3 Macroeconomic Scenario

The macroeconomic scenario was conceived as realistic and conservative and attempts to balance out the positive and negative risks of economic development. A comparison with the previous Convergence Programme is given in Section 5.

3.1 The World Economy and Technical Assumptions

The world economy[2]

The current state of the external environment of the Czech economy can be summarised as follows:

- Growth of developed economies in the first half of the 2005 against the previous year had declined. The dynamics of the global economy are driven by China and other Asian countries.

- Growth of the US economy remains solid despite a slight weakening to 3.6% in the first half of 2005. The ever-increasing current account deficit, which is still accompanied by a high budget deficit, is an exchange rate risk.

- Economic output growth of the EU-25 countries in the first half of 2005 slowed to 1.4%. Net export and investment contributed most to this growth, while household consumption was flat.

- The enlargement process has a positive effect on the EU economy as a whole. The new member states are growing at a faster pace than the EU-15. Important pro-growth factors include liberalised cross-border trading with the new member states, more opportunities for cooperation, increased mobility of the labour force in the enlarged EU and lower saturation of the internal market in the new countries.

- The prices of crude oil in US dollars in nominal terms reached the highest level in history. We expect a peak of over USD 60 per barrel during the first half of 2006. A very slow decline should occur during the following period. The high demand in developing Asian economies is behind this development.

For the upcoming period, 2006 to 2008, we anticipate a gradual increase in GDP dynamics in the EU. The positive impulses coming from EU enlargement should also contribute to this development. Nevertheless, starting up German economic growth will be an important precondition. Economic growth in the EU-25 countries should be in a range of 2% to 2.4% during this period. This should be further driven by net export and investment. Successful structural reforms on the labour market (especially in Germany) should stimulate household consumption growth.

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[2] *For technical reasons, it was not possible to use the "common assumptions on the external environment" in preparing the Convergence Programme according to the Code of Conduct. The Spring EC Forecast, published in April 2005, was already outdated and the assumptions of the Autumn Forecast were not yet known at the time of preparing the programme (September 2005). Therefore, the macroeconomic scenario was supplemented by a sensitivity analysis of certain macro-indicators based on the exogenous variables in Section 5.*

The assumptions of the scenario include the stability of world commodities and financial markets and overall political stability within a wider region, including the absence of unforeseen events with a global impact (e.g. international terrorism).

The most important exogenous assumptions on the external environment up to 2008 are summarised in the following table:

Table 3.1: Assumptions on the external environment

		Year 2004	Year 2005	Year 2006	Year 2007	Year 2008
USD/EUR exchange rate	(annual average)	1,24	1,26	1,24	1,24	1,24
EU-25 GDP	(real GDP growth, y/y, in %)	2,3	1,5	2,0	2,3	2,4
Germany GDP	(real GDP growth, y/y, in %)	1,6	1,0	1,4	1,7	2,0
Oil prices	(Brent, USD/barrel)	38,3	55,5	60,5	57,8	54,3

Source: Eurostat, IMF, calculations of the Ministry of Finance

The risks of the scenario include, in particular, another potential rise in oil prices. In the current phase of the cycle, such development would most likely affect the economic performance in Europe more than in other regions. A sensitivity analysis of the exogenous assumptions is presented in Section 5.

As for the impact on the Czech economy, the growing dynamics of GDP, and particularly foreign trade in the previous period, shows that the country has profited from joining the EU common market and from improvements in the institutional environment.

Technical assumptions

The assumptions on short-term interest rates were chosen to be consistent with meeting the CNB's inflation target.

In the exchange rate area, the scenario is based on the assumption of a continued long-term trend towards real exchange rate appreciation, which continues with practically no interruption throughout the transition process alongside real convergence. From 1998 to 2004, the real exchange rate vis-à-vis the euro (deflated by the GDP deflator) appreciated on average by more than 4% per year. From 2005 to 2008, we expect average real appreciation of around 3% per year, which during low inflation, would tend to cause nominal appreciation of the CZK/EUR exchange rate.

