonds include companies in the energy sector, which may become a problematic industry in the medium term (see above). On the other hand, the holders of these bonds are mostly non-residents, so the impacts of these risks on the Czech financial sector would be relatively limited if they materialised.

Loan availability is good, growth in lending is stagnating due to weak demand for loans...

A business survey conducted by the CNB and the Confederation of Industry in non-financial corporations reveals that most of the businesses surveyed now regard the availability of loans as normal or very good and only 6% see constraints on the credit supply side. The BLS results do not suggest any tightening of credit conditions either (see section 2.1), and the relatively constant interest rate margin on new loans also testifies against any tightening of the interest rate component of the credit conditions. The low credit growth observed in 2013 can therefore be explained primarily by demand factors, which reflected weak investment activity. A change in the credit dynamics was recorded in Q4, in line with high growth in investment in new machinery and equipment. According to the Baseline Scenario, credit growth will rise gradually, although over the next few years it will not reach the pre-crisis levels and will be relatively modest compared to those levels (see Chart II.27). By contrast, should the Europe in Deflation scenario materialise, the credit growth

premia. However, the likelihood of this scenario occurring has decreased following the CNB’s foreign exchange interventions.

20 Tax on interest income for bonds registered by the end of 2012 with a nominal value of one koruna is rounded down to the nearest whole koruna, i.e. to zero.

21 Loan availability is strongly industry-dependent. Most firms that assess loan availability as poor are operating in the construction industry.

22 Margins are calculated as the difference between the interest rate on new loans to non-financial corporations and the 3M PRIBOR.
rate would be strongly negative and the credit cycle would shift back towards its trough.

... and the growth rate and share of foreign currency loans are increasing

Compared to the low growth rate of total loans, foreign currency loans recorded relatively strong growth, causing their share in total loans to rise (see Chart II.28). This growth was partly due to an increase in the koruna value of loans owing to foreign exchange interventions and a low base. Growth in foreign currency loans had been observed before the interventions and may thus be linked more with the financing of planned investment projects (see also section 3.2). Foreign currency loans are traditionally taken out mainly by exporters, who use them as a mean of natural hedging against exchange rate risk. However, as the currency structure of loans to exporters has not changed much (see Chart II.28), it is likely that the increase in foreign currency loans is also partly due to firms with open foreign exchange positions. In the future, this may manifest itself in higher exchange rate risk and greater sensitivity of some firms to exchange rate changes.

The sector’s dependence on external developments is increasing

Owing to insufficient domestic demand, an ever larger proportion of domestic production is being channelled to foreign markets. Exports currently account for about 80% of GDP. The good results of exporters are reflected in their low credit risk, which is well below the level of the sector as a whole23 (see Chart II.29). However, the strengthening of the Czech economy’s export orientation further increases the dependence of the sector’s performance on external developments. Given the territorial structure of exports, non-financial corporations are exposed mainly to the risk of an escalation of the problems in EU countries (the Europe in Deflation scenario) and to the risk of an escalation of the Russia–Ukraine crisis. The share of exports to the Russian Federation and Ukraine roughly doubled between 2009 and 2013, and the value of exports is currently almost CZK 150 billion (or 4.7% of total exports of goods and services). The imposition of economic sanctions would probably lead to a sharp fall in this value. It could also put current investment projects at risk and lead to asset freezing and default on current trade receivables. Materialisation of these risks would have serious consequences for companies strongly oriented towards this region. On the other hand, if sanctions were imposed, the risk of a reduction in gas and oil supplies (about 5% of total imports) cannot be ruled out. This would result in a substantial increase in prices of production inputs and subsequently in a deterioration in the condition of the sector as a whole.

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23 As the largest exporters are mostly large enterprises, there is a clear correlation with the credit risk of large enterprises, which have larger reserves to absorb the impacts of economic shocks (see Chart II.22). The comparison of credit risk rates between the largest exporters category and the sector as a whole may be distorted by this fact.
2.3 HOUSEHOLDS

The labour market situation did not improve for households last year, as the unemployment rate remained flat or even increased and real wages fell again. The percentage of households that have loans remained similar to that in previous years, and the stock of both mortgage loans and consumer credit recorded a slight year-on-year increase in 2013. A further decline in interest rates on mortgage loans implied a slight decrease in the ratio of net interest payments of households to their disposable income. Despite a decline in real income, this was reflected in a slight fall in credit risk, which should continue into 2014. Growth in interest rates on mortgage loans coupled with a decline in income is the main risk to the household sector. This is a similar situation to the Europe in Deflation stress scenario. Households’ debt burden is relatively even across income groups, which is positive for financial stability. By contrast, the average ratio of the value of mortgage loans to the value of collateral is heterogeneous across regions. Refined stress tests indicate that household distress increased fairly significantly in 2012, but is expected to fall slightly in both 2013 and 2014. Should the Europe in Deflation scenario materialise, household distress would increase sharply, especially among low-income households, who also have the highest initial distress rate.

