Inflation Report
April 2006

National Bank of Poland
Monetary Policy Council

Warsaw, April 2006

The Inflation Report presents the Monetary Policy Council's assessment of the current and future macroeconomic developments influencing inflation. The inflation projection presented in Chapter 4 is based on macroeconomic model ECMOD and has been prepared by a team of NBP economists led by Adam B. Czyżewski, Director of Macroeconomic and Structural Analyses Department. The NBP Management Board has approved the projection to be submitted to the Monetary Policy Council. The inflation projection is one of the inputs to the Monetary Policy Council's decision-making process.

This Inflation Report is a translation of the National Bank of Poland's *Raport o inflacji* **in Polish. In case of discrepancies, the original prevails.**

Contents

Summary

Inflation in 2005 Q3 was 1.6% y/y, fell to 1.1% y/y in Q4 and reached 0.7% y/y in 2006 Q1. Inflation has remained low starting from 2005 Q3 due to the fading out of the price effects associated with Poland's accession to the EU in 2004, the monetary policy decisions taken several quarters before, zloty appreciation in 2005, the increasing share of imports from low cost countries and increased competition from the producers from those countries. Those factors have overlapped with short term factors: deeper than expected decrease of fuel price growth, resulting from reduced trade margins, and decreasing food prices. Moreover, in March the GUS (CSO) revised the January CPI in relation with the new weight structure used for its calculation. As a result, the annual growth of consumer prices in January was revised downwards by 0.1 percentage point.

Despite accelarating growth of the Polish economy, core inflation indices remained low in January-March 2006. Low "net" inflation suggested than the underlying inflationary pressure in this period was contained. Contained underlying inflationary pressure was accompanied by inflation expectations staying significantly below the inflation target. At the same time inflation forectasts of market analysts stabilised at 2.0%.

In January-March 2006 the annual growth of PPI slightly increased. Growth of producer prices is recorded in the domestic market, while export producer prices have been falling for more than a year. Falling export producer prices were affected by the zloty appreciation in 2005.

The situation in the Polish financial market in 2006 Q1 was largely influenced by global factors. In the first two months of 2006 these factors were affecting not only the zloty appreciation but also the strengthening of other currencies of Central European countries. In March, the outflow of foreign capital contributed to the weakening of all currencies and a drop in bond prices in the region with the Hungarian forint and the Polish zloty – although on a smaller scale – experiencing the strongest depreciation. The depreciation of the Polish zloty and an increase in Treasury bonds yields in this period were also driven by increased political uncertainty in Poland. At the same time, in 2006 Q1 the nominal effective exchange rate of the zloty was slightly stronger than forecasted in the January *Report*.

In 2005 Q4 the number of working persons in the economy grew by 2.4% y/y (as compared to 2.8% in Q3). The high growth of the number of working persons in the economy in 2005 Q4 was driven mainly by a strong rise in the number of working

persons outside private agriculture (3.5% y/y against 3.7% y/y in 2005 Q3). The strong increase of the number of working persons was accompanied by growing number of the economically active (by 0.8% y/y). In the corporate sector 2006 Q1 saw accelerating rise in employment (to 2.7% y/y in March). Unemployment continued to fall. In March, the unemployment rate registered by the labour offices stood at 17.8%, which constitutes a drop of 1.4 percentage points in annual terms. The data on the labour market indicate that the scale of improvement in the labour market has so far been consistent with expectations of the previous *Report*.

The economic recovery in Poland is accompanied by an increased wage growth. In 2005 Q4 the rise in nominal wages in the economy amounted to 5.1% y/y (against 3.4% in the previous quarter) and was higher than forecasted in the January *Inflation Projection*. A higher wage growth in comparison to the previous quarter was also observed in the enterprise sector, where wages increased by 4.8% y/y (against 2.7% in 2005 Q3). In 2006 Q1 the wage growth in the enterprise sector was close to the previous quarter (4.7% y/y), yet in the following months of that quarter it gradually increased.

In 2005 Q4 labour productivity growth in the economy accelerated. Despite the accelerated labour productivity, even faster and accelerating wage growth in the whole economy led to the increase in unit labour costs. In turn, the labour productivity growth in industry was higher than the wage growth, which resulted in the decrease of unit labour costs in this sector.

According to the GUS data, in 2005 Q4 GDP increased by 4.2% y/y/ in real terms (as compared with a rise of 3.7% y/y in Q3), reaching the highest growth since 2004 Q3. Although the GDP growth in 2005 Q4 was lower than expected by market analysts and the January *Report*, the data on national accounts in 2005 Q4 confirmed that the economy is experiencing a strengthening growth.

In 2005 Q4 domestic demand growth saw a significant rise, mainly as a result of a strong and higher than expected acceleration of gross fixed capital formation (increase by 9.8% y/y as compared with 5.7% in 2005 Q3). The consumption growth, mainly public consumption, showed a pronounced acceleration. The consumption and investment outlays totally increased by 5.0% y/y as compared with a rise of 2.9% y/y in Q3 and 2.1% y/y in the first half of 2005. The build-up in inventories was close to that observed a year before; as a result, the contribution of inventories to GDP growth was insignificant. On the other hand, the decrease of the net exports contribution to GDP growth was significant and largely unexpected with regard to its scale (in the light of the NBP data on the balance of payments and the GUS data on the trade balance), which resulted from pronounced acceleration of imports coupled with a continuing high growth of exports.

According to the GUS estimates, in 2005 Q4 – in line with the expectations presented in the January *Inflation Report* – the growth of private consumption increased to 3.1% y/y from 2.7% y/y in 2005 Q3 in real terms. The rise in the consumption growth in 2005 Q4 was caused by the increased growth of the nominal disposable income and was coupled with the inflation decline. Increased consumption was also driven by a dynamic climb

in consumer loans to households. Given the improving consumer sentiment, including expectations of further improvement in financial standing, significant growth of real wages and employment in the corporate sector, the indexation of old-age and disability pension benefits conducted in March 2006, and an increasing and high growth of retail sales, 2006 Q1 may be expected to bring further acceleration in growth of private consumption.

According to the GUS estimates, 2005 Q4 saw a continued increase in the growth rate of gross fixed capital formation. In this period it rose by 9.8%, in real terms, as compared with 5.7% in Q3 and 3.8% in Q2. This growth was higher than the NBP expectations from the January *Inflation Report*. Investment is crucial for sustaining economic growth in the longer term. In 2006 Q1 the housing construction sector has maintained its strength. The increase in investment should be driven by the high degree of production capacity utilisation and also by the continuously good financial standing of companies. The high propensity to invest is also signalled in the NBP Business Conditions Survey. The investment acceleration is also suggested by the surging interest in the bank loans notwithstanding considerable own funds of companies, which is indicated in this survey.

The domestic investors' propensity to invest and the scale of the inflow of foreign investment will also depend on political developments in Poland and the introduction of reforms contributing to the improvement of law enforcement, simplification of starting business procedures, reduction of the fiscal burden, and thus the improvement of business conditions in Poland. Moreover, further acceleration of investment will depend on the effectiveness of the system for co-financing EU-funded investment projects.

On the basis of the GUS preliminary data for January–March 2006 it may be assessed that in 2006 Q1 both the annual and quarterly GDP growth accelerated. According to the NBP estimates, there was a continuation of the strong growth rate of gross fixed capital formation and the growth rate of consumption demand continued to improve. The contribution of net exports to GDP growth is assessed as close to zero. Current estimate of 2006 Q1 economic growth is slightly higher than expected in the January *Inflation Report*.

The scenario of the fiscal developments presented in the *Convergence Programme Update* of January 2006 implies a gradual narrowing of the public sector deficit in relation to GDP in the years 2007-2008. Yet, in the light of the legislative changes concerning public finance, announced by the parliamentary coalition, deviations from the path of the general government sector deficit anticipated in this scenario seem probable. On the one hand, the adoption of the new Public Finance Act assuming, among other things, the public finance consolidation, may increase the transparency of public finance and improve its management, however, the scale of savings may be smaller than expected by the Government (0.8-1.0% of GDP within 2 years). On the other hand, the majority of the announced proposals of changes in the fiscal policy may, if carried out, further widen the public finance deficit. Moreover, the package of tax changes announced by the Government in April 2006 provides for considerable reduction of revenues of the public finance sector. Altogether, the proposed changes increase the risk of the general government sector deficit in the years 2007-2008 exceeding the level presented in the

January *Convergence Programme Update*. The fiscal situation in the next years will be largely dependent on the rate and structure of economic growth which determines the revenues of the public finance sector. Should economic growth be lower than accounted for in the scenario, the process of narrowing of the general government sector deficit could be hindered or the deficit could even start widening.

It should be emphasised that the reduction of the fiscal burden and the adoption of measures curbing public spending are necessary to ensure high long-term economic growth in Poland. The currently observed rapid economic growth provides favourable conditions for lowering the structural deficit of the general government sector.

In the analysed period the most important problems discussed by the Council were the prospects of the sustainability of the labour market recovery, the impact of globalisation processes and commodity price developments on the outlook of economic growth and inflation, the prospects of improving the public finance condition and the short and medium term impact of Poland's accession to the EU on the zloty exchange rate and inflation.

In the reviewed period the Council paid particular attention to the question of changes in the labour market and their impact on inflation. To assess this impact it is essential to answer two questions: (1) Will the observed increase in the number of working persons prove sustainable? and (2) What is and will be the role of demand and supply factors in the rise in the number of working persons? In this context, the discussed issues involved labour market liberalisation, international economic migration and changes in the economic activity ratio. An additional question pertains to the strength of the future anti-inflationary impact of global factors in relation to the past.

The January inflation projection (prepared with the cut-off date of 2 January 2006) indicated that the return of inflation to the target of 2.5% would occur later than it had been expected by the projection from August 2005. At the same time the January projection indicated that in the projection horizon, i.e. till 2008, the output gap will remain negative. In 2005 Q4 and 2006 Q1 both the current inflation rate and the net core inflation decreased steadily. This lowering in inflation indices justified the expectations for inflation in 2006 Q1 to run lower than accounted for in the January inflation projection. The opinion which prevailed at the February meeting of the MPC was that the outlook for inflation had changed and so the NBP's interest rates were cut by 0.25 percentage point, i.e. the reference rate to 4.0%, the lombard rate to 5.50%, the deposit rate to 2.50% and the rediscount rate to 4.25%. In March and April the MPC kept the interest rates unchanged.

In line with the NBP inflation projection presented in the April Inflation Report, the annual GDP growth will be with 50% probability within the range of 3.9-5.0% in 2006 (as compared with 3.8-5.1% in the January projection); 3.4-5.8% in 2007 (as compared with 3.4-5.2%) and 3.5-6.2% in 2008 (as compared with 3.6-5.5%).

The April inflation projection indicates that the growth rate of consumer prices is likely to be slightly lower in 2006, but in 2008 slightly higher than that expected in the January *Report*. Under constant interest rates, with 50% probability inflation will be within the

range of 0.5-2.0% in 2006 Q4 (as compared with 0.5-2.3% in the January projection), 1.3-3.4% in 2007 Q4 (as compared with 1.1-3.6%) and 1.2-3.9% in 2008 Q4 (as compared with 0.8-3.9%).

It should be emphasized that the inflation projection presented in the *Report* does not account for all sources of uncertainty. This primarily applies to the scale of the future impact of globalisation on inflation, the growth of workforce, the direction of economic policy in the coming years and the exchange rate developments. Besides, the projection was prepared on the basis of data available until 24 March 2006 and thus does not account for crude oil and fuel prices, which are considerably higher than those assumed in the projection, higher estimates of GDP and wages in the economy in 2006 Q1 and slightly lower than forecasted CPI in 2006 Q1. However, "net" inflation in 2006 Q1 was consistent with the April projection.

The Council maintains its assessment that with large probability inflation will in 2006 Q2 and maybe Q3 remain below the inflation target mainly due to short-term factors. If the developments in the economy were consistent with the April NBP inflation projection, then the current level of the reference rate of the central bank would support a gradual return of inflation to the target over the projection horizon and would also be conducive to keeping economic growth at a pace which is consistent with the potential output growth, determined by the structural features of the Polish economy. The fact that inflation and core inflation has stayed below the previous forecasts for a relatively long period may be an indication that the impact of the factors which may slow down the returning of inflation to the target in relation to that accounted for in the projection is stronger than previously assumed. Factors which could potentially accelerate the return of inflation back to the target include a higher wage growth than assumed in the projection, provided it would not be accompanied by sufficiently fast increase of productivity, further oil price hikes or a deterioration of the public finance situation in relation to that envisaged in the Convergence Programme.

The Council maintains its belief that the most favourable scenario for Poland would be to implement an economic strategy focused on creating conditions which would ensure the introduction of the euro at the earliest possible date, which would be conducive to a higher long-term economic growth.

Inflationary Processes

1.1 Inflation indicators

After the fading out of price effects of Poland's accession to the European Union in 2005 Q3 the annual (CPI) inflation decreased and settled at a level markedly below the inflation target. At the same time the annual inflation in 2005 Q3 ran above the level accounted for in the August inflation projection. In Q4 inflation fell down again and proved consistent with that projection. In January and February 2006[1] inflation reached 0.6% y/y and 0.7% y/y, respectively, while in March it fell to 0.4%[2] (Figure 1.1, left-hand panel). The low annual growth of the prices of consumer goods and services recorded in these months was the result of a drop in food prices and a decline in fuel price growth rate, i.e. factors of short-term nature. Moreover, in March the GUS (CSO) re-estimated the January CPI level in line with a new weight structure used in its calculation. As a result, the annual rate of growth of consumer prices in January was adjusted downwards by 0.1 percentage point (down from 0.7%). "Net" inflation[3] in January and February 2006 settled at the level of 0.8%, and in March decreased to 0.7%. In the whole of 2006 Q1 inflation was markedly lower than anticipated in the January inflation projection. Starting from the middle of 2005 both the annual inflation measured with the CPI and "net" inflation have remained considerably below the inflation target. Similarly low inflation was observed in Poland at the turn of 2002 and 2003. However, the contributions of particular groups of consumer goods and services to the growth of the CPI and "net" inflation in 2002-2003 were different than it is the case currently (see Box).

In the analysed period the rate of decline in the prices of food and non-alcoholic beverages[4] fell from -1.3% in December 2005 to -0.7% in March 2006. (Figure 1.1, left-hand

[1]The time horizon of the analysis presented in the *Report* is conditioned by the availability of macroeconomic data. In turn, periodisation of the analysis (breakdown into sub-periods) is conditioned by the paths of particular variables.

[2]The following abbreviations will used throughout the *Report*:
y/y – analysed period compared with the corresponding period last year
q/q – quarter compared to the previous quarter
m/m – month compared to the previous month.

[3]Inflation measure which represents the CPI net of food and fuel prices.

[4]The weight of particular groups of goods and services in the CPI in 2006:

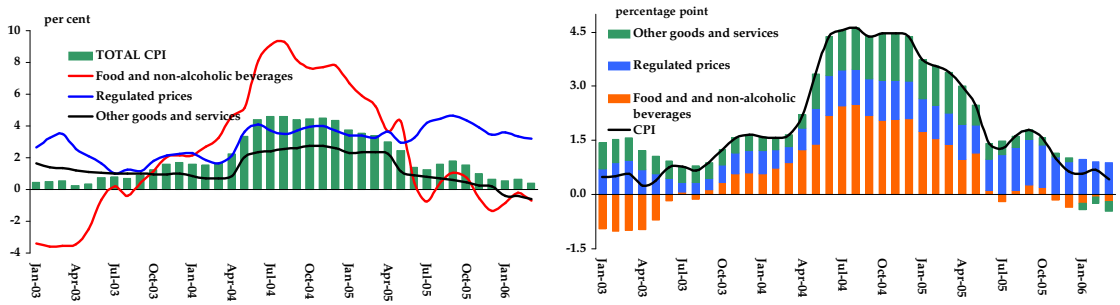

Figure 1.1: Consumer price index CPI. Left panel: CPI and main categories of prices. Right panel: CPI breakdown.
Source: GUS data, NBP calculations.

panel). The drop in food prices in 2006 Q1 was deeper than accounted for in the January projection. The low monthly growth rate in food prices in January-March 2006 was primarily related to the fall in meat, and particularly poultry, prices. The slump in poultry prices was caused by customers' fears connected with the news that cases of bird flu were discovered in Europe. Additionally, the falling tendency of meat prices was further reinforced by increased pork output and Russia's upholding of limitations on Polish food imports to this country.