Every year, the outlook for meeting the Czech Maastricht criteria and the alignment level of the Czech economy with Eurozone economies will be assessed. Should positive results be achieved, the Czech Republic could enter ERM II by the end of the monitored period.

3.2 Current Macroeconomic Development

Current macroeconomic developments[3] in the Czech Republic are encouraging.

For the sixth quarter in a row, year-on-year growth of the Czech economy has been in a range over 4%, and reached 5.1% in Q2 2005. From a perspective view, the structure of growth is

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[3] *Based on the available data as of 15 September 2005*

favourable. It is driven in particular by an increase in net exports, which has been reflected in foreign trade's positive contribution to GDP growth since 2004.

Growth acceleration is structural as well as cyclical in nature. Thanks in particular to a robust increase in total factor productivity, the growth rate of potential GDP has accelerated systemically, and according to our calculations, reached 4.2% in Q2 2005. The negative output gap has closed as well.

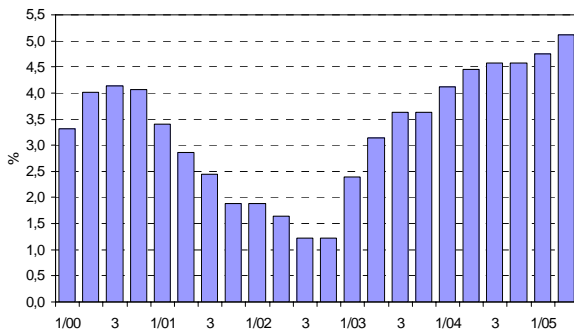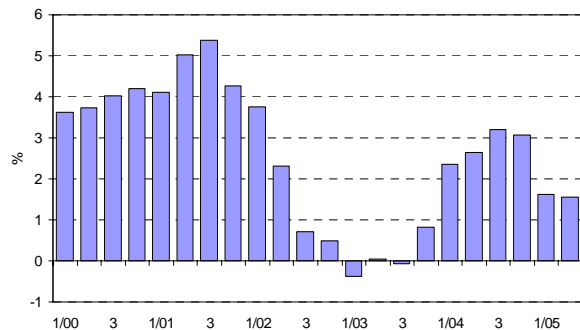**Chart 3.1: Real GDP**
y-o-y growth in %

Chart 3.2: Average inflation rate
y-o-y growth in %

Source: Czech Statistical Office

The calm developments seen in consumer prices have continued. Since the beginning of 2005, year-on-year growth has been below 2%, showing 1.7% in August 2005 (HICP 1.4%). The effects of record raw material prices on world markets are partially offset by a strengthening exchange rate. An important role is also played by the high level of competition on the consumer market.

Positive effects have also been apparent on the labour market. After several years of decline, employment (according to a sample labour force survey) began to increase in Q4 2004. In Q2 2005, growth reached 1.1%, while the most significant increases occurred in construction, the manufacturing industry, education and healthcare. The dynamics of labour productivity growth remained around 4% per annum. The unemployment rate after seasonal adjustment reached a peak of 8.4% in Q1 2004 and has been slightly declining since this time. It remains to be seen to what degree cyclical development from the delayed effects of closing the negative output gap has played a role and to what extent it has been affected by improvements in the structural characteristics of the labour market and active employment policy measures.

