4 Sensitivity Analysis and Comparison with Previous Update

4.1 Comparison with Previous Convergence Programme Update

The differences of the macroeconomic scenarios between current and previous programmes are not substantial (Table 4.1). In terms of GDP growth in the EU27, after a rather quick recovery in 2010 a similar dynamic as in the CP 2010 is expected, whereas higher growth in Germany and other “northern” countries will be offset by slower growth in the southern countries. The impacts of the moderately higher oil prices will be further reinforced by the Czech koruna’s expected weaker exchange rate against the dollar, so the total result will lead to a deeper deterioration of the terms of trade than expected in the 2010 CP.

The CP from January 2010 and its update both ensue from an assumption of continuing recovery in economic activity, but they differ considerably regarding its course in the individual years. Differences in the development of potential product and output gap, as well as the individual components of the GDP and key labour market indicators, stem also from this disparity.

The 2010 CP also could not have predicted the extent and timing of the fiscal austerity measures, which have feedback effects on the macroeconomic aggregates.

With respect to the public budgets and to the impact on their financing, slower growth of household consumption in 2011 and 2012, a more favourable situation and future development on the labour market, and a negative GDP deflator in 2010 can be considered the most important divergences in the macroeconomic scenarios.

Table 4.1 also shows that the real amount of the general government deficit is 0.6 percentage points lower than expected in January 2010. A number of active measures which should inhibit growth in the debt surely had positive effects. The lower trajectory is projected for the later years too.

Table 4.1: Change in the Indicators of the Scenario

		CP January 2010			CP April 2011		
		2010	2011	2012	2010	2011	2012
External assumptions							
GDP growth in EU27	%	1.1	2.0	2.2	1.8	1.8	2.1
Prices of oil	USD/barrel	81.0	92.0	91.0	79.7	95.0	95.5
Exchange rate USD/EUR		1.44	1.43	1.43	1.32	1.31	1.30
Exchange rate CZK/EUR		25.8	24.8	23.8	25.3	24.1	23.5
Real values							
GDP	change in %	1.3	2.6	3.8	2.3	1.9	2.3
Households consumption	change in %	-0.8	2.0	2.5	0.5	0.7	1.9
Government consumption	change in %	-1.7	0.0	-0.4	0.3	-3.4	-2.5
Gross fixed capital formation	change in %	-3.7	2.5	3.6	-4.6	0.7	3.2
Contribution of domestic demand	p.p.	-0.2	2.0	2.3	1.3	0.1	1.2
Contribution of foreign trade	p.p.	1.5	0.6	1.5	1.0	1.8	1.1
Potential product	change in %	2.5	2.5	3.0	1.6	1.8	2.2
Output gap	%	-5.6	-5.5	-4.8	-2.7	-2.6	-2.5
Growth							
HICP	change in %	1.8	1.5	1.8	1.2	2.2	3.4
GDP deflator	change in %	0.5	1.0	1.5	-1.1	-0.5	2.7
Employment	change in %	-1.6	-0.4	0.6	-0.8	0.1	0.5
Unemployment rate	%	8.8	8.6	7.6	7.3	6.9	6.5
Balance of goods and services	% of GDP	6.8	7.0	8.1	4.8	4.5	5.3
Net lending/borrowing	% of GDP	1.0	0.2	0.6	-0.2	-0.6	0.0
General government							
Net lending (+)/borrowing (-) (EDP B.9)	% of GDP	-5.3	-4.8	-4.2	-4.7	-4.2	-3.5
General government debt	% of GDP	38.6	40.8	42.0	38.5	41.4	42.4

Source: MF CR (2010b), MF CR (2011a). MF CR calculations.

4.2 Sensitivity Analysis

The Czech economy is small and open by nature, and therefore largely dependent on developments abroad. The sensitivity scenarios aim to show the extent of impacts from development of economic growth in the EU other than that expected as well as of alternative oil price developments (results are summarised in Table 4.2). In this chapter, we examine only the more pessimistic development of the stated indicators; an optimistic variant would have analogous inverse impacts of nearly the same size. The outcomes of the alternative scenarios are derived from the Macroeconomic Forecast (Ministry of Finance, 2011a), which is the basis for the entire CP.

4.2.1 Slower Economic Growth in the European Union

The pessimistic scenario for development in the EU is based on the assumption of slower economic growth, defined as a 1 percentage point lower real GDP growth worse starting from the beginning of 2012.

The considered scenario would be reflected in the Czech economy through exports, more than 80% of which are directed into EU countries. Lower foreign demand would lead to a decrease in net exports (and decrease of the current account balance), which would be negatively reflected in real GDP growth and the development of unemployment. The influence on inflation appears very moderate, as two conflicting effects collide here: (i) due to the influence of lower production of the Czech economy, there would be a decrease in wage pressures which would push inflation downwards; (ii) on the other hand, deterioration in the current account balance would have a depreciating influence on the Czech koruna, thus increasing the prices of imported inputs. The result would be only a minor increase of inflation within 0.1 percentage point.

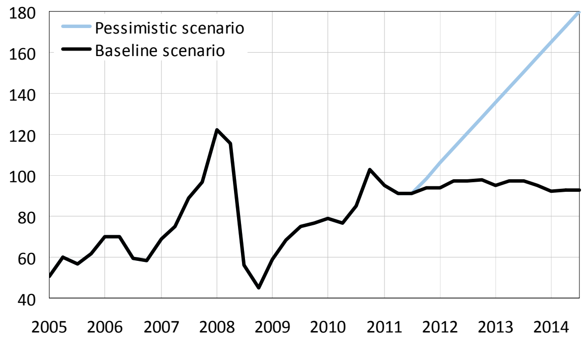
The government balance would thus be influenced by lower collection of taxes from both enterprises and individuals. At the same time, the expenditure side would increase because of higher volume of unemployment benefits paid out. Higher government deficits would result in higher accumulation of debt.