The growth rate of regulated prices, after rising from 3.4% in December 2005 to 3.6% in January 2006, diminished to 3.2% in March 2006. (Figure 1.1, left-hand panel). This relatively high growth rate of regulated prices was upheld in the analysed period due to a rise in prices of natural gas and electricity connected with changes in tariffs. Additionally, in January 2006 there occurred price rises typical of this period, namely an increase in the radio and television subscription fees and prices of postal services. The inflation in the group of regulated prices in the analysed period was pulled down by the reduction in the engine fuel price growth rate in the domestic market, which resulted from the appreciation of the zloty against the US dollar and the ongoing decline in domestic trade margins. The growth rate of fuel prices in 2006 Q1 was lower than accounted for in the January projection.

The growth rate of prices of other consumer goods and services[5] fell from 0.2% in December 2005 to -0.6% in March 2006 (Figure 1.1, left-hand panel). In the analysed period an important influence on the behaviour of the prices of other consumer goods and services was exerted by the yearly change in the weight system of the CPI basket. An increase in the weight of internet services (with a negative growth rate of their prices) and a drop in the weight of services connected with flat or house maintenance

food and non-alcoholic beverages – 27.2%
regulated prices (total) – 27.5%
other goods and services (total) – 45.3%.

[5]The group of other consumer goods and services includes goods and services, which prices are affected mainly by market mechanisms (excluding food), which means that it does not include the group of regulated prices.

(with a positive growth rate of these prices) resulted in an abrupt slump in the index of other consumer goods and services in January 2006 in relation to December 2005. In particular, the growth rate of the prices of services slid from 2.2% in December 2005 to 1.4% in January 2006, with the rise in the weight of internet services being responsible for 0.5 percentage point of this slide. Further decline in the growth rate of the prices of services (to 0.8% y/y) was recorded in March 2005. It was related to a deepening in the observed drop in prices of internet services[6]. In addition, the fall in the price growth rate in the group of other consumer goods and services was also driven by a decline in non-food product prices (which had been intensifying since May 2005). In the analysed months the prices of these products were decreasing by 1.6% y/y[7]. The most pronounced fall in prices was observed in the following categories: clothes, footwear, telecommunications equipment, audiovisual, photographic and computer equipment and household appliances.

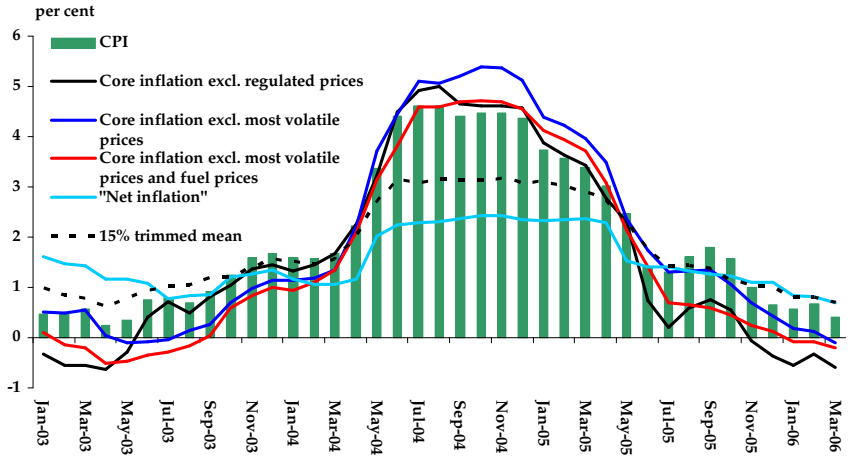

Figure 1.2: CPI and core inflation measures (y/y changes, per cent)
Source: GUS Data, NBP calculations.

In the period January-March 2006 core inflation measures remained at a low level (Figure 1.2, Table 1.1). "Net" inflation ran slightly higher than inflation measured with the CPI. This means that the total price movements of food and fuels in January-March 2006 limited the growth of the consumer price index. The growth rate of core inflation net of regulated prices from November 2005 has assumed negative values, which is largely connected with the drop in the prices of other consumer goods and services.

[6]In March the prices of internet services decreased by 38.8% y/y as compared with 27.3% y/y in January and February 2006. The lowering of these prices' growth rate is responsible for 0.4 percentage point of the drop in services price growth rate in March 2006.

[7]Price drops occurred in most categories of non-food products – in January-March 2006 the goods whose annual price growth rate had fallen accounted for 60% of the group of non-food products.

	y/y change in per cent											
	2005									2006		
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CPI	**3.0**	**2.5**	**1.4**	**1.3**	**1.6**	**1.8**	**1.6**	**1.0**	**0.7**	**0.6**	**0.7**	**0.4**
Core inflation measures excluding:												
Regulated prices	2.8	2.3	0.7	0.2	0.6	0.8	0.6	-0.1	-0.4	-0.6	-0.3	-0.6
Most volatile prices	3.5	2.4	1.7	1.3	1.3	1.4	1.1	0.7	0.4	0.2	0.1	-0.1
Most volatile prices and fuel prices	3.1	2.2	1.4	0.7	0.7	0.6	0.5	0.2	0.1	-0.1	-0.1	-0.2
Food and fuel prices ("net" infaltion)	2.3	1.5	1.4	1.4	1.3	1.3	1.2	1.1	1.1	0.8	0.8	0.7
15% trimmed mean	2.7	2.3	1.8	1.4	1.4	1.4	1.1	1.0	1.0	0.8	0.8	0.7
	m/m change in per cent											
	2005									2006		
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CPI	**0.4**	**0.3**	**-0.2**	**-0.2**	**-0.1**	**0.4**	**0.4**	**-0.2**	**-0.2**	**0.2**	**0.0**	**-0.1**
Core inflation measures excluding:												
Regulated prices	0.2	0.3	-0.4	-0.6	-0.3	0.2	0.4	-0.2	0.0	0.0	0.0	-0.1
Most volatile prices	0.2	-0.1	-0.7	0.3	0.2	0.3	0.4	0.1	0.1	-0.3	-0.2	-0.1
Most volatile prices and fuel prices	0.0	-0.2	-0.8	0.2	0.1	0.1	0.5	0.2	0.4	-0.1	-0.1	-0.1
Food and fuel prices ("net" infaltion)	0.1	0.1	0.1	0.2	0.0	0.1	0.2	0.0	0.0	0.3	-0.1	0.0
15% trimmed mean	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0
Core inflation measures – seasonally adjusted (TRAMO/SEATS):												
CPI	0.1	0.1	-0.1	0.3	0.4	0.1	0.1	-0.2	-0.1	-0.1	0.0	-0.1
"Net" inflation	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2

Table 1.1: CPI and core inflation measures in 2004 and 2005
Source: GUS data, NBP calculations.

Comparison of periods of low inflation in 2002-2003 and 2005-2006

Ever since June 2005 the annual price growth rate in Poland has remained markedly below the inflation target. Similarly low inflation was observed in Poland in the period between mid-2002 and mid-2003.[1] However, it is worth noticing that in 2002-2003 the contributions of particular groups of consumer goods and services to the growth of the CPI were different as compared with the current situation. The main factor adding to the low inflation in this period was the decline in food prices, while the prices of other consumer goods and services were growing and had a positive contribution to the growth of the CPI. Since November 2005 the food price growth rate has had a negative contribution to the growth of this index once again, though the drop in food prices in this period has been lower than in 2002-2003. What is more, over the past four years the weight of food and non-alcoholic beverages in the CPI basket has decreased by almost 2.6 percentage points, which additionally lessened the impact of this group on inflation in 2005 and 2006. The prices of other consumer goods and services are main determinant of inflation (due to their greatest weight in the CPI basket). Since mid-2005 a steady decline has been observed in this group's growth rate and since January its has displayed negative values. In March 2006 the drop in prices of other consumer goods and services was most strongly supported by the drop in the prices of clothes (of 5.8%), footwear (of 9.3%), telecommunications equipment (of 11.7%), audiovisual, photographic and computer equipment (of 8.7%), home appliances (of 1.9%) and internet services (of 38.8%). As a result, since January 2006 also the contribution of other goods and services to the CPI has been negative (Figure 1.1, right-hand panel).

"Net" inflation path also points at similar tendencies. Both in 2003 and at the turn of 2005 and 2006 "net" inflation was running low.[2] Since the beginning of 2006 this measure of core inflation has remained at the level slightly higher than inflation measured with the CPI. This means that – similarly to the years 2002-2003 – the total prices movements of food and fuels in this period have been containing the growth of the consumer price index. By contrast to the current situation, in 2003 the prices of other consumer goods and services were conducive to higher inflation measured with the CPI and higher "net" inflation. Since May 2005, however, "net" inflation has outpaced the growth rate of the prices of other consumer goods and services. This means that the currently positive contribution to the path of "net" inflation is only made by the growth rate of regulated prices net of fuel prices, while in 2003 this inflation measure was also accelerated by movements in the prices of other goods and services (Figure 1.1, right-hand panel)

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[1] In July 2002 - October 2003 inflation stayed between 0.3% and 1.3%.

[2] Net inflation in 2003 ranged between 0.8% and 1.6%. Inflation measured with the CPI started to assume low values as early as 2002, while "net" inflation remained above 2% till December 2002.

1.2 Inflation expectations

Inflation expectations of individuals

Inflation expectations of households are strongly adaptive in nature. This means that changes in inflation expectations closely follow the changes in the current rate of inflation. As a result, inflation expectations in the past displayed high level of volatility.

In the first months of 2006 further drop was observed in the level of inflation expectations of individuals. In February, March and April 2006 they settled at 0.6%, i.e. the lowest level since July 2003, and markedly below the NBP inflation target of 2.5% (Figure 1.3). In the period since the end of 2005 until end of March 2006 the drop in inflation expectations of individuals, which are a function of the structure of responses to the survey question and the current rate of inflation, have resulted both from the reduced current inflation rate, which serves as the point of reference for respondents in formulating their estimates of future inflation (in approx. 75-80%), and from the improved structure of responses to the survey question (in approx. 20-25%) (Figure 1.4).

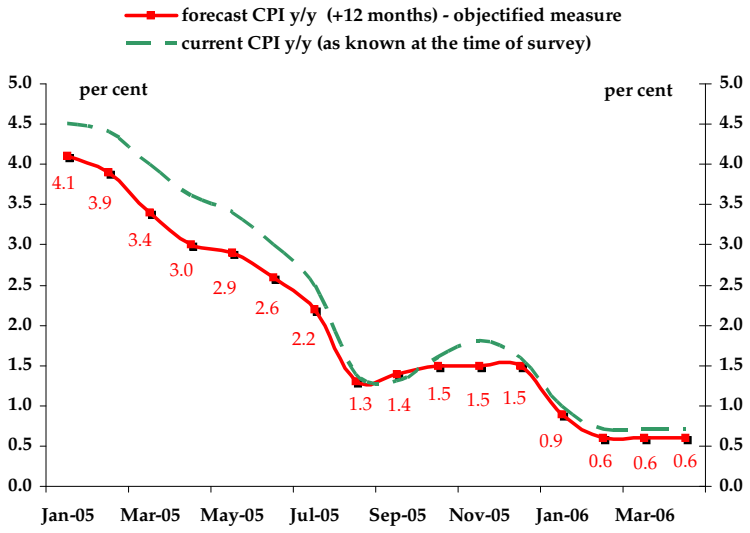


Figure 1.3: Inflation expectations of individuals
Source: GUS data, NBP estimates on the basis of Ipsos data.

Inflation forecasts of bank analysts

In the period January-April 2006, the annual inflation in 11 months as forecasted by bank analysts remained at the level of 2.0%, while the inflation forecasts for December 2006 were revised downwards from 2% in January to 1.5% in April 2006 (Figure 1.5, left-hand panel). In both cases the analysts' forecasts were lower than the NBP's inflation

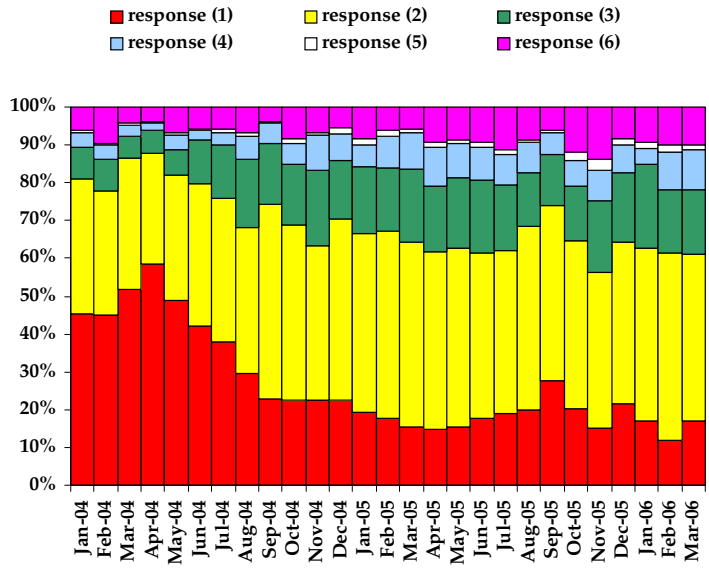


Figure 1.4: Structure of responses to the question asked by Ipsos.
Source: NBP estimates based on Ipsos data.
Ipsos survey question: "Considering the present situation, do you think that prices during the next 12 months: (1) will grow faster than they do now; (2) will rise at the same rate; (3) will grow at a slower rate; (4) will stay the same; (5) will decrease; (6) it is hard to say?"

target. At the same time, there was a slight reduction in uncertainty concerning the future course of inflationary processes as reflected by the shrinking gap between the maximum and minimum levels of the forecasted 11 months' inflation (Figure 1.5, right-hand panel).

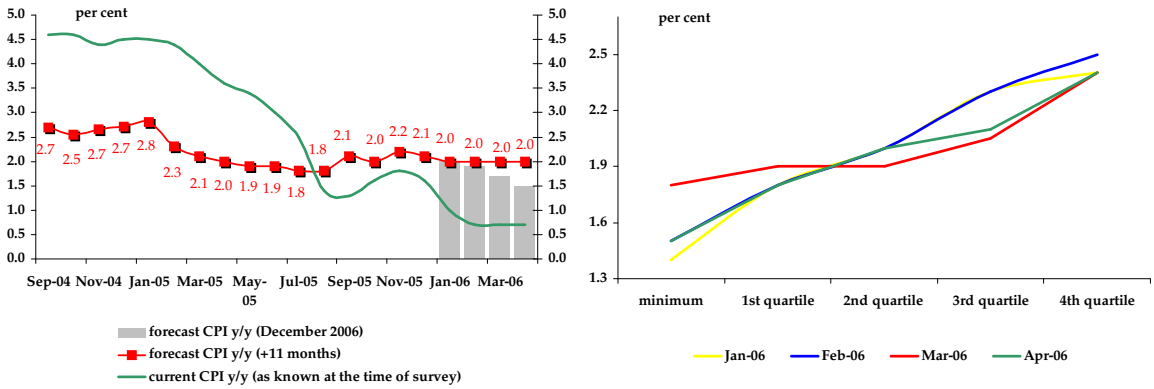


Figure 1.5: Inflation forecasts of bank analysts. Left panel: Inflation forecasted in 11 months and inflation forecast for December 2006. Right panel: Distribution of bank analysts' inflation forecasts of the annual inflation rate in 11 months.
Source: GUS data, Reuters data, NBP calculations.

1.3 Inflation and the Maastricht criterion

In a country intending to adopt the euro, the average annual inflation in the reference period, as measured by the harmonised index of consumer prices (HICP)[8], cannot exceed the reference value determined as the average inflation in the three EU countries with the lowest average annual (and not calculated in relation to the corresponding period of the previous year) price growth rate plus 1.5 percentage point (see Box). As a result of the inflation growth in Poland following its accession to the EU, Poland failed to comply with the Maastricht inflation criterion in the period from August 2004 to October 2005 (Figure 1.6). Starting from May 2005, the average annual HICP level began to slide down and ever since November 2005 Poland has again been complying with the inflation criterion.

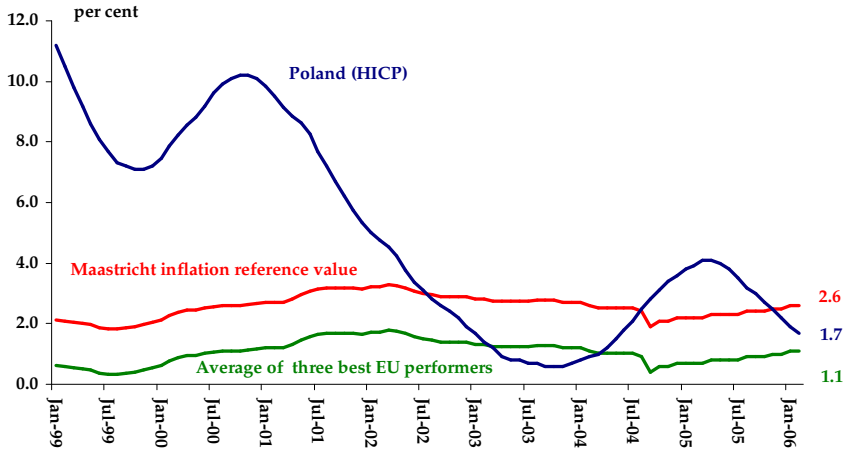


Figure 1.6: Inflation in Poland (HICP 12-month moving average) and the Maastricht criterion (y/y changes, per cent)
Source: Eurostat data, NBP calculations.
In February 2006 the reference value for inflation was calculated on the basis of the average inflation in Holland, Finland and Sweden, where the average annual growth of prices stood at 1,5%, 1% and 0,9% respectively.