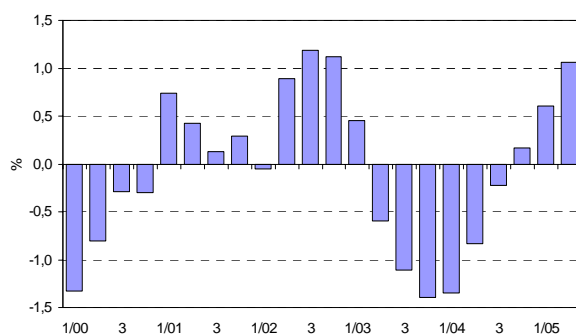**Chart 3.3: Employment** *(sample LFS)*
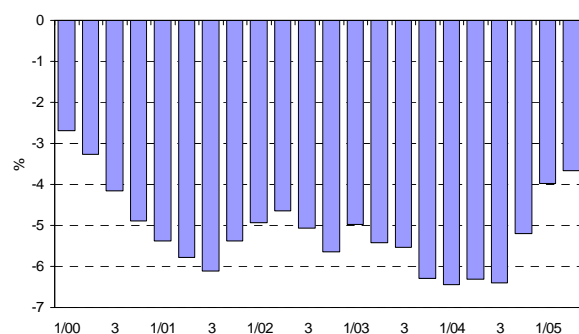*y-o-y growth in %*

Chart 3.4: Current account/GDP
in %

Source: Czech Statistical Office, Czech National Bank

The external balance, expressed by the ratio of the current account balance to GDP on an annual aggregate scale, has been improving since Q3 2004. In Q2 2005, the current account deficit reached 3.7% of GDP. The main factor behind this development is the unprecedented improvement in the trade balance as a result of simplifying the procedures for foreign trade following EU accession and completion of certain important export-oriented investments. The trade balance, which was still showing a deficit of 2.7% vis-à-vis GDP at the end of 2003, registered a surplus of 1.0% of GDP in Q2 2005, in spite of high oil prices.

3.3 The Medium-Term Scenario

Potential GDP and the position within the economic cycle

According to our estimate based on the Cobb-Douglas production function[4], the growth rate of potential GDP significantly accelerates starting in 2000 (from 1.5% in 2000 to an estimated 4.3% in 2005). The main factor behind this is accelerated growth of the trend components of total factor productivity. In addition, the negative output gap had closed at the beginning of 2005.
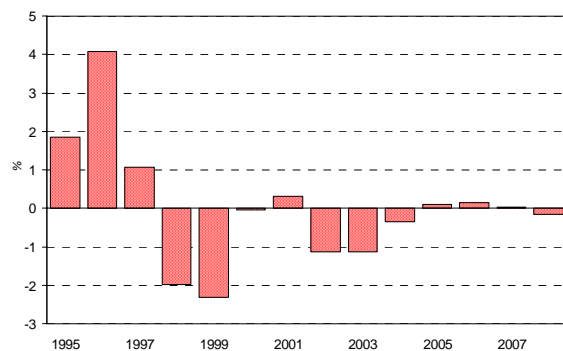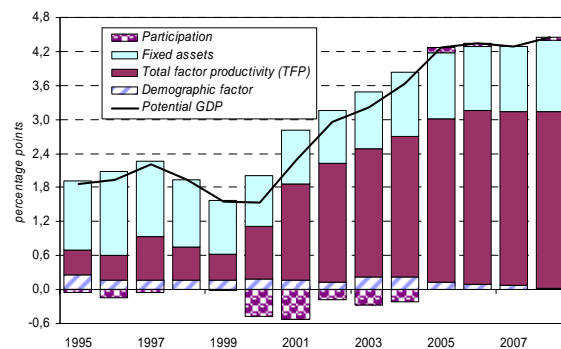
Chart 3.5: Output gap

Chart 3.6: Potential GDP growth

Source: Calculations of the Ministry of Finance

In accordance with the precautionary principle, we do not believe that it is possible to maintain such acceleration of potential GDP growth during the monitored period. Therefore, the programme's scenario is based on the assumption that the rate of potential growth will slightly increase and reach 4.5% in 2008 due to higher total factor productivity. Productivity growth should in particular be generated from an improvement in the institutional parameters of the economy and the quality of the business environment as well as from introducing new technology associated with an inflow of foreign direct investment.

The contributions of fixed assets inventories and the labour force have remained stable. The declining benefit of demographic development will be offset by a rising participation rate, supported by the proposed reduction in direct taxes for the low- and medium-income groups.