The real wages of households fell again, while the unemployment rate was flat

The continuing recession had a negative effect on the labour market in 2013. The average nominal wage was broadly flat (+0.1%), implying a decline in the average real wage (nominal wages were deflated by annual CPI growth) of 1.4% for the second consecutive year (see Chart II.30). The general unemployment rate (ILO) was broadly unchanged. An alternative unemployment indicator provides a different picture, however, as the share of unemployed persons monitored by the MLSA rose by 1 pp last year. However, the fact that total employment rose slightly can be seen as a positive development. Unlike in 2012, this rise was due mainly to rising employment among employees rather than sole proprietors. Thanks to the expected recovery in general economic activity, real wages should go up by 1.5% in 2014, which should at least partly neutralise the main source of credit default risk in the household sector. Thanks to the CNB’s foreign exchange interventions and the subsequent weakening of the koruna, the labour market situation should gradually improve in 2014, albeit for the time being through a shift from part-time to full-time work rather than the creation of new jobs.

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24 According to the CZSO’s Household Budget Statistics, which also contain non-wage items, the average net income of households recorded a larger real decline of 2.5%. Likewise, the real GDI of households dropped by 2.9%.
A decline in mortgage loan rates and an only slight rise in household indebtedness again resulted in a fall in the ratio of net interest payments to GDI

The ratio of household liabilities to gross disposable income increased slightly in 2013, reaching 61.6% (see Chart II.31). Nevertheless, the debt of Czech households remains low relative to their income and compared to advanced countries. The absolute value of loans recorded similar growth in 2013 as in the previous two years (4.5%; see Chart II.32). This was due mainly to an increase in mortgage loans of 5.2%. Consumer credit went up by 2.1%. This represents a halt in the decline recorded in 2012. Growth in loans to households should pick up over the next few years, but if the Europe in Deflation stress scenario were to materialise, the above-mentioned credit aggregates would decline (see Chart II.32).

As regards the percentage of households who had some sort of loan at the end of 2012, no major shift was observed in the income quintiles compared to previous years, so it still holds that loans were used mainly by high-income households. The difference is more pronounced in the mortgage loans segment – almost 39% of households in the highest income quintile and only 7% of households in the lowest income quintile had mortgages at the end of 2012. As regards consumer credit and other loans, low-income households were also less frequently indebted, although when one looks at households divided into quintiles according to income per consumption unit, low-income households had this kind of credit roughly as often as high-income households (see Chart II.33).

Despite the increase in households’ absolute debt, however, their net interest payments to banks relative to gross disposable income fell slightly in 2013, like they did in 2012. This was due to a further fall in mortgage interest rates, which reached historical lows. Households as a whole also slightly increased their relative wealth thanks to slow growth in their liabilities, with the ratio of net financial assets to GDP rising by 1.1 pp. In this respect, however, households are probably showing very heterogeneous developments across income groups. The structure of household financial assets remains similar as in the past, although a continuing upward trend in the share of government saving bonds (from 3.4% to 4.1%) and a downward trend in the share of time deposits (from 19.5% to 17.7%) can be seen.

The debt burden of households is very homogeneous across income groups

An analysis using the CZSO’s Household Budget Statistics reveals that the heterogeneity of households in terms of their income and debt burden is not very high. As Table II.1 shows, the ratio of households’ monthly loan repayments to their net monthly income (the debt-to-income ratio) is very stable across income deciles and over time, fluctuating around 13%. The Gini coefficient is used to assess the equality of the distribution of net
Note: As of 31 December 2012.
Source: BRCI, 2012 SILC, CNB calculation

Average LTV ratio of mortgages in regions when the loan was provided

Source: BRCI, 2012 SILC, CNB calculation
Note: As of 31 December 2012.

25 This coefficient hypothetically takes a value of 100% if only one household has all the income in the economy and the rest have no income (absolute inequality of income) and a value of 0% if all households have the same income (absolute equality of income).

26 It should be kept in mind that we obtain different values if we calculate the Gini coefficient at the level of individuals and before taxes and social benefits. However, in order to examine the facts, it is essential to take into consideration that people live in households and to take taxes and transfers into account.

27 However, the average property value for households with loans in the given region as of 31 December 2012 is used as the denominator. This may mean slight undervaluation of the denominator compared to the situation at the time when the loan was provided, when property prices were generally higher. The estimated values of the initial LTV ratio are thus probably overestimated and should be viewed as tentative and used mainly for comparison between regions.

28 The problem loan ratio used to compare the level of credit risk is conceptually similar to the NPL ratio, but cannot be compared directly to the NPL ratio due to the different ways in which BRCI and CNB statements are constructed.
mortgage liabilities of households, even if we take into account the division of households not only by region, but also by age. A likely explanation for this is that households with larger mortgages also have higher incomes on average.