[8]The key difference between the CPI and HICP is that the harmonised index additionally includes expenses incurred by foreigners buying goods and services in Poland, estimated expenses incurred by individuals staying at the so-called institutional households (for instance hospitals, prisons, rest homes) as well as expenditure on lotteries. Despite the fact that HICP and CPI baskets have different weight structure, in practice the differences between those two indices are insignificant.

Maastricht reference value

The assessment whether a given country may be included into the group of countries with most stable prices or not is in each individual case performed by the European Commission and the European Central Bank (ECB). According to the position taken by the Commission, presented in the *2004 Convergence Report*, countries which have recorded deflation are excluded from the reference group. It remains unknown, however, whether countries with very low inflation would be included by the Commission into the group with most stable prices. In turn, the ECB does not condition the exclusion of a given country from the reference group on whether it experienced deflation, but rather on whether its average annual inflation differs significantly from the price growth rate recorded in other countries. As a result, it is not clear, for example, whether Finland, where the average annual price growth rate in February and March 2005 stood at the level of 0% and 0.1%, respectively, would be included by the European Commission and the ECB into the group of reference countries (Finland was included into the group of reference countries with inflation at the level of 0.4% in August 2004). Figure 1.6 presents estimates of the reference value on the conservative assumption that countries with a zero or very low average annual inflation rate could be included into the group of countries with the most stable prices. For more information about the Maastricht criteria see: *Report on the Costs and Benefits of Poland's Adoption of the Euro*, NBP, 2004.

Determinants of inflation

Economic growth has been accelerating since 2005 Q2 amid a strong growth in the world economy and a moderate growth in the main trading partners of Poland. 2006 Q1 saw a continuation in these developments in Poland's environment. In line with the expectations, domestic demand has been playing an increasingly important role in GDP growth. The growth of consumer demand is accelerating, while the growth rate of investments is steadily stepping up. The rise in investments will be increasing the economic potential, which should contribute to upholding economic growth at a relatively high level. Exports continue to rise intensively, however, due to the acceleration of imports accompanying the domestic demand revival, net exports cease to be the driving force behind GDP growth. The rise in the growth rate of output is accompanied by a gradual increase in the number of working persons and a simultaneous reduction of unemployment. Despite the accelerated labour productivity, the even faster and accelerating wage growth in the whole economy leads to the increase in unit labour costs. In turn, the labour productivity growth in industry is higher than the wage growth, which results in the decrease of unit labour costs in this sector. This acceleration of economic growth comes in the situation of low inflation and low current account deficit. The fact that inflation has remained at a low level starting from 2005 Q3 was the result of the fading out of the price effects associated with Poland's accession to the EU in 2004, the monetary policy decisions several quarters before, zloty strengthening in 2005, the increasing share of imports from countries with low production costs and increased competition from the producers from those countries. Since 2005 Q4 those factors have overlapped with short term effects, which led to an increase in inflation from 1.6% (y/y) in 2005 Q3 down to 1.1% (y/y) in 2005 Q4 and 0.7% (y/y) in 2006 Q1.

2.1 Demand

According to the GUS data, in 2005 Q4 GDP increased by 4.2% y/y/ in real terms (as compared with a rise of 3.7% y/y in Q3), reaching the highest growth rate since 2004 Q3 (Figure 2.7). Although the GDP growth in 2005 Q4 was lower than expected by market analysts and the January *Report*, the data on national accounts in 2005 Q4 confirmed that the economy is experiencing a strengthening recovery. In quarter-to-quarter terms (seasonally adjusted) the growth rate was close to 1%, i.e. slightly lower

than that recorded in 2005 Q2 and Q3 (Table 2.2)[9]. Domestic demand growth saw an important rise, mainly as a result of a strong and higher than expected acceleration of gross fixed capital formation (increase by 9.8% y/y as compared with 5.7% in 2005 Q3). The consumption growth rate, mainly public consumption, showed a pronounced acceleration. Total consumption and investment outlays increased by 5.0% y/y as compared with a rise of 2.9% y/y in Q3 and 2.1% y/y in the first half of 2005. The build-up in inventories was close to that observed a year before; as a result, the contribution of inventories to GDP growth was insignificant. On the other hand, the decrease of the net exports contribution to GDP growth was significant and largely unexpected with regard to its scale (in the light of the NBP data on the balance of payments and the GUS data on the trade balance), which resulted from pronounced acceleration of imports coupled with a continuing high growth of exports.

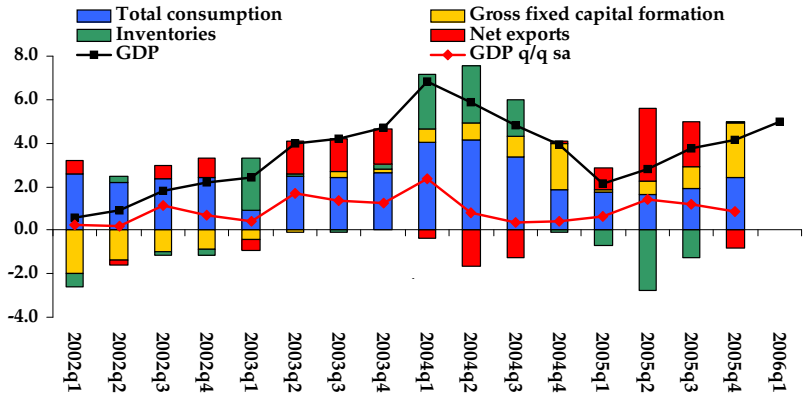


Figure 2.7: Contribution of aggregate demand components to GDP growth
Source: GUS data, 2006 Q1 – NBP estimates.

Seasonally adjusted (per cent)	03q3	03q4	04q1	04q2	04q3	04q4	05q1	05q2	05q3	05q4
GDP	1.4	1.2	2.4	0.8	0.3	0.4	0.6	1.4	1.2	0.9
Domestic demand	1.4	1.4	2.3	1.3	0.2	-0.2	0.3	0.5	1.3	1.7
Total consumption	1.0	1.3	1.1	1.0	0.4	0.1	0.7	0.7	0.8	0.9
Private consumption	0.8	1.4	1.2	1.0	0.2	0.1	0.6	0.8	1.0	0.7
Gross capital formation	3.9	3.4	9.4	2.7	-1.5	-2.0	-0.2	-0.9	3.0	3.0
Gross fixed capital formation	1.3	0.0	3.9	0.5	1.2	1.6	0.5	2.5	2.1	2.9

Table 2.2: GDP and aggregate demand components growth rates (q/q, per cent, seasonally adjusted)
Source: NBP calculations on the basis of GUS data.

On the basis of the GUS preliminary data for January–March 2006 it may be assessed that in 2006 Q1 both the annual and quarterly GDP growth accelerated. According to

[9]Data accounted for in the *Report* are seasonally adjusted national accounts data expressed in average annual prices of the previous year.

the NBP estimates, there was a continuation of the strong growth rate of gross fixed capital formation and the growth rate of consumption demand continued to improve. The contribution of net exports to GDP growth is assessed as close to zero. Current estimate of 2006 Q1 economic growth is slightly higher than expected in the January *Inflation Report*.

2.1.1 Consumption demand

According to the GUS estimates, in 2005 Q4 – in line with the expectations presented in the January *Inflation Report* – the growth rate of individual consumption increased to 3.1% y/y from 2.7% y/y in 2005 Q3 in real terms. This suggests a continued acceleration in the consumption growth rate, started in mid-2005. The rise in the consumption growth rate in 2005 Q4 was caused by the increased growth rate of the nominal disposable income and was coupled with the inflation decline. Increased consumption was also driven by a dynamic climb in consumer loans to households (see Chapter 2.5.3. *Credit and money*).

According to the NBP estimates, as a result of a continued employment growth coupled with an increasing growth rate of average wages, 2005 Q4 brought a further stepping up in the annual growth rate of household income from paid employment as compared with the previous quarter. Also slightly stronger than in the preceding quarter was the growth in the gross operational surplus (owners' private income from conducted business activity). Moreover, the NBP estimates indicate a continued considerable increase in income from property (including income from investment in financial assets and income from private property). According to the NBP estimates, in 2005 Q4 the growth rate of disposable income of households outstripped the growth rate of individual consumption.

At the same time, according to the GUS estimates, in 2005 Q4 the annual growth rate of public consumption was the highest in the whole of 2005 and amounted to 3.7% (as compared with a rise of 1.1% in Q3, 2.8% in Q2 and 3.2% in Q1).

The GUS business tendency surveys indicate that 2006 Q1 saw a progressive improvement in households' assessment of both their current financial standing and the one expected in the coming 12 months. In March 2006 consumer sentiment deteriorated as compared with January and February 2006 which was mainly the result of the worsening assessment of the economic situation in Poland. This seems surprising given the very favourable data on wages and employment in the enterprise sector in March. In the whole of 2006 Q4 the assessments of the financial standing were better than in the preceding quarter and in the corresponding period of the previous year. The assessments of the current period as the suitable one to make 'major' purchases have been improving while the assessments of the possibilities to make 'major' purchases during the coming 12 months have remained unchanged. Households' assessments of their intention to purchase or build a house or a flat have not changed, yet, a bigger number of households declared their intention to incur outlays to improve their house

standard in the future. At the same time, households declare more often than in the previous quarter the possibility to make savings during the coming year.

Data from the enterprise sector for January-March 2006 indicate a significant upward trend in real wages and a considerable growth in employment, which has been conducive to the accelerated growth rate of household income from paid employment (the real wage fund increased in 2006 Q1 by 6.8% y/y marking the highest growth since 1998 Q1). The increase in household disposable income in 2006 Q1 was also driven by the indexation of old-age and disability pension benefits in March 2006. Given the consumer sentiment, including expectations of further improvement in financial standing and a growing and high rate of retail sales, 2006 Q1 may be expected to bring further acceleration in the growth rate of individual consumption.

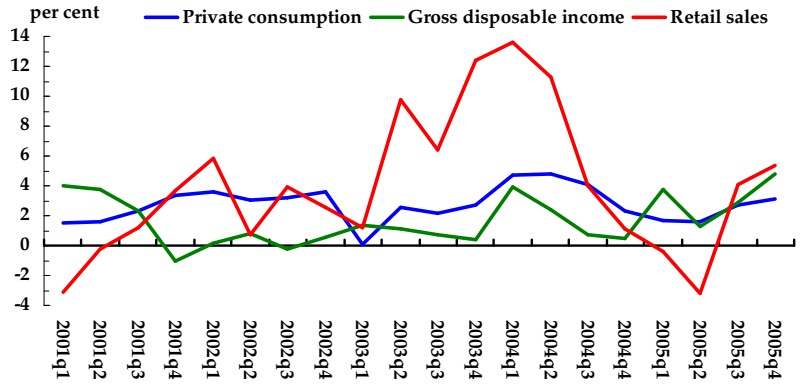


Figure 2.8: Growth of private consumption, gross disposable income and retail sales (y/y, per cent, constant prices)
Source: GUS data, gross disposable income - NBP estimates.

2.1.2 Government demand

In 2006 Q1 the general government deficit amounted to PLN 9.0 billion and was lower than in Q1 of the preceding years (PLN 12.7 billion in 2005 and PLN 11.8 billion in 2004) which was largely driven by high central budget revenues.

In 2006 Q1 central budget revenues were by 14.2% higher than a year before. This increase was mainly the effect of high income tax revenues largely due to a considerable increase of taxation bases (resulting from the continuing improvement in the labour market) and higher than a year before revenues from indirect taxes[10] partly due to one-off factors.

[10]High revenues from indirect taxes were the effect of, among other things, the extraordinary income from the excise tax received by the state budget as a result of the windup of a bonded warehouse by a large foreign entity and higher fuel consumption as a result of the severe winter. Moreover, January 2006 saw a 16% increase of the excise tax on tobacco products.

In 2006 Q1 central budget expenditure edged up by 3.9% y/y. The expenditure increase resulted mainly from higher than a year before central budget subsidies paid to the Social Security Fund and Pension Fund and higher benefits paid to natural persons. An increase was recorded also in current expenditure (mainly wage-related expenditure), as compared with the corresponding period of the previous year, which was driven by the increases of wages paid to public sector employees in 2006 Q1.

2006 Q1 brought an increase in spending on the Social Security Fund and Pension Fund which resulted from the indexation of social benefits, mainly old-age pensions and work disability pensions[11]. It may be assessed that other government sector entities did not record any deficit in 2006 Q1 due to a high income growth rate and a moderate increase in expenditure. On the other hand, local government entities may have recorded a surplus which might be related – like in the previous years – to the low level of expenditure (mainly investment expenditure).

The cash deficit of the whole general government sector in relation to GDP assumed for 2006[12] is by 0.8 p.p. higher than that recorded in 2005 (despite a higher GDP growth rate than that recorded in 2005) and amounts to 3.7% of GDP. The higher deficit/GDP ratio is partly related to the 2006 indexation of social benefits carried out as scheduled. Moreover, the higher deficit/GDP ratio is also driven by the introduction of new expenditure items in the *Budget Bill* by the Government and the Parliament (i.e. one-off birth allowances, family allowances for farmers, longer maternity leaves).

2.1.3 Investment demand

According to the GUS estimates, 2005 Q4 saw a continued increase in the growth rate of gross fixed capital formation. In this period it rose by 9.8%, in real terms, as compared with 5.7% in Q3 and 3.8% in Q2. This growth was consistent with the NBP expectations from the January *Inflation Report*.

In the non-financial enterprises sector (enterprises employing more than 49 people) the annual growth rate in gross fixed capital formation in 2005 was 8.7% y/y in real terms, as compared to 7.4% in the first three quarters of 2005. This indicates that in 2005 Q4, similarly as in Q3, the growth rate of corporate investment exceeded 10% y/y. In Q4 the highest growth rate of investment outlays was recorded in machinery and equipment (16% y/y), slightly lower in means of transport (11% y/y), while the growth rate of the outlays on buildings and structures reported a decrease (down to 5% y/y). In turn, the nominal calculated value of commenced investments rose in 2005 by 13.1% y/y, stepping up significantly towards the end of the year (in the first three quarters of 2005 this growth amounted to 3.9% y/y).

[11] An indexation of old-age pensions and work disability pensions was carried out in 2006 Q1 (for the first time based on the new rules) since in the years 2004-2005 the annual CPI growth rate was on the whole higher than the 5% growth rate assumed in the Act. The indexation ratio for 2006 was fixed at the level of 6.2%.

[12] Assumed in the Justification to the *2006 Budget Bill*.

In line with the NBP assessments presented in the January *Inflation Report*, 2005 Q4 brought a significant rise in investment activity of the general government sector. According to the NBP's preliminary estimates, in 2005 Q4 the investment outlays of local governments and the central budget grew by 24% y/y in nominal terms (as compared with a drop of 0.4% y/y in 2005 Q3), which was mainly driven by a considerable increase in expenditure of local government entities.

The housing construction sector has maintained its strength. In 2006 Q1 despite the exceptionally long winter, the number of completed dwellings was 1.4% higher than a year before. The number of permits issued for the construction of dwellings increased (in January-February 2006 – by 10.6% y/y). Warsaw- and Cracow-based real estate developers and agents surveyed by the NBP, report a continued rise in flat prices.

In 2005 Q4 the growth rate of imports of investment goods stepped up significantly reaching 28% y/y (compared with 17% y/y in Q3). In the whole of 2005 the growth rate of imports of investment goods[13] was 2.4 percentage points higher than in 2004 and amounted to 14.9% y/y[14].

NBP economic climate surveys[15] indicate a continuing strong interest in investment activity among enterprises in 2006 Q2. The investment activity index weighed by the employment level points to a continuing strong rising trend. Particularly high interest in investments is observed in the largest companies, both in terms of commencement of new investment projects and continuation of those already undertaken.