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[4] *Calculations of potential GDP and the output gap are currently made using the national methodology described in the 2002 Pre-Accession Economic Programme. The main distinction from the European Commission's method, important for interpreting the results, is the use of the clause "zero sum of output gaps over time".*

The growth trajectory of potential GDP implies that the real convergence process will continue towards the economic level of EU countries.

Implementation of the public finance reform and structural policy measures could help to accelerate the growth rate of potential GDP above the projected dynamics. However, there is also a perceptible risk of development in the opposite direction relating to possible long-term complications on the commodities markets or on the markets of our trade partners.

We assume that macroeconomic policies and the functioning of automatic fiscal stabilisers will be so flexible in upcoming years that the economic cycle's high volatility from the 1990s will not be repeated and that the economy will generally be in the range of its potential. With the projected GDP growth rates, a substantial positive output gap should not develop.

GDP and the demand side

Real GDP growth will be in a range of 4.5% in the period up to 2008 with a gradual recovery of domestic demand and a positive, though declining, contribution from the foreign trade balance.
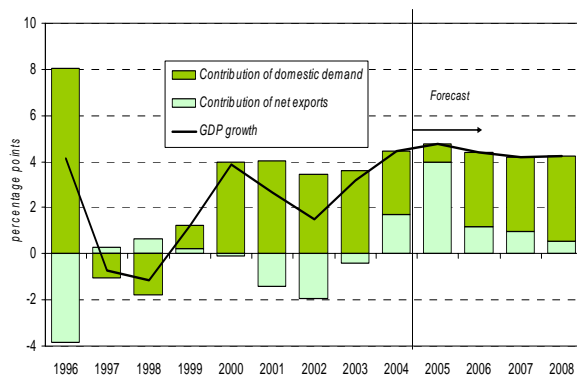
Table 3.2: Economic growth *(CZK billion, increase in %)*

	ESA Code	Year 2004 level	Year 2004 rate of change	Year 2005 rate of change	Year 2006 rate of change	Year 2007 rate of change	Year 2008 rate of change
1. Real GDP	B1*g	2669	4,4	4,8	4,4	4,2	4,3
2. Nominal GDP	B1*g	2750	7,6	5,7	6,7	7,0	7,4
Components of real GDP							
3. Private consumtion expenditure	P3	1343	2,1	2,3	3,5	3,6	3,6
4. Government consumtion expenditure	P3	592	-2,0	-0,6	-0,2	-0,5	-0,5
5. Grossed fixed capital formation	P51	737	7,6	2,8	3,4	4,8	7,5
6. Change in inventories and net acquisition of valuables (% GDP)	P52+P53	9	0,3	-0,4	0,3	0,6	0,7
7. Exports of goods and services	P6	1938	21,9	9,5	10,2	9,8	10,0
8. Import of goods and services	P7	1950	18,4	3,9	8,8	8,9	9,8
Contributions to real GDP growth %							
9. Final domestic demand			2,6	1,8	2,6	2,9	3,6
10. Changes in inventories and net acquisition of valuable	P52+P53		0,1	-1,0	0,6	0,3	0,2
11. External balance of goods and services	B11		1,7	4,0	1,2	1,0	0,6

Source: Czech Statistical Office - quarterly national accounts, calculations of the Ministry of Finance

High oil prices, in particular, and only a slow increase in the most important export markets will have an adverse effect on economic growth. In the upcoming period, the temporary effects associated with the Czech Republic's EU accession will also die out. However, the country's membership in the EU will continue to be a pro-growth factor. We expect the process of economic convergence with the neighbouring advanced EU countries to continue. The Czech Republic's economic level (GDP per capita in purchasing power parity) in comparison with the EU-25 will increase by about seven percentage points against 2004 to ca 77% in 2008 according to this scenario.