4.2.2 Faster Rise in Oil Prices on World Markets

An unfavourable development of oil prices would have a negative effect not only on the Czech economy, but it also would influence development throughout the EU. The sensitivity analysis therefore includes, apart from the direct impact of oil prices on the domestic price level, also two secondary effects: the influence of foreign inflation and of foreign demand.

A negative development on world oil markets is defined as a 10% higher year-on-year rise in oil prices in the individual years starting in 2012. The difference from the baseline scenario is illustrated by Chart 4.1. Thus, in the pessimistic variant, the price of oil would gradually rise to USD 132 per barrel in contrast with the relatively stable price ranging between USD 90 and 100 in the base scenario.

Chart 4.1: Scenario for Oil Prices
(Brent oil in USD/barrel)



Source: IMF (2011). MF CR calculations.

The results are both primary nominal impacts on inflation and secondary real effects. The differences in the first year would be rather negligible, due to the relatively small difference between the variants.

Due to the effect of gradual increase in oil prices, the internal imbalance would worsen, as measured by the current account balance. Higher raw materials prices would push the prices of companies' inputs higher, which would result in a growth of price level.

Slower growth in foreign demand would negatively affect the growth in exports, and thus also in production. This would consequently be reflected in lower GDP growth. The influence on unemployment would be negligible; a negative impact would occur rather in slower growth of real wages.

It is possible to expect that realisation of the pessimist scenario could lead to a deterioration in public finances with a subsequent effect on higher accumulation of debt. Here, another effect also could have a negative influence, as the resulting higher inflation rate is connected to higher interest rates and therefore higher debt service costs.

Table 4.2: Basic Macroeconomic Indicators – Sensitivity Scenarios

		2009	2010	2011	2012	2013	2014
Baseline scenario							
Gross domestic product	*Y-o-Y in %*	-4.1	2.3	1.9	2.3	3.3	4.0
Inflation (HICP)	*Y-o-Y in %*	0.6	1.2	2.2	3.4	1.6	2.1
Unemployment rate	*in %*	6.7	7.3	6.9	6.5	6.1	5.5
Government deficit	*% of GDP*	-5.9	-4.7	-4.2	-3.5	-2.9	-1.9
Gross government debt	*% of GDP*	35.4	38.5	41.4	42.4	42.8	42.0
Current account	*% of GDP*	-3.2	-3.8	-4.0	-3.4	-3.6	-4.1
Pessimistic scenario - slower EU growth							
Gross domestic product	*Y-o-Y in %*	-4.1	2.3	1.9	1.8	2.5	3.4
Inflation (HICP)	*Y-o-Y in %*	0.6	1.2	2.2	3.4	1.6	2.2
Unemployment rate	*in %*	6.7	7.3	6.9	6.6	6.2	5.6
Government deficit	*% of GDP*	-5.9	-4.7	-4.2	-3.7	-3.3	-2.3
Gross government debt	*% of GDP*	35.4	38.5	41.4	42.4	43.1	42.3
Current account	*% of GDP*	-3.2	-3.8	-4.0	-3.9	-4.5	-5.0
Pessimistic scenario - higher oil prices							
Gross domestic product	*Y-o-Y in %*	-4.1	2.3	1.9	2.2	3.1	3.8
Inflation (HICP)	*Y-o-Y in %*	0.6	1.2	2.2	3.5	1.9	2.5
Unemployment rate	*in %*	6.7	7.3	6.9	6.5	6.1	5.4
Government deficit	*% of GDP*	-5.9	-4.7	-4.2	-3.5	-3.0	-2.1
Gross government debt	*% of GDP*	35.4	38.5	41.4	42.4	42.9	42.1
Current account	*% of GDP*	-3.2	-3.8	-4.0	-3.4	-3.5	-4.0

Source: MF CR calculations.

4.3 Verification of the Scenario by Means of Other Institutions' Forecasts

The CP's macroeconomic scenario was compared with the forecasts of other relevant institutions. This enquiry was made in April 2011 and its results are based on the forecasts of 18 domestic and 2 foreign institutions (see MF CR, 2011c).

Generally, it can be said that the fundamental trends for future development considered in the CP 2011 macroeconomic scenario are confirmed by the averages of the other institutions' forecasts. Those divergences existing can be explained in part by inclusion of impacts from the proposed VAT changes into the Ministry of Finance's macroeconomic scenario and this factor's non-inclusion into the forecasts of some of the monitored institutions. Other planned measures also are included into the CP's macroeconomic scenario, and therefore the results of that examination lead to a different opinion concerning government consumption.

Table 4.3: Verification of 2011 Convergence Programme Scenario by Other Institutions' Forecasts

	Average of forecasts			CP April 2011		
	2012	2013	2014	2012	2013	2014
Growth in real terms						
GDP	2.8	3.2	3.3	2.3	3.3	4.0
Households consumption	1.8	2.7	2.6	1.9	3.3	4.2
Government consumption	-0.2	-1.0	0.5	-2.5	-1.3	0.1
Gross fixed capital formation	2.7	3.0	3.2	3.2	5.6	7.2
Growth						
National CPI (aop)	2.5	2.1	2.2	3.2	1.5	2.0
GDP deflator	2.0	1.8	2.0	2.7	1.6	1.8
Employment (LFS)	0.2	0.1	0.3	0.5	0.6	0.7
Unemployment rate (LFS, level in %)	6.8	6.7	6.4	6.5	6.1	5.5

Source: MF CR calculations.