Household credit risk fell slightly and this decline is set to continue According to the 12-month default rate, household credit risk fell slightly in 2013 (see Chart II.36). According to the Baseline Scenario, this decline is set to continue in the years ahead. The decline in this indicator was more pronounced in the house purchase loan segment than in the consumer credit segment. This is generally consistent with the relative insensitivity of credit risk and interest rates on consumer credit to the economic and financial cycle. The NPL ratio also fell (see Chart II.37). This temporary decrease in household credit risk in 2013 was due mainly to the record low interest rates on mortgage loans, which account for the majority of the total stock of loans to households. A rise in interest rates on these loans accompanied by a continued decline in real wages might present a risk in the future. Such developments would be broadly consistent with materialisation of the Europe in Deflation stress scenario, according to which the 12-month default rate would increase by around 2 pp at the three-year horizon. This, in turn, would be reflected in an increase in the NPL ratio of more than 2.5 pp (see Chart II.37).

Stress tests of households indicate that low-income households are highly sensitive to the stress scenario The household stress test methodology has been further refined compared to FSR 2012/2013 to include, for example, calibration of model labour market flows to match the flows actually observed. Generally, household distress is higher among low-income households and increased significantly across income quintiles in 2012 to a level at which it probably approximately remained in 2013 and at which it should stay in 2014 given the projected developments (see Chart II.38). The percentage of overindebted households rose most of all in 2012, when real wages declined and the unemployment rate went up. This had the strongest effect on the first two low-income quintiles. The proportion of households unable to repay their debts was broadly flat last year and should remain so in 2014 due to generally low interest rates on mortgage loans and renewed growth in real wages. As in the past, low-income households show the highest sensitivity to the Europe in Deflation stress scenario. Nevertheless, the ratio of their liabilities to the total stock of loans to households is relatively low, and high-income households show low sensitivity to stress, so materialisation of this scenario would have a limited impact on bank balance sheets.

29 Over the longer term, low interest rates on loans may encourage excessive risk-taking and result conversely in an increase in the NPL ratio.
30 This is described in detail in CNB Working Paper No. 2/2014 (Galuščák, Hlaváč, Jakubík).
31 This term is defined in the above-mentioned Working Paper.
32 The data for 2013 are only estimated even though the macroeconomic data for this year are mostly known. This is because the most recent available data at the individual household level are for 2012.
The impacts of a large jump in interest rates on household distress would be relatively modest

The household stress testing framework was also used to simulate the impact of a jump in interest rates of 3 pp in a situation where all interest rates on loans to households are fully variable. The impacts of this simulation on household distress are given separately for mortgage loans and non-mortgage loans (see Chart II.39). When determining whether a household will default on a mortgage loan or a non-mortgage loan, or both if it has both types of loans, it was necessary, due to a lack of data, to use the simplifying assumption that the household – after covering the essential costs of living – always uses its financial surplus first of all to repay the mortgage loan (including partially), even though it also has consumer credit that could be fully covered using the surplus. The simulation shows that over half of the increase in the percentage of overindebted households would be due to default on mortgage loans. Rather surprisingly, households in the highest income quintile are more sensitive to a rise in interest rates than households in the fourth income quintile (the second-highest income quintile). The overall rise in household distress given the above-mentioned shock would be 1.38 pp, which can be regarded as relatively modest given the strength of the shock. The impact on bank balance sheets would be reduced by the fact that low-income households, which would see the largest increase in distress, have a relatively low absolute value of liabilities.

The sizeable volume of new mortgage loans does not represent as large a risk for the banking sector as it might appear

New mortgage loans include loans which, strictly speaking, are not new at all. They merely have a new interest rate fixation period, either with the debtor’s original bank (refixation) or with another bank (refinancing). According to preliminary data, these two types of loans accounted for around half of all loans reported as new in 2014 Q1, but in most cases they do not in reality imply an increase in the claims on households of the banking sector as a whole. Moreover, the debtors associated with these loans have proved their ability to repay loans in the past, and this provides some indication of their payment discipline in the future. The publicly quoted figures on the volumes of new mortgage loans may thus be misleading in many cases (as they are not adjusted for refixations and refinancing). The same can be said generally for the concerns about growth in the credit risk assumed by banks. The new data also indicate that small and medium-sized banks are relatively successful in persuading...
clients of other banks to refinance their mortgage loans with their banks. Their share in refinanced loans is much higher than in the case of refixed or genuinely new loans (see the red columns in Chart II.40). This is reflected in a large share of refinanced mortgage loans in the total new mortgage loans of small and medium-sized banks, which may suggest a reduction in credit risk in these institutions, which are generally less resilient to credit risk than large banks.