The increase in investment should be driven by the high degree of production capacity utilisation and also by the continuously good financial standing of companies. The investment acceleration is also heralded by surging interest in bank loans notwithstanding considerable own funds of companies, which is indicated both by the banking sector data (in February 2006 corporate lending increased by 5.3% y/y as compared to 1.1% y/y a year before) and the NBP Business Conditions Survey[16]. Another factor that may give enterprises additional incentives to invest over the next few quarters will be the inflow of EU structural funds, though its significance will be dependent on the capacity to absorb these resources.

[13]Excluding means of transport, expressed in EUR. An important category of means of transport falling under imported investment goods are ships repaired in Polish shipyards. After the repairs they are usually exported. Thus, the exclusion of means of transport from investment imports is aimed at improving the assessment of the volume of imports which can actually be treated as investment imports in economic terms and so as contributing to increasing Poland's capital assets.

[14]The remaining groups being "intermediate goods imports", "consumer goods imports" and "imports of other goods".

[15]See *Preliminary information concerning the condition of the corporate sector and the economic climate in 2006 Q2*, NBP.

[16]The NBP Business Conditions Survey indicate a growth of interest in corporate lending in the near future. The balance of corporate debt forecast (the percentage of growth forecasts minus the percentage of decline forecasts) increased in 2006 Q1 following a considerable decline recorded in the surveys carried out in 2005 Q3 and Q4. Likewise, the responses to the questions regarding the sources of new investment financing indicate a possible increase in corporate bank debt: enterprises report a diminishing role of own funds in investment financing and a growing importance of bank loans – see chapter 2.5.3 *Credit and money*.

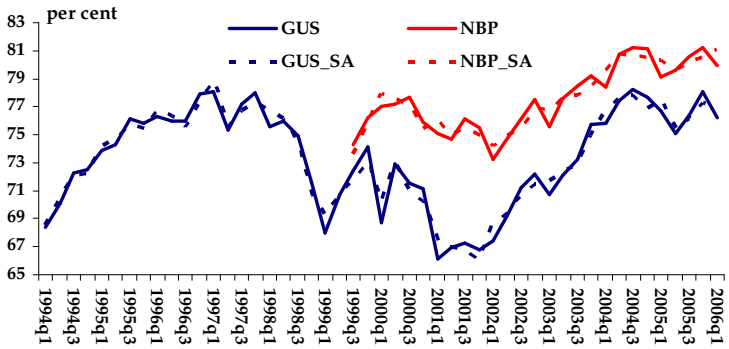


Figure 2.9: Production capacity utilisation in industry (GUS) and in the corporate sector (NBP) (per cent) The production capacity utilisation obtained from the GUS business survey is significantly lower from one obtained from the NBP business survey. However, the changes in this indicator are similar in both surveys. The difference is due to the fact that the two surveys are based on different enterprise samples. The GUS sample includes ca. 3500 enterprises from manufacturing excluding waste processing. The NBP sample in March 2006, in turn, included 829 enterprises from the whole corporate sector. The difference may also reflect the over-representation of big enterprises in the NBP sample, while the GUS sample is representative with respect to enterprise size.
Source: GUS data, NBP business survey.

The domestic investors' propensity to invest and the scale of the inflow of foreign investment will also depend on political developments in Poland and the introduction of reforms contributing to the improvement of law enforcement, simplification of starting business procedures, reduction of the fiscal burden, and thus the improvement of business conditions in Poland.[17]. Moreover, further acceleration of investment will depend on the effectiveness of the system for co-financing EU-funded investment projects.

2.1.4 External demand and current account of the balance of payments

According to the NBP data, in December 2005 - February 2006[18] the current account balance was lower than in the corresponding period of the previous year (current account deficit amounted to EUR 970 million, i.e. EUR 560 million less than one year before). Similarly as in the period analysed in the January *Report* the improvement in the balance in relation to the corresponding period one year before was connected with lowering of the negative balance of income and trade in goods[19]. On the other hand,

[17]The need of stepping up the reforms regarding business activity conditions is indicated, among other things, by the World Bank in its report 'Doing Business in 2006'.

[18]The *Report* analyses changes that occurred in the current account balance and foreign trade in December 2005-February 2006 in relation to the corresponding period one year before. The data of the NBP and GUS concerning basic foreign trade indicators are available till February 2005.

[19]The improvement in the balance of trade in goods occurred despite oil prices being higher than a year before. The rise in the value of oil imports deepened the trade deficit in December 2005 by EUR 187 million (in relation to December 2004) – data on the product structure of trade are only available till December 2005.

the deepening of the negative current account balance was influenced by the reduced surplus of transfers and of trade in services.

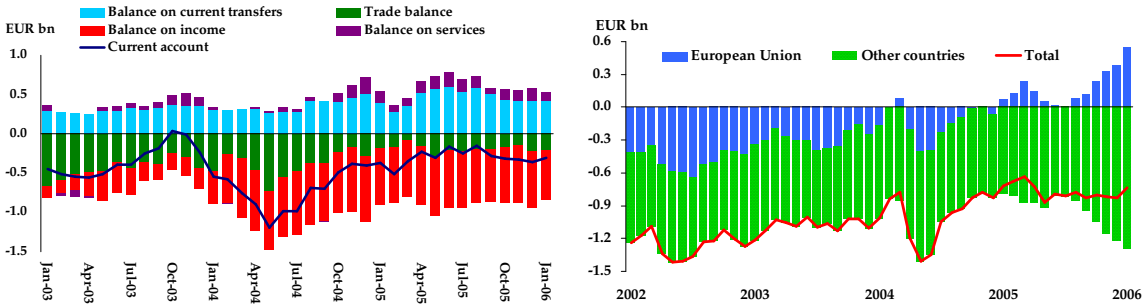


Figure 2.10: Polish foreign trade (three-month moving average). Left-hand panel: Current account balance. Right-hand panel: Polish foreign trade balance.
Source: NBP data – left-hand panel, GUS data – right-hand panel.

The GUS data indicate that the improvement in the Polish foreign trade balance in December 2005-February 2006 (in relation to the corresponding period one year before) resulted from the rise in the surplus of exports over imports in trade with EU countries. In the analysed period the value of exports to the EU rose by 21.2% y/y, while the value of imports increased by 9.3% y/y (as compared with 18.3% y/y and 10.9% y/y, for exports and imports respectively, in July-November 2005). At the same time, however, the deficit in the trade with third countries continued to grow, which was connected, among others, with the rise in oil imports value. This was reflected in a deepening imbalance in the trade with Russia[20].

In December 2005-February 2006 the growth of exports to the euro area continued to rise. In line with the Eurostat data, the value of EU imports from Poland in October-December 2005[21] increased by 15.8% y/y. To a large extent, this was the result of growing demand from the export sector of the euro area and also of the consolidation of growth tendencies in investment demand of the region. Also, the increase in Polish exports to new EU member states was higher than in July-November 2005, which resulted from a dynamic economic growth recorded by these countries[22].

Out of the main groups of goods, the growth rate of Polish exports in December 2005[23] was boosted most strongly by the sales of machinery and transport equipment. In contrast, the growth rate of food exports decreased[24]. On the one hand, this was the

[20] In December 2005 - February 2006 the negative trade balance with Russia amounted to EUR 1.4 billion, and so was twice as large as in the period December 2004 - February 2005.

[21] Eurostat data on Polish foreign trade are available till December 2005.

[22] In 2005 Q4 economic growth in new EU member states weighed by the structure of Polish exports amounted to 6.9% y/y.

[23] Data on the product structure of trade are only available till December 2005.

[24] Even though the value of Polish food exports rose in December 2005 by 18.4% y/y, it was the lowest rate of growth since Poland's EU accession (in the period May 2004 - November 2005 the average annual growth rate of Polish food exports was 35.5%).

effect of a lower sales growth rate to EU countries[25], and on the other – of a noticeable drop in exports of agricultural products to Russia[26], which was related to the restrictions imposed on Polish exports in November 2005. The acceleration of import growth in December 2005 resulted from a faster rise in imports of intermediate goods[27]. On the one hand, the high growth rate of input imports resulted from a significant increase in the value of imports of fuels (crude oil[28] and natural gas), and on the other – from the acceleration in the imports of parts and accessories. The rise in the growth rate of the latter group was probably connected with the rising growth rate in machinery and transport equipment, which follows from a high degree of internationalisation of this sector's output (cf. Box "Polish Foreign Trade" in the *Inflation Report*, January 2006).

In December 2005 the annual growth rate of consumer goods imports decreased in relation to the period analysed in the January *Report*. In December 2005 the consumer imports value increased by 8.8% y/y against 20.7% y/y in July-November 2005, which had been analysed in the previous *Report*. The lowering of the growth of imports involved both food and non-food goods. In spite of the reduction in the growth of total consumer goods imports, the growth of imports from China remained high[29]. The widening of the share of China among the supplies of non-food goods was probably conducive to a drop in prices of these products. The fact that China is increasing its share in Polish imports is consistent with the tendency, observed worldwide, of the growing share of this country in the global trade. Most forecasts indicate that the double-digit growth of Chinese exports will be sustained, which means that the share of this country in the global trade will continue to rise.

In 2005 Q4 the competitive position of domestic exporters measured with the ratio of transaction export prices to unit labour costs and real effective exchange rate recorded some improvement as compared with 2005 Q3. This resulted from the fact that transac-

[25]In December 2005 the sales of agricultural products to EU countries increased by 16% y/y, while in July-November 2005 the growth rate used to be twice as high.

[26]In November 2005 Russia introduced a ban on the imports of meat and plant products from Poland. The value of Polish agricultural exports to Russia decreased in November and December by 2% y/y and 24% y/y, respectively.

[27]Data on the product structure of imports are only available for December 2005.

[28]The 66.4-percent year-on-year rise in the value of crude oil imports in December 2005 was related to its increased supply (by 7.9% y/y), and also with its price hikes (by 54.2% y/y in euro terms). In January 2006, the oil supply volume decreased by 3.4% y/y.

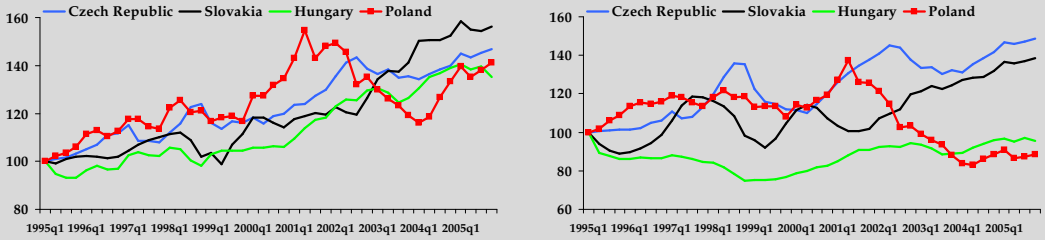
[29]The value of non-food consumer goods imports from China increased in December 2005 by 32.4% y/y (compared with 28.4% y/y in July-November 2005), i.e. over five times as fast as in the case of other countries (6.1% y/y). The increase in the value of consumer imports from China was most strongly supported by the increased import of electric home appliances (rise of 72.8% y/y), furniture (101.6% y/y) and footwear (71.6% y/y). In contrast, the rise in the value of imported clothes was markedly higher than in the previous months (5.1% y/y), which most probably resulted from the deceleration of imports connected with the expected preferential import quota at the beginning of 2006. In total, the Chinese share in Polish imports increased from 4.6% in 2004 to 5.4% in 2005. This tendency continued in the first two months of 2006, when the imports from China rose by 42.4% y/y, while the imports from other countries only increased by 15.9% y/y. This led to further growth in the Chinese share in Polish imports to 6% in February 2006. The nominal share of China in non-food consumer goods imports is even greater (it amounted to 15.5% in 2005).

tion export prices in manufacturing were falling slower than unit labour costs. Despite the 2.2-percent appreciation (in quarter-on-quarter terms) of the nominal effective exchange rate of the zloty in 2005 Q4, the real effective exchange rate deflated with unit labour costs depreciated by 3.0% (q/q).

Real effective exchange rate of the zloty

Zloty exchange rate movements following Poland's EU accession should be analysed in a longer perspective. In 2004 Q1–2005 Q4 the real effective exchange rate of the zloty (deflated with the HICP) appreciated – according to the calculations of the European Commission – by 21.6%. This appreciation, however, came after a period (2001 Q2 – 2003 Q4) of real exchange rate depreciation of 23.0%.

The real appreciation of the zloty over the last two years was accompanied by the general appreciation tendency of Central European currencies. In 2004 Q1–2005 Q4 the real effective exchange rates of the Czech, Slovak and Hungarian currencies appreciated by 9.4%, 3.9% and 3.5%, respectively. By comparison, since 2000 Q1 the real exchange rates of the Polish, Czech, Slovak and Hungarian currencies strengthened by 11.0%, 24.2%, 32.2% and 27.8%, respectively. In the last two years the scale of the zloty appreciation was the highest among these currencies, while in the whole decade between 1995 and 2005 the real exchange rate appreciation of the Polish currency was consistent with the appreciation of the other Central European currencies (see Figure).



Left-hand panel: Real effective exchange rate deflated with the HICP. **Right-hand panel:** Real effective exchange rate deflated with unit labour costs in manufacturing. **Source:** European Commission

An appropriate measure to assess the competitiveness of producers in international markets is an index reflecting production costs. Under internationalised financial markets, where the cost of capital are similar in particular countries, the cost advantage is mainly decided by labour costs. Most of trade has so far involved the manufactured products. For this reason, the real exchange rate deflated with unit labour costs in manufacturing is an appropriate indicator of the international competitive position of producers. In 2004 Q1–2005 Q4 the real effective exchange rate of the zloty deflated with unit labour costs in manufacturing appreciated by only 5.3%, while the exchange rate of the Czech and Slovak korunas and Hungarian forint strengthened by 13.6%, 8.9% and 6.6%, respectively. In turn, since 2000 Q1 the real exchange rates of the Czech, Slovak and Hungarian currencies have strengthened by 33.4%, 24.2%, and 21.4%, respectively, while the real exchange of the zloty rate depreciated by 22.6%. Despite the

appreciation observed in the past two years, the real value of the zloty and the forint are currently lower than in 1995 Q1 – by 11.5% and 4.6%, respectively. By contrast, the real value of the Czech and Slovak currencies is higher – by 48.8% and 38.8%, respectively. This means that despite the nominal appreciation of the zloty observed over the past two years, the competitive position of Polish producers remains high in comparison to the competitiveness of producers from Central European countries (see Figure).

	04q1	04q2	04q3	04q4	05q1	05q2	05q3	05q4
Export prices / Unit labour costs*								
r/r	25,7	32,6	12,8	7,7	-8,2	-16,6	-6,7	-6,4
kw./kw.	2,0	15,6	-10,5	2,0	-13,0	5,0	0,2	2,3
Import prices / domestic producer prices								
r/r	6,4	1,7	-8,2	-10,5	-11,9	-13,8	-3,4	-2,2
kw./kw.	3,4	-2,0	-9,4	-2,5	1,7	-4,1	1,6	-1,3
REER ULC*								
r/r	-22,4	-16,8	-2,5	9,1	24,0	17,5	9,4	3,2**
kw./kw.	1,5	-4,2	9,1	2,7	15,4	-9,2	1,6	-3,0**

Table 2.3: Polish export and import competitiveness measures (change in per cent)
Notes:
* – Unit labour cost index is calculated as the ratio of payroll growth per employee to the labour productivity dynamics, measured as output (volume) in manufacturing per person employed in this sector,
REER ULC – real effective exchange rate deflated with unit labour costs in manufacuring. Minus denotes depreciation.
** – estimation based on montly GUS data and ECB data.
Source: Own calculations based on NBP, GUS, EC, ECB and Eurostat data.

The NBP's Economic Climate Survey[30] indicates that the percentage of enterprises indicating the zloty exchange rate as a barrier to growth of the surveyed enterprises decreased by 2.5 percentage points in relation to 2005 Q4 and amounted to 18.9%. The zloty exchange rate against the US dollar and the euro was all the time running at a level favourable for most exporters from the point of view of export sales. In 2006 Q1 the percentage of exporting enterprises remained high[31], while the export forecast index signals the possibility that the growth rate of exports in 2006 Q2 will slightly outpace that from 2006 Q1. Nevertheless, some increase was observed in the average share of

[30] See *Preliminary information concerning the condition of the corporate sector and the economic climate in the second quarter of 2006*, NBP.

[31] Out of enterprises surveyed in the NBP's Economic Climate Survey in 2006 Q1, 63.9% pursued export activity (compared with 64.2% in 2005 Q4). As regards enterprises surveyed on the occasion of reporting to the GUS exporters accounted for 48.2% in 2005

unprofitable exports in export sales revenue[32].