Chart 3.7: Decomposition of GDP growth   **Chart 3.8: GDP in parity per capita**
(EU-25 = 100)
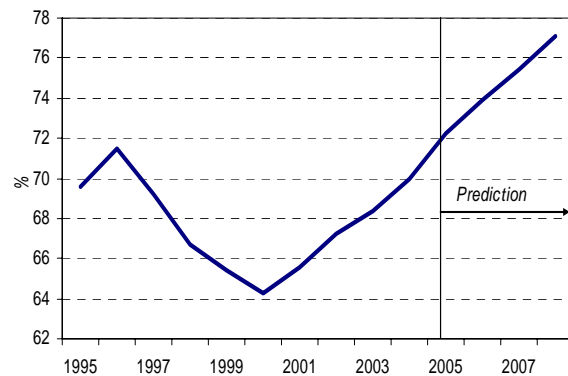
Source: Czech Statistical Office, Eurostat, calculations of the Ministry of Finance

Following strong dynamics in 2003 of 4.6%, household consumption growth (including non-profit organisations) slowed significantly in 2004 and 2005 to 2%. Low interest rates support the propensity of households to invest in personal housing needs, which in turn draws on a part of their disposable income. Year-on-year growth in the stock of mortgages of more than one third increases the long-term debt burden of households and reduces the growth rate of expenditures on final consumption. During the upcoming years, household consumption expenditures should increase slightly less than GDP. Slower growth of unit labour costs against growth in the GDP deflator should allow for a rise in economic output in an environment characterised by low domestic inflation pressures and higher profitability in the corporate sphere.

Government consumption in 2004 and 2005 has declined and should be flat or even slightly decrease in the future. The public finance reform will prompt government institutions to behave economically from the standpoint of employment in the government sector as well as in purchasing goods and services.

The peak of investment activity was reached in 2004. Following a certain slowdown in 2005 and 2006, the dynamics should be renewed and exceed the rate of GDP growth primarily due to the continued inflow of foreign direct investment, which reflects the Czech economy's high attractiveness for foreign investors. Foreign owners in the Czech Republic are expected to reinvest a significant part of their profits, and the new capacity will primarily be export oriented. In addition, an increase in the investment activity of domestic companies can be expected. One risk for the rapid recovery of high investment dynamics is any deterioration of the financial situation in the corporate sphere influenced by the high costs of energy input.

In 2007 and especially in 2008, the contributions from structural funds and the Cohesion Fund should significantly increase as a part of the new Financial Perspective. Together with co-financing from public budgets, they will be mainly channelled into infrastructure improvements. In association with this, however, we expect these investments to partially replace projects that would otherwise be financed only by domestic resources.

The contribution of the trade balance for goods and services in constant prices to GDP growth has attained positive figures since 2004. In 2005, it should reach around 4.0 percentage points, which is not only a record figure for the Czech Republic, but also remarkable by international standards. This positive contribution is anticipated to persist up to 2008. The actual extent will

depend on meeting the assumptions for the external environment, the launch of new technological complexes and on domestic demand developments.

Prices

The Czech economy has been characterised by low inflation since the end of the 1990s. The inflation targeting regime has had a positive influence on this development and helps to guide the inflation expectations of economic agents.

Since the beginning of 2005, year-on-year consumer price growth has been below 2%. We do not expect any acceleration in inflation until the second half of the year, when in particular the higher prices of petroleum and diesel fuel, an additional adjustment in excise taxes on tobacco products and an increase in regulated natural gas prices should temporarily increase inflation.

Table 3.3: Prices of goods and services

	Year 2004	Year 2005	Year 2006	Year 2007	Year 2008
Percentage changes					
HICP	2,6	1,5	2,2	2,0	2,1
National CPI	2,8	1,9	2,5	2,3	2,5
GDP deflator	3,0	0,9	2,2	2,8	3,0
Consumption of households deflator	2,7	1,5	2,4	2,3	2,9

Source: Czech Statistical Office – price statistics and quarterly national accounts, calculations of the Ministry of Finance

The average inflation rate is estimated to be around 1.9% for 2005. From 2006 to 2008, price growth should be around 2.5%, therefore, undershooting the CNB's inflation target within the range of tolerated deviations.