In 2005 Q4 a slight deterioration was recorded in the competitive position of domestic producers, which was revealed by the modified ratio of the index of transaction import prices to the index of domestic producer prices in manufacturing. Thus measured index of competitiveness decreased in 2005 Q4 by 1.3% (q/q) against a rise of 1.6% (q/q) in 2005 Q3.

In 2005 Q4 the current account deficit was financed by the surplus on the capital account, which resulted from the inflow of EU funds and other investments. In the whole of 2005 the inflow of direct foreign investment was EUR 1.4 billion (i.e. 41%) higher than the current account deficit. Due to the significant inflow of direct foreign investment in 2005 the balance of payments was in surplus.

In 2005 most of the warning indicators used for assessing the external imbalance improved in relation to last year's values and all of these indicators remained at a safe level (Table 2.4).

Warning indicator	**2004**	**05q1**	**05q2**	**05q3**	**05q4**	**2005**
$\frac{\text{Current account balance}}{\text{GDP calculated annually}}$	-4,2%	-3,4%	-2,2%	-1,5%	-1,5%	-1,5%
$\frac{\text{Current account balance + capital account balance}}{\text{GDP calculated annually}}$	-3,8%	-2,8%	-1,6%	-1,2%	-1,1%	-1,1%
$\frac{\text{Trade balance}}{\text{GDP calculated annually}}$	-2,2%	-1,8%	-1,3%	-1,0%	-0,9%	-0,9%
$\frac{\text{Direct investment}}{\text{Current account deficit}}$	112,9%	217,2%	106,2%	209,5%	32,0%	141,4%
(Current account balance + capital account balance + direct investment)/GDP	0,9%	2,9%	0,2%	1,8%	-0,8%	0,9%
$\frac{\text{Foreign debt service}}{\text{Revenue from export of goods calculated annually}}$	35,4%	40,2%	40,4%	38,6%	32,5%	32,5%
Foreign reserves expressed in terms of monthly import of goods and services	4,0	4,4	4,6	4,4	4,3	4,8

Table 2.4: Main warning inidicators
Source: GUS data, NBP data, NBP calculations.

2.2 Output

According to the GUS data in 2005 Q4 the rise in gross value added amounted to 4.0% y/y compared with 3.6% y/y in Q3. The acceleration in the annual growth rate of value added in 2005 Q4 was mainly due to a strong acceleration in the growth in industry (Figure 2.11). In view of preliminary data for January-February 2006 it can be assessed that Q1 brought further acceleration in the annual growth rate of value added.

[32]The average share of unprofitable exports in export sales revenue went up to 8.1% in 2006 Q1, compared with 6.7% in 2005 Q4.

According to the NBP estimates, 2006 Q1 also saw a growth in quarter-on-quarter terms (seasonally adjusted), with a growth exceeding 1% once again.

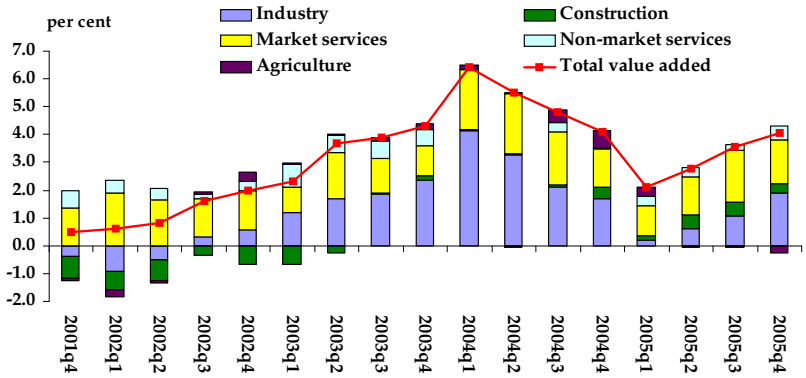


Figure 2.11: Sector contribution to annual gross value added growth (per cent)
Source: NBP calculations on the basis of GUS data.

Seasonally adjusted (per cent)	03q3	03q4	04q1	04q2	04q3	04q4	05q1	05q2	05q3	05q4
Value added – total	1.2	1.1	2.4	0.7	0.5	0.4	0.5	1.4	1.3	0.9
Industry	4.1	2.5	6.2	0.9	-0.7	0.5	0.1	2.6	1.1	3.6
Construction	0.9	-0.4	1.1	0.0	1.2	3.3	0.5	2.7	1.6	1.1
Market services	0.5	1.1	1.5	0.7	0.3	0.6	0.8	0.9	1.2	0.5

Table 2.5: Value added and its components (q/q seasonally adjusted)
Source: NBP calculations on the basis of GUS data.

In industry, after a strong recovery observed in the final months of 2005, 2006 Q1 brought a continuation of the positive tendencies. As a result, the industrial output began to rise again at a rate close to 10% y/y. There has been a recovery in industries with a high share of export sales, in particular in manufacture of radio, television and telecommunications equipment, fabricated metal products and mechanical vehicles. After the dynamic growth in 2005 the manufacture of machinery and equipment stabilised at a high level. Some slowdown of the upward trends has been observed in the furniture and rubber industries. In spite of still limited exports of some food products to Russia, the sales of food industry is surging. After a strong decline in 2005 Q2, the output in metallurgy and the coke and petroleum refining industries is steadily growing. The fall in the output of textile industry has also been halted. In turn, the enterprises producing construction materials have recorded a lower output growth rate than that at the end of 2005 due to the expiry of the renovation tax relief at the end of the year and a transitory slowdown in construction output related to unfavourable weather conditions at the beginning of 2006. On balance, the observed structure of industrial output is consistent with the dynamically increasing exports and simultaneously growing contribution of sales in the domestic market to the output growth. The business tendency surveys of the GUS and the majority of other analytical centres suggest that the current dynamic

rise in industrial output will continue in the future. Moreover, growing investment demand in enterprises indicates that this rise should increasingly result from growing production capacities.

According to the GUS data, the growth rate of value added in market services unexpectedly decreased in 2005 Q4 in relation to 2005 Q3, which resulted mainly from the slowdown in the growth of value added in trade and repairs. The reduction in the growth rate of value added in trade and repairs in 2005 Q4 was surprising in view of the GUS monthly data indicating a markedly higher growth rate in both retail and wholesale sales in relation to those recorded in 2005 Q3. In view of preliminary data for January-March 2006 it can be assessed that the 2006 Q1 growth in market services was slightly higher than in 2005 Q4. This is indicated by the increasing growth rate in retail sales, still favourable condition in wholesale trade and continually high growth in the sales of transport services. Favourable business conditions are prevailing in the other sections of market services. Economic climate surveys indicate that in the coming months the value added in services will be growing along the lines of the so-far observed trends.

In line with the GUS data, 2005 Q4 saw a stronger decrease in the growth rate of value added in construction that it had been expected on the basis of monthly data on construction and assembly production. The output in construction in 2006 Q1 was strongly disrupted by unfavourable weather conditions, but already in March 2005 a pronounced rise was observed in the construction and assembly production in year-on-year terms. Given the still optimistic signals visible in economic climate surveys, continuously steep growth in the workload of construction-site development enterprises and the expected increase in the level of absorbing EU funds allocated for financing infrastructural projects, the NBP assesses the outlook for construction output growth in the coming months as favourable.

2.3 Labour market

2.3.1 Employment and unemployment

Since 2003 Q2 a positive development has been observed consisting in the growth in the number of persons working in the economy. Although the growth rate of the number of working persons in the economy according to the BAEL (Labour Force Surveys) in 2005 Q4 was lower than in 2005 Q3 (both in year-on-year and quarter-on-quarter seasonally adjusted terms), it remained at a high level.

According to the BAEL data, in 2005 Q4 there were 332 thousand more working persons in the economy than one year before (this represents a rise of 2.4% y/y as compared with 2.8% y/y in 2005 Q3). In seasonally adjusted terms the number of working persons in 2005 Q4 increased by 0.6% q/q (Figure 2.12). This high growth of the number of working persons in the economy in 2005 Q4 was driven mainly by a strong rise in the number of working persons outside private agriculture (3.5% y/y against 3.7% y/y

Figure 2.12: Working persons in the economy (according to BAEL) and in entities with more than 9 employees
Source: GUS data.

	Number of working persons in 2005q4 (thousands)	Growth in 2005q3 (y/y)	Growth in 2005q4 (y/y)	Growth in 2005q3 (q/q) seasonally adjusted	Growth in 2005q4 (q/q) seasonally adjusted
Total	14 390	2,8%	2,4%	1,1%	0,6%
Total excluding private agriculture	12 084	3,7%	3,5%	1,3%	0,8%
Place of residence					
urban areas	8 834	1,7%	3,0%	0,9%	1,1%
rural areas	5 556	4,3%	1,3%	0,9%	-0,8%
Economic sector					
agriculture	2 482	-0,4%	-2,9%	0,9%	-1,4%
industry	4 178	2,8%	3,2%	-0,1%	0,7%
services	7 723	3,8%	3,6%	1,4%	1,1%
Ownership sector					
public	4 246	1,3%	1,5%	0,1%	-0,4%
private	10 143	3,4%	2,7%	1,8%	1,0%
Employment status					
hired employees	10 701	4,6%	3,9%	1,3%	0,8%
employers and self-employed	2 972	-2,6%	0,5%	0,2%	1,4%
contributing family workers	717	0,1%	-11,2%	1,9%	-4,9%
Type of job contract					
fixed-term contract	2 841	16,2%	15,2%	4,0%	2,8%
permanent contract	7 860	0,9%	0,4%	0,6%	-0,1%

Table 2.6: Working population according to BAEL in selected sections
Source: BAEL data, NBP calculations.

in 2005 Q3)[33]. In 2005 Q4 there was an acceleration of growth in the number of people working in industry and services, while the decline in the number of people working in agriculture deepened. (Table 2.6). The above data indicate the acceleration of the process of reallocation of people working in agriculture to other sectors of the economy. Over the last three years (2002 Q4-2005 Q4) the number of working persons in the economy increased by 911 thousand (i.e. 6.8%), 65% of which in the service sector. The growth in the number of persons working on a fixed term contract remains high (15.2% y/y in 2005 Q4), although it has decreased in comparison to the previous years (19.5% y/y in 2004 and 25.5% y/y in 2003). At the same time, since 2005 Q3 an increase in the number of persons employed on a permanent-contract basis has been observed, which may be due to the expiry of previous fixed term contracts and their obligatory replacement with permanent contracts. This new tendency may also result from the employers' desire to employ or retain adequately qualified employees amid increasing difficulty in obtaining qualified workforce (as shown in the GUS business tendency surveys). These difficulties may be due to the increased migration of Polish workforce to other European countries after Poland's joining the EU[34].

In the corporate sector there is an accelerated rise in employment. Between the beginning of 2005 and March 2006 the number of persons employed in enterprises grew by 133 thousand, i.e. by 2.8% (Figure 2.13). In March 2006, the annual growth of average employment in the corporate sector amounted to 2.7% y/y.

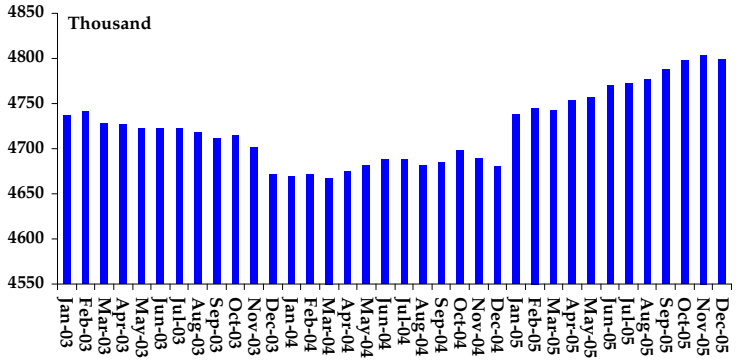


Figure 2.13: Employment in the enterprise sector (thousands)
Source: GUS data.

The above data reveal that after the restructuring in enterprises consisting in the reduction of employment which lasted till 2004 Q1, the possibility of further increase in output without increasing the number of working persons has been limited. The current increase in production is taking place mainly in the service sector, which has been

[33] Such a high growth rate in the number of persons working outside private farming (i.e. exceeding 3.0% y/y) was last recorded in 1998.

[34] After Poland's accession to the EU, there was a surge in the number of Poles leaving the country to work abroad. It is not known, however, how people working abroad temporarily are classified in BAEL (LSF) and so it is difficult to assess the extent to which this development impacts labour market processes, which constitutes a source of uncertainty in the assessment of the situation in the labour market.

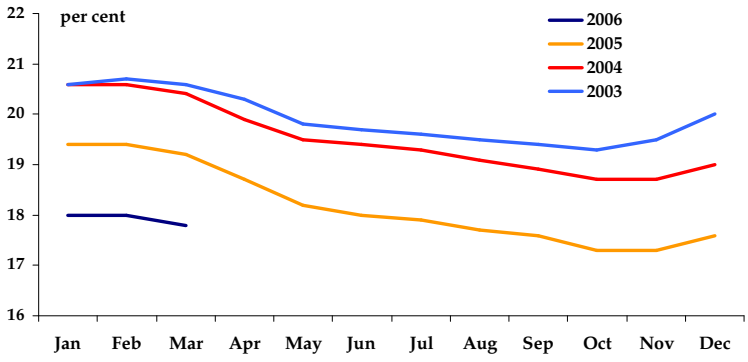


Figure 2.14: Registered unemployment according to labour office data (per cent)
Source: GUS data.

characterised so far by higher labour intensity than industry. Due to these factors, the observed economic growth is accompanied by a higher labour demand than before.

The unemployment rate is still falling (both according to BAEL and labour offices' data). In March, the unemployment rate registered by labour offices amounted to 17.8%, which constitutes a drop of 1.4 percentage points in year-on-year terms. (Figure 2.14). According to the BAEL data, in 2005 Q4 the unemployment rate was 16.7% and was 1.3 percentage points lower in year-on-year terms. In total, during the last three years (2002 Q4 - 2005 Q4) the number of unemployed according to the BAEL, dropped by 424 thousand (i.e. by 12.8%). The rise in the labour demand is coupled with an increase in economic activity recorded for the past three quarters (in 2005 Q4 the economic activity ratio was 55.2% as compared with 54.9% a year ago). In 2005 Q4 the number of the economically active increased by 0.8% y/y.

The NBP economic climate surveys[35] indicate that the growth of employment in enterprises will be continued in 2006 Q2; the positive balance of employment forecasts[36] – in seasonally adjusted terms – has grown since the previous quarter and is the highest in the survey history (i.e. since 2001). Also the business tendency surveys conducted by the GUS confirm bright employment prospects in the enterprise sector.

To sum up, the data on the labour market indicate that the scale of improvement in the labour market situation has so far been consistent with expectations of the previous *Report*.

2.3.2 Wages and productivity

The economic recovery in Poland is accompanied by an increased wage growth. In 2005 Q4 the rise in nominal wages in the economy amounted to 5.1% y/y (against 3.4% in the

[35] See *Preliminary information concerning the condition of the corporate sector and the economic climate in the second quarter of 2006*, NBP.

[36] The net balance of employment forecasts stands for the difference between the percentage of companies declaring to raise employment and the percentage of those declaring its reduction.

Growth rate y/y (enterprise sector)	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06
Nominal wage	**1.8%**	**6.4%**	**6.9%**	**1.5%**	**3.6%**	**4.8%**	**5.4%**
excluding one-off events	3.6%	3.7%	4.2%	3.7%	4.3%	4.8%	5.4%
Real wage	**0.0%**	**4.7%**	**5.8%**	**0.8%**	**2.9%**	**4.1%**	**4.9%**
excluding one-off events	1.8%	2.1%	3.2%	3.0%	3.6%	4.1%	4.9%
Nominal wage fund	**4.0%**	**8.6%**	**9.5%**	**4.1%**	**6.3%**	**7.3%**	**8.2%**
excluding one-off events	5.9%	5.9%	6.8%	6.3%	7.1%	7.3%	8.2%
Real wage fund	**2.2%**	**6.9%**	**8.4%**	**3.4%**	**5.6%**	**6.6%**	**7.8%**
excluding one-off events	4.0%	4.2%	5.7%	5.6%	6.4%	6.6%	7.8%

Table 2.7: Wages and wage fund in corporate sector (y/y growth rates)
Source: GUS data, NBP calculations.

previous quarter) and was higher than forecasted in the January *Inflation Projection*. A higher wage growth in comparison to the previous quarter was also observed in the enterprise sector, where wages increased by 4.8% y/y (against 2.7% in 2005 Q3). In 2006 Q1 the wage growth rate in the enterprise sector was admittedly close to that in the previous quarter (4.7% y/y), yet in the following months of that quarter it gradually increased (Table 2.7). Moreover, the decrease in the wage growth recorded in January 2006 in the enterprise sector was due to the earlier payment of yearly awards in the hard coal mining industry than it had been the case one year before. Taking into account the changes in the schedule of payment of bonuses, which since September 2005 have been increasing the volatility of the monthly wage growth rate in the enterprise sector, an accelerated nominal wage growth rate is observed in enterprises (Table 2.7)[37]. In the context of low inflation it also entails an increased real wage growth.