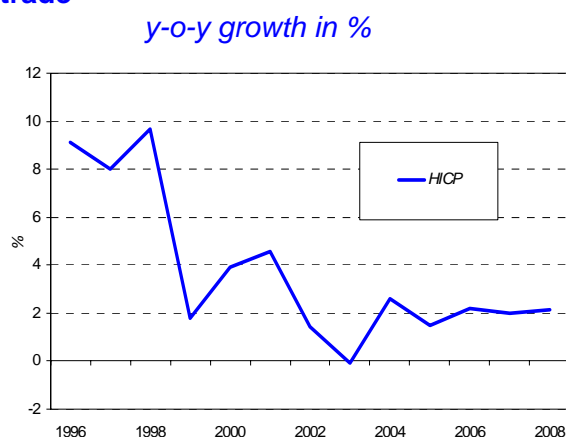### Chart 3.9: Consumer prices trade
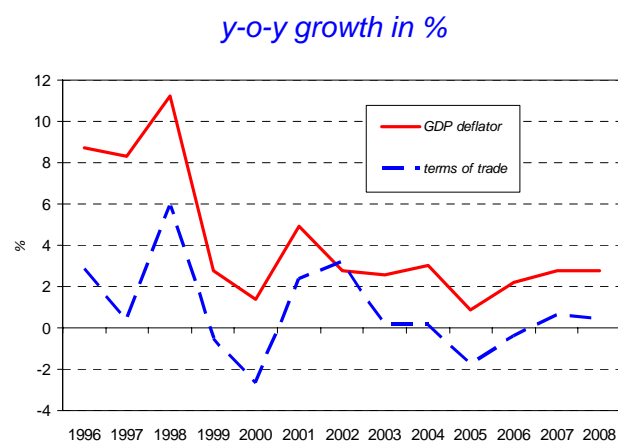*y-o-y growth in %*

Chart 3.10: GDP deflator and terms of trade
y-o-y growth in %

Source: Czech Statistical Office- price statistics and quarterly national accounts, calculations of the Ministry of Finance

This prediction is based on the above-mentioned exogenous assumptions and continuous non-inflation growth of total unit labour costs. In 2008, inflation should also be affected by the

expiration of escape clauses anticipated for excise taxes on cigarettes and VAT. The VAT rate for residential construction still remains open.

The implicit GDP deflator increased in 2004 according to the revised data by 3.0%. From Q3 2004, however, there is a year-on-year decline in terms of trade due to a rise in the prices of imported raw materials, which slows down the growth of the GDP deflator. The estimate for 2005 is around 0.9%, which also shows up in slower nominal GDP dynamics against the 2004 growth rate. In subsequent years, GDP deflator growth should slightly exceed the average inflation rate for consumer prices under the assumption of a decline in Czech koruna oil prices. Terms of trade will then improve thanks to an increase in export prices.

The labour market and wages

On the labour market, the continuous decline in the employment rate came to a halt at the beginning of 2005, and in fact, a slow increase in this indicator can be observed. Similar development has also been seen for the participation rate. A change in the trend for the unemployment rate has also been registered, now showing a slow reduction.

Unemployment, in particular, is of a structural nature, which shows up in an increase in long-term components and regional differences. This has a negative impact on social solidarity as well as on the performance of public budgets.

Table 3.4: Employment and wages

	Year 2004	Year 2005	Year 2006	Year 2007	Year 2008
Percentage changes					
Employment (LFS)	-0,6	0,9	0,8	0,5	0,4
Compensation of employees	6,5	5,2	5,3	6,0	6,5
Average real gross wage 1)	2,2	1,6	1,9	3,2	3,8
Unit labour costs 2)	0,9	0,4	0,9	1,8	2,1
Per cent					
Unemployment rate ILO	8,3	7,9	7,4	7,1	6,9
Employment rate 3)	64,9	65,4	65,8	66,0	66,2
Participation rate 4)	70,8	70,9	71,0	71,0	71,1

1) Wage bill per one employee (according to the sample labour force survey) deflated by the CPI
2) Nominal compensation of employees per unit of real GDP
3) Share of total employment in the population 15 to 64 years old
4) Share of the labour force in the population aged 15 to 64 years old

Source: Czech Statistical Office – employment statistics and quarterly national accounts, calculations of the Ministry of Finance

Several reform measures are now being prepared that respond in part to the specified problems. (see Box 2.2).

The demand side of the labour market will still be affected by high economic growth. This has already caused a turn in the employment trend and should generate more jobs in the future through the development of small and medium-size enterprises. Although the number of new jobs created by foreign direct investment inflow is not high enough to cause substantial changes on the labour market, it is important to stress its positive impact in the form of indirect effects associated with engaging domestic firms as sub-suppliers.

The restructuring process will continue to adversely affect the labour market, which puts pressure on increasing labour productivity and is related to terminating ineffective operations. Redundant or laid-off employees on the labour market are then faced with requalification requirements, which create problems of a regional nature as well as in the area of long-term unemployment.

Assuming that relevant structural policy measures are successfully implemented and existing GDP growth still exceeds 4%, a slow increase in employment can be expected[5] connected with a decline in the unemployment rate, which could reach 7% in 2008. Should implementation of these needed reforms be delayed, it could have a negative impact on economic growth due to a lack of flexibility on the labour market.

Chart 3.11: Employment and participation rate   Chart 3.12: Unemployment rate
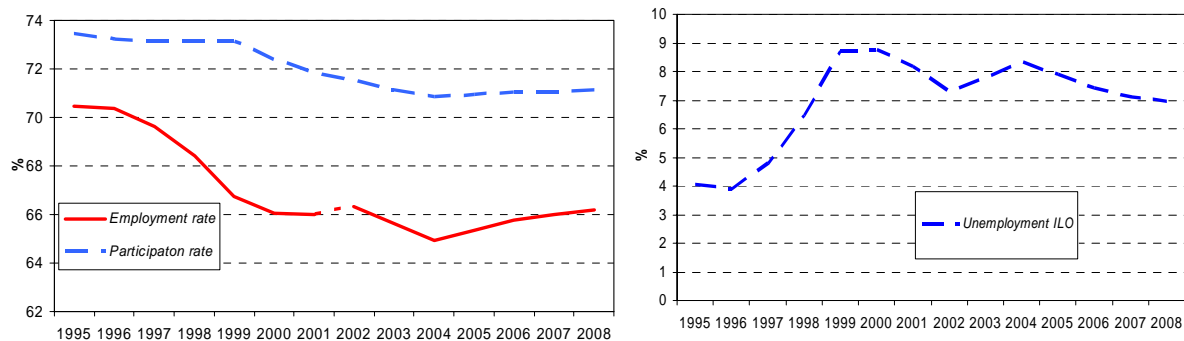
Note: The employment and unemployment rate from the sample labour force survey is not comparable between 2001 and 2002 due to a change in methodology.

Source: Czech Statistical Office – employment statistics, calculations of the Ministry of Finance

The current wage level copies labour productivity growth and hence does not interfere with the Czech economy's macroeconomic stability. As for wage developments, we anticipate a slow acceleration in average wage growth from 5% to 7%. The growth rate of total unit labour costs should increase from 0.4% in 2005 to 2.1% in 2008, which should not generate wage inflation pressures. During the monitored period, we do not expect any significant changes in the number of working hours per employee. Labour productivity growth should be in a range of 3.6% to 3.9% per annum.

3.4 Foreign relations and sectoral balances[6]

The negative balance of net lending reached its highest level in 2003, i.e. 6.2% of GDP. In 2004, this was reduced to 5.2% of GDP thanks in particular to an improved balance of services.