The acceleration in wage growth and a significant growth of employment in the enterprise sector contributed to the increase in the aggregate wage growth rate, which in March 2006 amounted to 8.2% y/y in nominal terms against 7.3% y/y in February and 6.3% y/y in January. (Table 2.7).

In 2005 Q4 labour productivity growth in the economy accelerated (from 0.9% y/y in Q3 to 1.8% y/y in Q4)[38]. In spite of this fact, the rise in unit labour costs in the economy as a whole observed since 2004 Q3, has continued and accelerated in 2005 Q4 (from 2.5% y/y in Q3 to 3.3% y/y in Q4) (Figure 2.16, left-hand panel)[39]. The growth rate of

[37]The adjustment for one-off factors in the series of average wages in the enterprise sector consists of an expert reduction of the amount of aggregate wages in October and November 2005 and January 2006, as well as its increase in September and December 2005 by amounts corresponding to the payment of yearly awards and bonuses, which took place according to a different schedule than the year before.

[38]Labour productivity in the economy: value added in the economy (in constant prices) per working person according to BAEL (LFS).

[39]Unit labour costs in the economy: nominal aggregated wages in the economy (average wage in the economy multiplied by the number of people working in the economy according to BAEL) in relation to the gross added value (in constant prices).

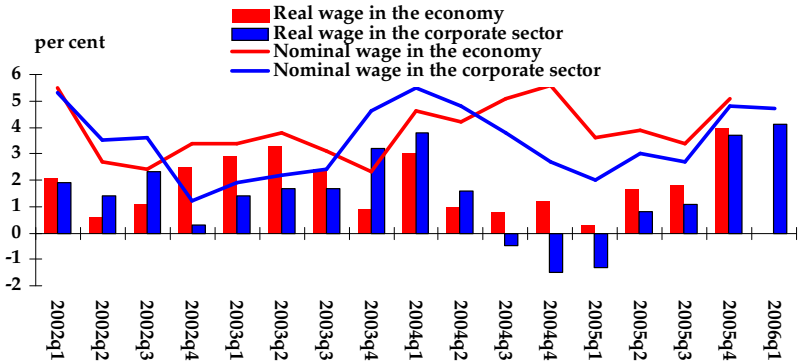


Figure 2.15: Annual percentage growth of wages in the economy and in the corporate sector (nominal and real)
Source: GUS data, NBP calculations.

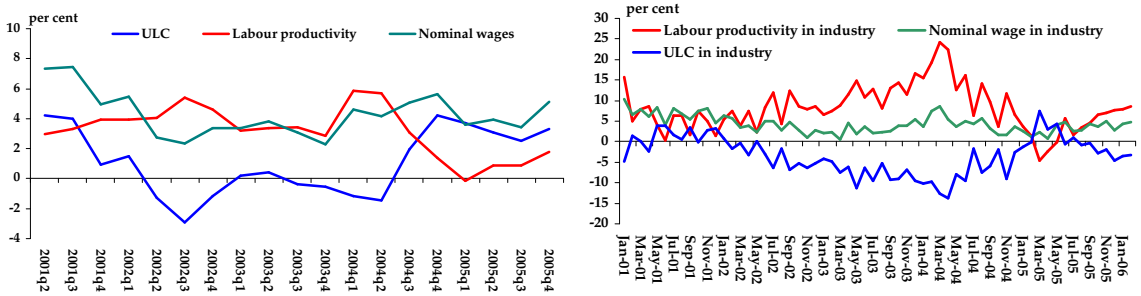


Figure 2.16: Annual percentage growth of unit labour costs (ULC), labour productivity and nominal wages – seasonally adjusted. Left-hand panel: Economy. Right-hand panel: Industry.
Source: GUS data, NBP calculations.

unit labour cost in the economy excluding private farming was even higher than in the economy as a whole.

Labour productivity growth in industry also accelerated (8.0% y/y in Jan-Feb 2006 from 7.1% y/y in 2005 Q4 and 3.0% y/y in 2005 Q3). It is higher than the wage growth in this sector. In consequence, unit labour costs in industry have been decreasing since August 2005 (Figure 2.16, right-hand panel)[40].

[40]Unit labour cost in industry: the ratio of average nominal wage in industry to labour productivity in industry (labour productivity in industry: the ratio of industrial output in constant prices to average employment in the sector).

2.4 Other costs and prices

2.4.1 External prices

The prices of commodities in international markets went up in 2006 Q1. Price increases were recorded in most of the major groups both in quarter-on-quarter and year-on-year terms (Table 2.8). The acceleration in the growth rate of prices of non-energy commodities resulted from the continued rising tendencies in the non-ferrous metal markets and the rise in food prices. Also the prices of main energy commodities (crude oil, coal and natural gas) increased in January-March 2006.

	y/y change in per cent				q/q change in per cent			
	05q2	05q3	05q4	06q1	05q2	05q3	05q4	06q1
Total	**27,9**	**33,1**	**23,1**	**24,4**	**7,2**	**11,1**	**-4,1**	**8,9**
Non-energy raw meterials	**7,4**	**11,5**	**13,0**	**12,3**	**-0,7**	**-0,3**	**3,6**	**9,4**
food	-6,5	7,6	10,1	10,6	5,8	-3,4	-1,4	9,7
industrial raw materials	14,2	13,0	14,1	12,9	-3,1	1,0	5,5	9,3
agricultural	0,3	0,3	2,1	3,2	-2,7	-1,1	1,8	5,3
non-ferrus metals	14,8	14,2	19,2	32,4	-0,7	2,5	11,1	17,0
Energy raw materials	**37,6**	**42,0**	**27,1**	**29,4**	**10,5**	**15,3**	**-6,5**	**8,7**
crude oil	44,3	49,1	32,4	32,2	11,1	17,0	-5,8	7,9

Table 2.8: World prices of main raw materials' groups in USD (y/y change in per cent)
Source: Hamburg Institute of International Economics.

This significant surge in oil prices (Figure 2.17 left-hand panel) recorded in January 2006 was caused by the growing political risk in the main producer countries of this commodity (i.e. Iran, Nigeria and Iraq). The elevated level of political risk raised concerns about the security of oil supply, which – if disrupted – could not be compensated by an increased output in other countries due to the world surpluses of production capacities remaining on a low level. Between the end of January and mid-February 2006 oil prices were falling (in total by almost USD 10). However, already in the middle of February the persistently high uncertainty about geopolitical developments led to another change in trend. At the end of March 2006, the upward trend in oil prices gained momentum on the international markets, which reflects the ever more tense situation over the Iran nuclear programme. In effect, on 19 April 2006 the Brent crude oil price recorded its peak – in nominal terms – to stand at 73 USD per barrel. Another important factor fostering the growth in oil prices, next to political risk, is the relatively low level of utilizing production capacity of American refineries[41], which is reflected in the depletion of the gasoline stock in the USA.

The increase in concerns about the security of oil supply once again intensified the activity of investment funds, which substantially raised their purchases of futures (Fig. 2.17,

[41] This situation derives primarily from the logistics-related problems of some refineries which commended to withdraw the MTBE fuel component and to replace it with ethanol.

right-hand panel), thus additionally contributing to a strong increase in price volatility.

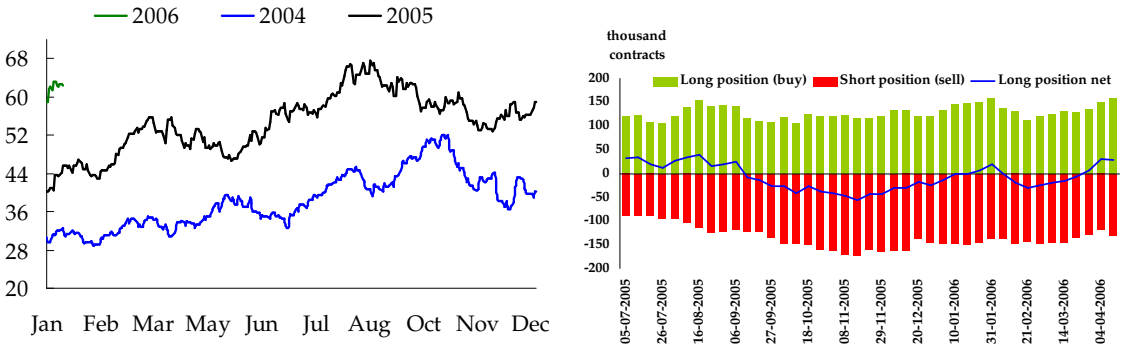


Figure 2.17: Left-hand panel: Brent crude oil prices in 2004-2006 (USD). Right-hand panel: NYMEX future contracts.
Source: Bloomberg, Commodity Futures Trading.

The interaction between supply and demand in 2006 Q1 was contributory to curbing oil price hikes. The worldwide rise in the oil demand in this period turned out to be lower than expected in December 2005[42], which was the effect of the reduced growth rate of demand for this commodity in the United States and South-East Asian countries. This situation favoured the building-up of crude oil stocks. At the same time, the decisions of the OPEC to uphold the output in 2006 Q2 at an unchanged level – despite the temporary decline in demand – indicate that the cartel retains its neutral position in supply policy.

Oil price hikes both in the spot and futures markets persuaded many analysts to increase their oil price forecasts in 2006 Q1. A factor listed among the most important risks to the current oil price forecasts is the possibility of a considerable drop in supply due to the political situation or weather conditions.

The reduction in the volatility of monthly average oil prices contributed to the inflation stabilisation in the United States and the euro area in the first two months of 2006. In the United States the average annual price index of consumer goods and services (CPI) in January-February 2006 stood at 3.8% (compared with 3.9% in the period covered by the previous *Inflation Report*, i.e. in August-December 2005). In turn, the harmonised index of consumer prices (HICP) in the euro area was 2.4% and so remained at a level similar to that in August-December 2005[43]. The continuing low level of core inflation

[42] According to estimates from March 2006 the oil demand in 2006 Q1 rose by 0.96-1.28 million b/d, i.e. by 1.1-1.5% in comparison to 2005 Q1. Thus, the demand increase in this period proved lower than in 2005 Q1 (when the world demand for oil increased by 1.31-1.90 million b/d, i.e. 1.5-2.3%) and also lower than expected in December 2005 (when forecasts accounted for a demand rise of 1.59-1.94 million b/d, i.e. 1.9-2.3%).

[43] Rising prices of fuels and energy carriers in 2005 led to an increase in the share of energy in the basket of consumer goods and services, which may contribute to a greater impact of changes in fuel prices on the inflation rate in 2006. In the United States the contribution of energy to the CPI basket adds up to 8.7% (compared with 8.0% in 2005), and in the euro area – to 9.2% (8.5%).

measures in the United States and the euro area may indicate that the impact of elevated energy prices on the prices of other consumer goods and services has been very limited so far[44].

2.4.2 Producer prices

In line with the expectations presented in the previous *Inflation Report*, in January and February 2006 the annual growth rate of producer prices in industry slightly increased and reached 0.9% y/y in March 2006. The rise in producer prices is observed in the domestic market, while export prices have displayed a negative growth rate for over a year now. The lowering of export prices was driven by the appreciation of the zloty in 2005 r.[45].

The greatest impact on the growth rate of producer prices in 2006 Q1 resulted from price increases in the section *production and supply of electricity, gas and water* (the price of energy carriers was raised by over 3% (m/m) in January 2006). Moreover, price rises were recorded in *mining and quarrying* (particularly in *mining of metal ores*). As a result, the sections *power production and supply* and *mining* had a positive contribution to the PPI. However, due to the price drop in manufacturing, the PPI remained stable (Figure 2.18, right-hand panel).

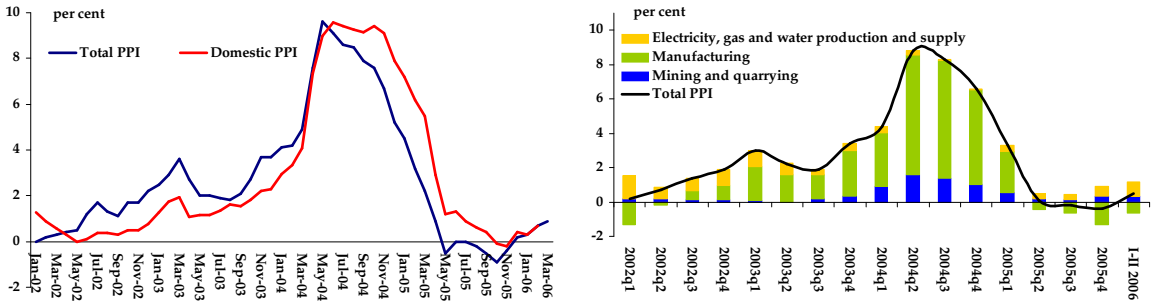


Figure 2.18: Producer prices in industry (PPI). Left panel: Total PPI and domestic PPI. Right panel: Contribution of producer prices growth in PPI total annual growth.
Source: GUS data.

[44]The core inflation measure in the United States in January-February 2006 amounted to 2.1% (and so it stayed at the level recorded in August-December 2005), while in the euro area it was 1.2% (against 1.4% in the period covered in the previous *Inflation Report*). The ongoing debate concerns the informative value of core inflation measures in the situation of expectations that oil prices will not go down.

[45]The methodology of calculating the index of export prices, accepted by the GUS, makes them very vulnerable to exchange rate fluctuations.

2.5 Financial markets

2.5.1 Asset prices/Interest rates[46]

In 2006 Q1 the situation on the Polish financial market was largely influenced by global factors. In the first two months of 2006 those factors were affecting not only the zloty appreciation but also the strengthening of other currencies of Central European countries. In March, the outflow of foreign capital contributed to the weakening of all currencies and a drop in bond prices in the region with the Hungarian forint and the Polish zloty – although on a smaller scale – experiencing the strongest depreciation. The depreciation of the Polish zloty and a rise in the yields on Treasury bonds in this period were also driven by increased political uncertainty in Poland.

Short-term interest rates

In January-February 2006 there was a downward trend in short-term interest rates. This was mainly the result of favourable data on inflation, which fuelled market expectations for interest rate cuts. The January 25-basis-point cut of the reference rate by the MPC to the level of 4.25% was consistent with the expectations of the market. At the same time, the January projection, indicating a slower return to the target than had been accounted for in the August *Inflation Report*, reinforced the expectations for further interest rate reductions.

Since the markets were divided as regards the predicted date of the next reduction in the NBP rates (expected in February or March), the MPC's February decision to cut rates by 0.25 percentage point came as a surprise to some market participants and led to decline in money market yields. In March the downward trend in the money market interest rates subsided. At the same time, the FRA rates indicated that no further reductions in the NBP interest rates were expected. This change was, among other things, caused by the zloty depreciation (of approx. 4.5% against the euro) resulting from both global and domestic factors (see Section *Exchange rate*). Moreover, market participants saw the rising political risk in Poland as an important argument against monetary policy easing. As a result, the March decision of the MPC on keeping the rates at an unchanged level was consistent with market expectations and thus did not have any bearing on money market rates. At the end of the analysed period, the FRA rates priced the maintenance of NBP interest rates at the level of 4.0% till the end of 2006. The results of the Reuters survey also indicate that while in the second half of March (on 17 March) analysts anticipated one more 25-basis-point cut in 2006 (most probably in April), at the beginning of April 2006 (i.e. on 11 April) the median of their expectations indicated no change in the level of interest rates.

[46]The cut-off date for the data presented in this chapter is 19 April 2006.

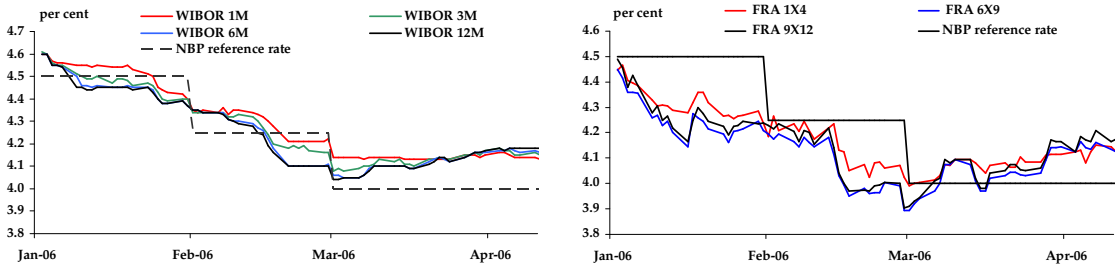


Figure 2.19: NBP reference rate and interest on interbank deposits (left-hand panel) and NBP reference rate and interest on FRA contracts for 3M WIBOR (right-hand panel).
Source: Reuters data.

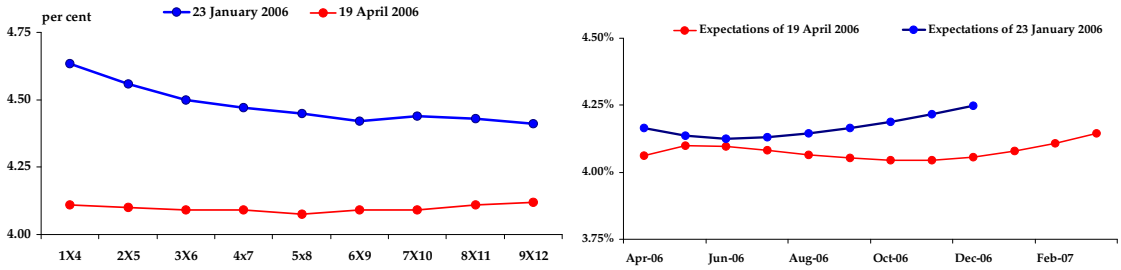


Figure 2.20: Three month forward curves (left-hand panel) and expected changes in NBP reference rate on the basis of FRA contracts and Reuters survey of 23 Jan 2006 (right-hand panel).
Source: Reuters data.

Long-term interest rates

The downward trend in the yields on Treasury bonds was continuing till the end of February 2006 and was primarily attributable to market expectations of NBP interest rate cuts. At the beginning of March, however, the prices of Polish Treasury bonds decreased considerably. This concerned also other Central European countries (Figure 2.21) and largely resulted from the outflow of foreign portfolio capital in reaction to the heightened expectations for interest rate rises in the euro area and the United States. Higher yields on Hungarian bonds were also the effect of the continuing macroeconomic imbalances (external and internal), yet, due to prior drops in bond prices, the scale of the March price reduction was limited. Higher yields in the Czech Republic resulted mainly from changes in the euro area yields; the local factor driving the reduction in bond prices in the Slovak Republic were the expectations of increases in the central bank interest rates related to a rise in inflation in this country. Another factor that contributed to the rise in the yields on Polish bonds in this period was the increased political uncertainty in Poland.

Even though the above-mentioned drop in bond prices in March considerably reduced the scale of this year's rises in the prices of Polish Treasury bonds (Figure 2.23 – left-hand panel), the spread between the yields on Polish bonds and the yields on euro-area

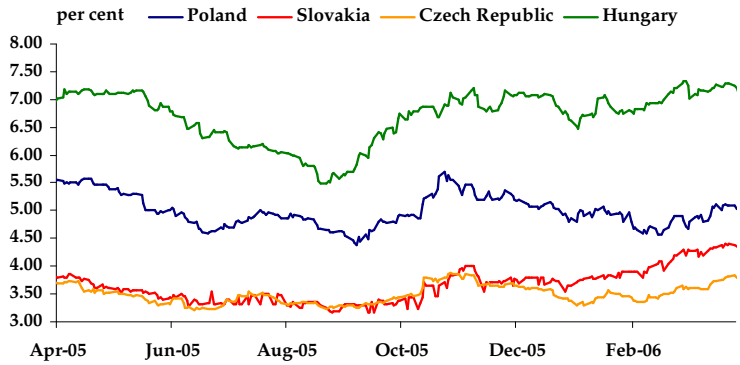


Figure 2.21: Change in the yields of the long-term bonds in Poland, Slovakia, Czech Republic and Hungary.
Source: Reuters.

securities narrowed to a much greater extent (Figure 2.23 – right-hand panel). This was mainly the result of a drop in the euro-area Treasury bond prices in 2006 Q1.

In January-February 2006 the annual average yields on long-term Polish Treasury bonds continued to fall. As a result, ever since August 2005 Poland has been complying with the long-term interest rate criterion, which is one of the conditions for the euro-area membership[47].

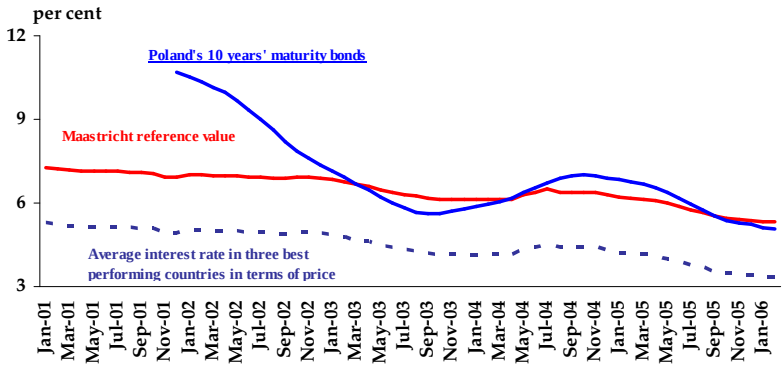


Figure 2.22: Average annual yield (12-month moving average) for long-term Treasury bonds in Poland versus the reference value for the Maastricht criterion
Source: NBP estimates based on Eurostat data.

The portfolio of Treasury bonds held by non-residents was growing in the period when further NBP interest rate cuts were still expected. In March the outflow of the portfolio

[47] A given country complies with the criterion when its (12-month moving) average yield on long-term Treasury bonds observed in the course of the year does not exceed the average arithmetic yield on bonds of the three EU countries with the most stable prices by more than 2 percentage points. For more information about the Maastricht criteria see: *Report on the Costs and Benefits of Poland's Adoption of the Euro*, NBP, 2004.

capital resulted in a temporary reduction of non-residents' investment in the Polish Treasury securities market, yet, at the end of the analysed period the value of the non-resident portfolio increased again to the level observed before the March disturbance. At the same time, following the period of a decline in the second half of 2005, the share of non-residents in the market of Polish Treasury securities stabilised in 2006 Q1 at the level of approximately 24%.

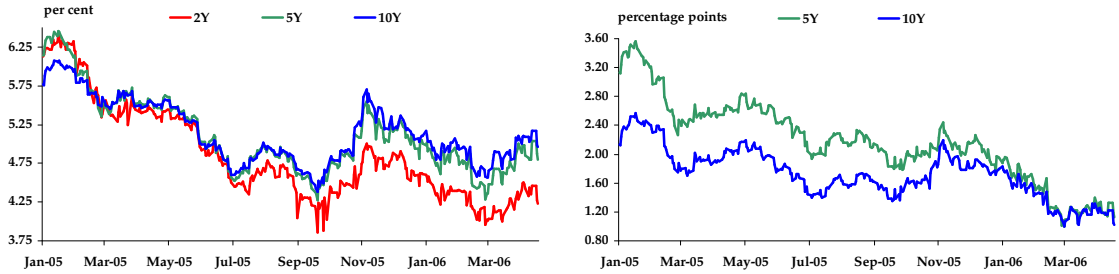


Figure 2.23: Change in the yields of the benchmark bonds (left-hand panel) and differences in yields between German and Polish T-bonds (right-hand panel)
Source: Reuters.

Equity market

In January-March 2006 the main indices of the Warsaw Stock Exchange displayed increased volatility. This rise in volatility was mainly driven by the outflow of the portfolio capital from Central European countries, and also by increased political uncertainty in Poland.

At the end of February 2006 the WIG index for the first time in history broke the barrier of 40 thousand points. In the first two weeks of March the mentioned outflow of foreign portfolio capital caused a deep slump in the main WSE index (of 6.2%) as compared to its high level recorded in February. In the same period, the scale of fall in WIG20, the index of the largest companies, was equal to 8.0%[48]. Since mid-March the WSE indices established on an upward trend again. The March decision of the US central bank to increase Fed interest rates by 25 basis points (to the level of 4.75%), and in particular the accompanying press release contributed temporarily to the drops in both the world and Central European stock exchanges. In the press release the Fed emphasised that to keep inflation under control may require further monetary policy tightening. At the end of the analysed period, the WIG index exceeded the level of 40 thousand points, setting subsequent records at April sessions.

[48]Due to the fact that non-residents mainly invest in the largest companies listed in the WSE, changes in their behaviour exert the strongest impact on the path of this index.

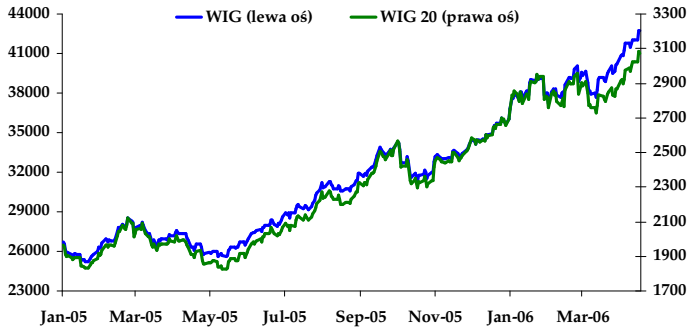


Figure 2.24: Changes in main stock exchange indices
Source: Reuters.

Trends in international financial markets

Since the beginning of January 2006 the Federal Fund Rate has been raised on two occasions, by the total of 50 basis points, to the level of 4.75% at the end of March 2006. The decisions of the Federal Open Market Committee (FOMC) were consistent with market expectations. In January-April 2006 the yields on US government bonds displayed a rising trend. Towards the end of the reviewed period the yields on American 2-, 5- and 10-year bonds settled at approx. 4.8%, 4.9% and 5.0%, respectively.

At the end of March 2006 analysts expected that the Fed would raise its interest rate for the sixteenth time in a row. At the same time they indicated the approaching end of the monetary policy tightening cycle in the United States, while not ruling out the possibility of further rises in 2007. The results of the March Reuters survey indicate that the majority of analysts expect a 25-basis-point increase in the Fed interest rate up to the level of 5.0% (median of expectations) at the May meeting of the FOMC and then the maintenance of this level of rates till the end of 2006. These experts' forecasts seem to find support in the market expectations of the Fed interest rate changes as reflected in the prices of Fed Funds futures.

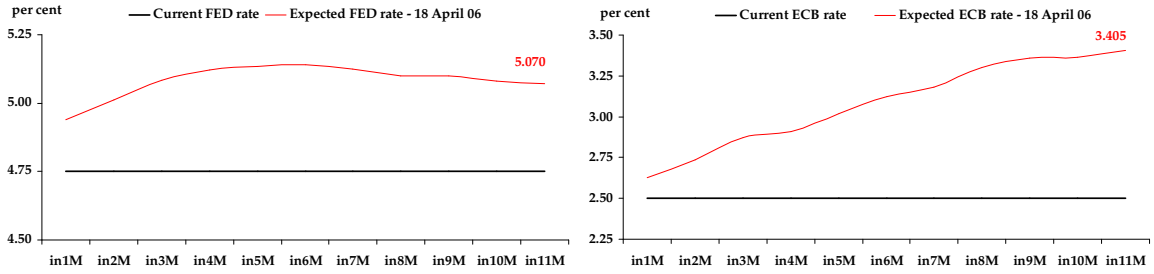


Figure 2.25: Expectations on the FED interest rate changes (on the basis of Fed Funds Futures) (left-hand panel) and expectations on the ECB interest rate changes (on the basis of EONIA swaps – overnight index swaps) (right-hand panel).
Source: Bloomberg data.

The European Central Bank (ECB) at the meeting on 2 March 2006 raised its repo rate by 25 basis points and in April decided to maintain it at the level of 2.50%. Since the beginning of 2006 the yields on European bonds have continued on a rising trend. Towards the end of April the yields on 2-, 5- and 10-year bonds settled at approx. 3.3%, 3.7% and 3.9%, respectively.

The results of the April Reuters survey indicate that the majority of analysts forecast a 25-basis-point increase in the ECB interest rate in 2006 Q2, Q3 and Q4, respectively, (median of expectations) and expect the ECB repo rate to reach the level of 3.25% at the end of 2006. The market expectations for ECB rates as reflected in the quotations of the EONIA swap contracts are close to the forecasts of analysts, and indicate a rise in the ECB rates by 75 basis points by the end of 2006.

2.5.2 Exchange rate

The zloty appreciation, observed since the beginning of 2004, which was a significant driving force behind the decline in inflation, continued in the first two months of 2006. Yet, as a result of the zloty depreciation in March, the monthly average nominal effective exchange rate of the zloty reached in that month the level recorded in December 2005. (Figure 2.26, left-hand panel). Due to the changes in cross rates, this period was marked by the appreciation of the zloty against the American dollar (0.9%) and its depreciation against the euro (0.5%). On the other hand, from 20 February 2006, when the zloty exchange rate started weakening against the euro, to 19 April 2006 the zloty depreciated by 3.4% against the European currency (to the level of 3.90).

In Q1 2006 the correlation between EUR/PLN fluctuations with the euro exchange rate against other Central European currencies increased. The currencies of the four biggest countries of our region, i.e. the Czech Republic, Hungary, Slovakia and Poland (CEC4), strengthened against the euro in the two first months of 2006 (Figure 2.26, right-hand panel). This was connected with a bull equity market in that region, which resulted in portfolio capital inflows, and also with the inflow of direct investment and transfers from the EU. In March 2006, all the above mentioned currencies depreciated against the euro with the Hungarian forint and the Polish zloty registering the strongest depreciation. This resulted from the increasing interest rates in the United States and higher political risk in the CEC4. Thus, the movements in the zloty exchange rate which occurred in Q1 were to a large extent caused by regional and global factors.

The shifts in the value of the Polish currency were also conditioned by domestic factors. The zloty strengthening at the beginning of the year might have been fuelled by market expectations for the exchange by the Polish government of EUR 3 billion derived from the issue of euro bonds. Moreover, the market reacted positively to the adoption of the budget act and the temporary improvement in the political situation after the Stabilisation Pact was signed. However, starting from mid-February political developments led to the deterioration of the foreign exchange market sentiment, which resulted in the depreciation of the zloty. Also contributory to the zloty depreciation were

changes in the disparity of the nominal interest rates. In the first three months of 2006 the NBP interest rates have been reduced by 0.5 percentage point, whereas the ECB interest rates rose by 0.25 percentage point at the same time and the US interest rates – by 0.5 percentage point. Consequently, on 19 April 2006 the Fed interest rates were 0.75 percentage point higher than the NBP rates.

The data available for the period until March 2006 indicate that the changes in the nominal exchange rate were accompanied by similar trends in the real effective exchange rate, deflated with CPI (REER CPI) (Figure 2.26, left-hand panel). A safe current account balance, direct investment and EU fund inflows as well as a good outlook for economic growth should all contribute to the stabilisation of the real zloty exchange rate close to its current level. The expected growth in the foreign interest rates may be a contributory factor in weakening the zloty in 2006. Additionally, the value of the Polish currency will be mainly affected by political developments. Although the sensitivity of the zloty exchange rate to political developments has fallen over the last quarters, it is difficult to assess the durability of this change.

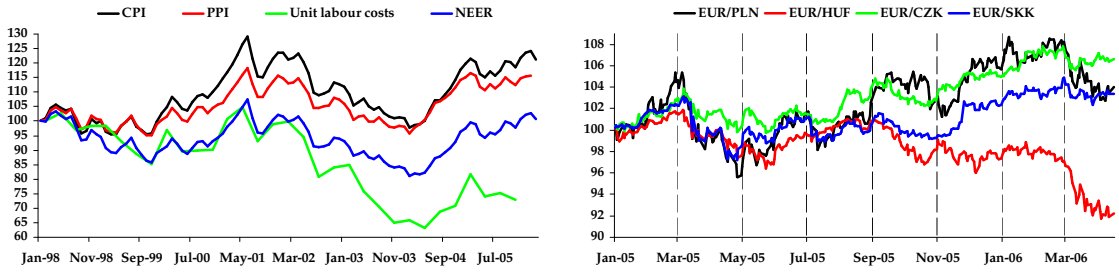


Figure 2.26: Zloty real effective exchange rate (left-hand panel) and nominal exchange rates of Central European currencies against the euro (right-hand panel). Increase denotes appreciation.
Source: NBP, European Commission and EcoWin data.
Note: For unit labour costs (in manufacturing): quarterly data, NBP estimates based on GUS, ECB and European Commission data.

2.5.3 Credit and money

The growth rate in bank loans to the non-financial sector, which in the second half of 2005 remained at the level of approx. 8% y/y, in February 2006 reached 13.2%. Loans to households are increasing faster than loans to enterprises. The dynamic growth in housing loans remains the main growth component in lending to households. Loans to enterprises are growing at a moderate rate.