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[5] *The National Reform Programme is, in this aspect, more ambitious and sets a target of 66.4%.*

[6] *In accordance with the rules of the "Code of Conduct", this section is prepared using the methodology of national accounts. On the basis of the relationship between investments and savings, this allows a surplus or deficit in foreign relations to be decomposed into individual economic sectors. This differs from the analogical, ordinarily employed methodology of the balance of payment's current account in the categorisation of some transactions and in the fact that it contains additional items (capital transfers, acquisition of unmanufactured, non-financial assets).*

After reaching its peak in Q2 2001, the goods deficit steadily declined. Following the Czech Republic's EU accession in May 2004, this trend sharply accelerated. In April 2005, the trade balance registered a surplus, despite high and ever-increasing mineral fuel prices. Increasing export performance during slow economic growth in Eurozone countries, especially in Germany where a decisive part of exports end up, demonstrates an improvement in the competitiveness of domestic products. New capacities with a large export potential have had a substantial impact, mainly in the automobile industry, information and communication technology and the substitution of imported intermediate products with domestic products.

Table 3.5: Net lending/borrowing

	Year 2004	Year 2005	Year 2006	Year 2007	Year 2008
% of GDP					
Balance of goods	-0,8	1,7	2,4	3,6	4,2
- mineral fuels (SITC 3)	-2,6	-3,6	-4,1	-3,5	-3,0
- other goods	1,8	5,3	6,5	7,2	7,2
Balance of services	0,5	0,5	0,4	0,4	0,5
Balance of goods and services	-0,3	2,1	2,8	4,1	4,7
Balance of primary income	-4,9	-5,6	-5,8	-6,0	-6,1
Balance of transfers	0,1	0,8	0,7	0,8	1,0
Balance of primary income and transfers	-4,8	-4,8	-5,2	-5,2	-5,0
Capital transfers	0,2	0,2	0,4	0,7	1,3
Net acquisition of non-produced assets	-0,1	-0,2	-0,2	-0,2	-0,2
Net lending/borrowing vis-a-vis ROW (B.9)	-5,2	-2,6	-2,2	-0,6	0,8
Net lending/borrowing of the private sector	-2,2	2,2	1,6	2,7	3,5
- households	0,5	0,1	-0,2	-0,5	-0,5
- financial and non-financial institutions	-2,7	2,0	1,8	3,2	4,0
Net lending/borrowing of general government	-3,0	-4,8	-3,8	-3,3	-2,7

1) e.g. payments for licences, patents and trademarks

Source: Czech Statistical Office - annual national accounts, calculations of the Ministry of Finance

The tendency towards further improvements in the balance of services will be driven by a surplus in the balance's non-fuel component, which should reach 7% of GDP in 2007. A stable low-inflation environment and wage developments corresponding to the equilibrium appreciation of the real exchange rate will be key for the competitive capabilities of Czech export.

For the balance of services, we anticipate a stable surplus in the share of GDP with continued improvements in the balance for transport and tourism and a decline in "other services".

The most significant negative component in net lending/borrowing is and will continue to be the worsening balance of primary incomes, which reflects, in particular, the increasing flow of foreign investors' repatriated and reinvested profits.

The balance of current and capital transfers, especially in 2007 and 2008, will be affected positively by the balance of financial flows from the EU as a part of the contributions from the structural funds, the Solidarity Fund and for supporting agriculture and regional development.

As a result, we expect the net lending deficit to gradually decline, so that in 2008 the Czech Republic could register a surplus for the first time in history.

As for the specific sector contributions to net lending/borrowing in the economy, the government's position should improve due to the measures described in the following sections. The position of households should show a deficit due to an increase in housing investment, which will be higher than generated savings. The main improvements could be expected in the sector of financial and non-financial institutions.

3.5 The Growth Implications of Structural Reforms

The programme itself contains the assessed effects of the approved reform measures in accordance with the National Reform Programme or the estimated effects of measures that will most likely be approved (e.g. proposal for the new EU Financial Perspective from 2007 to 2013).

The basic structural reforms, as defined in the "Code of Conduct" (especially pension reform and healthcare reform), are currently in the deliberation and discussion phase, so their content, form and timing are not yet known. Therefore, it is not possible to quantify the macroeconomic impact and include it in the programme.