Corporate sector

After a temporary slowdown, since the beginning of 2006 it has been observed that the moderate rising tendency in the level of corporate indebtedness at banks, originated in mid-2004, is surfacing once again. As at the end of February 2006 the nominal value

of loans granted to enterprises by the banking system amounted to PLN 123.0 billion. The level of foreign currency debt has declined due to the appreciation of the zloty at the beginning of 2006 (Figure 2.27).

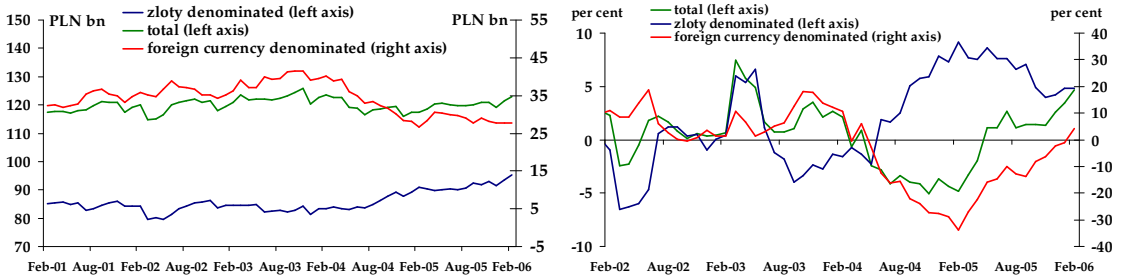


Figure 2.27: Loans to enterprises in nominal terms, with no adjustments for the impact of exchange rate fluctuations. Left panel: outstanding amounts (bn PLN). Right panel: y/y changes (per cent)
Source: NBP data.

Because of a large share of foreign currency loans in the structure of corporate indebtedness[49] the assessment of its changes is made difficult by zloty exchange rate fluctuations. Data adjusted for the impact of exchange rate fluctuations[50] indicate that the rising trend in the volume of loans to enterprises has continued for about eighteen months (Figure 2.28, left-hand panel). Even though an upward trend in the growth rate in total loans to enterprises has been observed since July 2004, it remains on a moderate level starting from mid-2005 (Figure 2.28, right-hand panel). In February 2006 the annual growth rate in corporate lending amounted to 5.3% compared with 1.1% one year before. The growth rate of investment loans has been moderate as well (5.9% y/y), and their level has remained close to that recorded at the end of 2005. In contrast, in January and February 2006 the level of working capital loans and authorised overdraft of enterprises increased, which had the effect of halting the downward trend in the annual growth rate in this category and subsequently led to its rise to approx. 2.2% (Figure 2.29).

Both the data from the banking system on loans and also the results of the NBP survey studies suggest that there has been a drop in the uncertainty of the situation in the corporate loan market signalled in the previous *Inflation Report*[51]. Preliminary results of survey studies addressed at enterprises in 2006 Q1[52] indicate rising corporate interest in incurring new loans in the nearest future. The net balance of the forecasted loan debt (i.e. the percentage of forecasts expecting a rise less the percentage of those predicting

[49] In February 2006 foreign currency loans accounted for 22.6% of all the loans granted to enterprises by commercial banks.

[50] In the later part of this section all numerical data on changes in loans to enterprises and their deposits refer to data adjusted for the impact of zloty exchange rate fluctuations, unless otherwise indicated.

[51] The enterprise survey data available at the time when the January *Inflation Report* was being prepared pointed to expectations for a slowdown in the lending for this sector. At the same time, the senior loan officers surveyed by the NBP expected the growth in loans to enterprises to continue at a moderate level.

[52] *Preliminary information concerning the condition of the corporate sector and the economic climate in the second quarter of 2006*, www.nbp.pl.

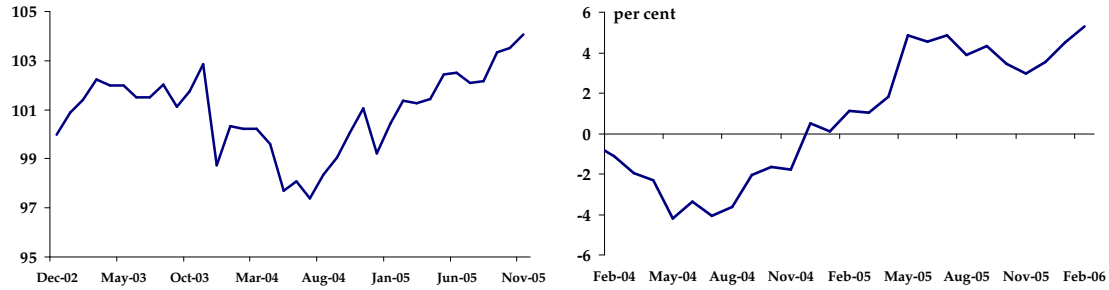


Figure 2.28: Loans to enterprises, data adjusted for the exchange rate fluctuations. Left panel: outstanding loans (index, Dec 2002 = 100). Right panel: y/y changes (per cent).
Source: NBP data.

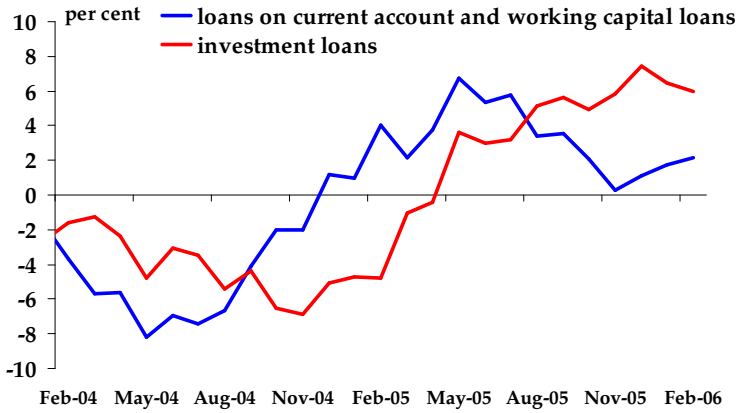


Figure 2.29: Loans to enterprises on current account, working-capital loans and investment loans (y/y growth in per cent), investment loans (m/m growth in per cent). Data adjusted for impact of exchange rate movements.
Source: NBP data.

a fall) rose in 2006 Q1, after a significant decline had been recorded in surveys administered in 2005 Q3 and Q4. Similarly, responses to questions concerning the sources of financing of new investments indicate a possible rise in corporate indebtedness at banks: enterprises report a decreasing role of own funds in financing investments and a rising role of bank loans. However, the declarations of the surveyed enterprises indicating a growing propensity to take out loans have not so far translated into a significant acceleration in the growth rate in loans to enterprises.

According to the results of survey studies addressed at loan committee chairs in commercial banks[53] in 2005 Q5, similarly to the preceding quarter, they felt a moderate rise in the corporate demand for loans. In the first place, this was the demand for funds allocated for investments financing as well as inventories and working capital.

[53] *Senior loan officer opinion survey on bank lending practices and credit conditions (1st quarter 2006)*, www.nbp.pl.

Banks expect that the demand for loans will continue to grow, particularly for the small and medium-sized enterprises. In view of the intensifying competition in the banking sector and improving prospects of future economic situation further easing conditions for granting a loan is taking place, particularly with regard to SME.

The latest data on foreign indebtness of enterprises indicate that the dynamic growth of trade loans (18.0% y/y in 2005 Q4 in euro terms) was continued at the end of 2005, which reflected Poland's growing foreign trade volume. The other debt categories, including debt securities issued by the Polish companies, were growing at a rate similar to the growth of domestic debt (6.5% y/y).

The interest charged on loans to enterprises closely follows the shifts in the NBP interest rates (Table 2.9). In the past few months the level of corporate loan margins dropped slightly, mainly due to the strong competition between banks. Another factor conducive to lowering the margins is the expected high rate of economic growth leading to decline in default risk. The findings of the NBP's survey studies indicate that the cost of credit does not impede the development of corporate activity – in 2006 Q1, similarly to 2005 Q4, only 2.6% of the surveyed enterprises named interest on loans as one of the factors limiting their activity. The real interest charged on loans will be decreasing alongside the expected inflation growth.

	Loans			Deposits		
	total	**households**	**enterprises**	**total**	**households**	**enterprises**
Mar-05	10.0	11.7	8.0	3.7	3.8	3.3
Apr-05	9.6	11.5	7.4	3.4	3.5	3.1
May-05	9.6	11.4	7.3	3.1	3.1	2.9
Jun-05	9.2	11.0	6.8	3.0	3.1	2.8
Jul-05	8.9	10.7	6.6	2.9	3.0	2.5
Aug-05	8.9	10.6	6.5	2.9	3.1	2.3
Sep-05	8.8	10.5	6.4	2.7	2.8	2.2
Oct-05	8.6	10.3	6.3	2.7	2.8	2.2
Nov-05	8.7	10.3	6.3	2.7	2.8	2.2
Dec-05	8.6	10.3	6.3	2.7	2.8	2.2
Jan-06	8.1	9.7	5.9	2.7	2.8	2.3
Feb-06	8.0	9.6	5.8	2.6	2.7	2.1

Table 2.9: Average weighted interest rate on loans and deposits in commercial banks
Source: NBP data.

Corporate deposits at banks are building up fast. Since 2005 Q3 their annual growth rate has been at approx. 20%. The main source of corporate deposits is the good economic standing of enterprises, which is reflected i.a. in their rising revenues, high degree of profitability and a safe level of liquidity. The growth rate of deposits should be contained by the currently observed acceleration in the growth of investment, as – in line with what the enterprises declare in the NBP survey studies – investment will be primarily financed from their own funds. In the longer perspective, it may be expected that the lending volume to enterprises will be increasing. Nevertheless, as it was already mentioned above, these expectations have not found any clear support in hard data from the banking system so far.

Household sector

The growth rate in the bank lending to households remains high since mid-2003. In the first months of 2006 the nominal growth rate of loans to households settled at the level of approx. 25% (Figure 2.30, left-hand panel). Housing loans remain the main component of growth of lending to households. Still more popular than zloty denominated housing loans are the loans incurred in foreign currencies (Figure 2.30, right-hand panel), which at the end of February 2006 accounted for 63.8% of all the outstanding housing loans to households. The rise in the value of consumer loans, which since mid-2004 had been comparable with the rise in housing loans, decelerated at the beginning of 2006.

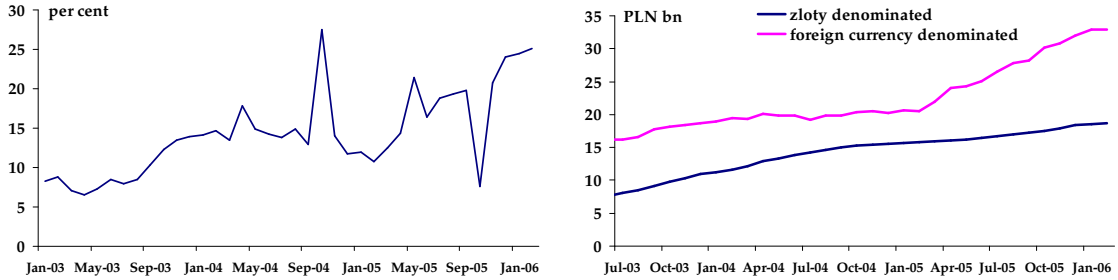


Figure 2.30: Loans to households in nominal terms, with no adjustment for the impact of exchange rate fluctuations. Left panel: total loans to households (*y/y* growth in per cent). Right panel: outstanding amount of housing loans to households – currency breakdown.
Source: NBP data.

Similarly as in the case of enterprises, the zloty exchange rate fluctuations distort the analysis of loans to households, as the significant part of these loans is denominated in foreign currencies. Figure 2.31 presents the annual growth rates of total household loans and also housing and consumer loans in adjustment for the impact of zloty exchange rate fluctuations[54]. The growth rate of housing loans has remained at a high level (43.3% at the end of February 2006), though its rising trend observed since mid-2005 was halted in the first months of 2006. Likewise, the final months of 2005 also brought a halt to the upward trend in the annual growth rate of consumer loans. The lack of growth in consumer loans in the first months of 2006 visible in Figure 2.32 (left-hand panel) may be seasonal in nature – a similar slowdown occurred at the beginning of 2005.

The commercial banks surveyed by the NBP indicate[55] that the currently observed high growth rate of housing loans is stimulated by strong demand on the part of households and also by the measures taken by banks so far to increase the availability of housing loans. In addition, the banks claim that the high demand for housing loans is also related to a good financial standing of households and expectations for further growth

[54] In the later part of this section all numerical data on changes in loans to households and their deposits refer to data adjusted for the impact of zloty exchange rate fluctuations, unless otherwise indicated.

[55] *Senior loan officer opinion survey on bank lending practices and credit conditions (1st quarter 2006)*, www.nbp.pl.

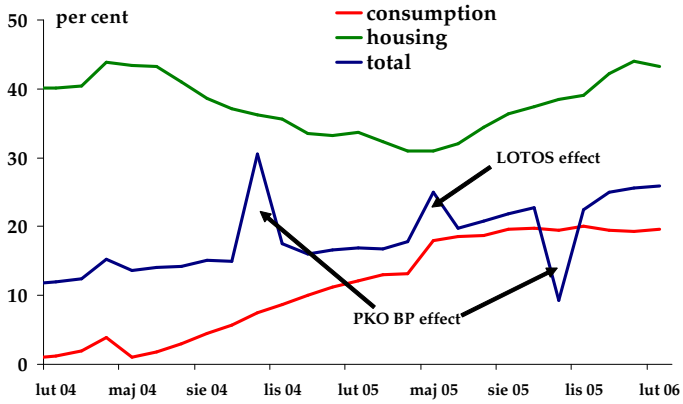


Figure 2.31: Loans to households (*y/y* growth in per cent, data adjusted for the impact of exchange rate movements)
Source: NBP data.

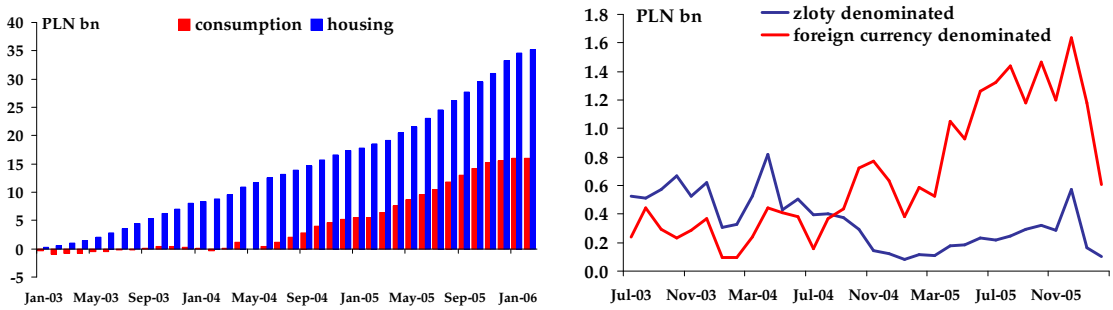


Figure 2.32: Growth structure of loans to households (data adjusted for the impact of exchange rate fluctuations). Left panel: cumulative monthly changes of loans in the period from January 2003. As can be seen, starting from the middle of 2004 the increases of consumer loans are almost equal to those of housing loans. Right panel: monthly changes of zloty denominated and foreign currency denominated housing loans.
Source: NBP data.

in the property prices. The demographic factors also cannot be disregarded here: the boomers born in late 1970s and early 1980s are entering the housing market and the migration from rural areas and towns to large cities is continuing.

An important factor raising the demand for housing loans is the low interest rate – particularly in CHF. The interest on zloty loans is decreasing, following closely the movements of the WIBOR rates. In February 2006 the average weighted interest on zloty housing loans was 5.6%. The reaction of the demand for housing loans to changes in domestic interest rates is limited due to significantly lower interest rates on available foreign currency loans, though the difference is shrinking because of interest rate cuts in Poland and rate rises in the euro area and Switzerland. Nevertheless, housing loans denominated in foreign currencies still attract more borrowers than zloty loans (Figure 2.32, right-hand panel).

The tendency do ease loan granting conditions has been upheld in the segment of consumer loans, which – according to the surveyed banks – is the result of the strong competitive pressure. Similarly, banks do not perceive any drop in demand, despite the interest charged on consumer loans remaining on a high level (14.2% in February 2006). In their opinion the most important reason here is the need of households to finance the purchase of durable goods. The rise in consumer loans is also supported by the good financial situation of households (reported, among others, by the GUS[56]).

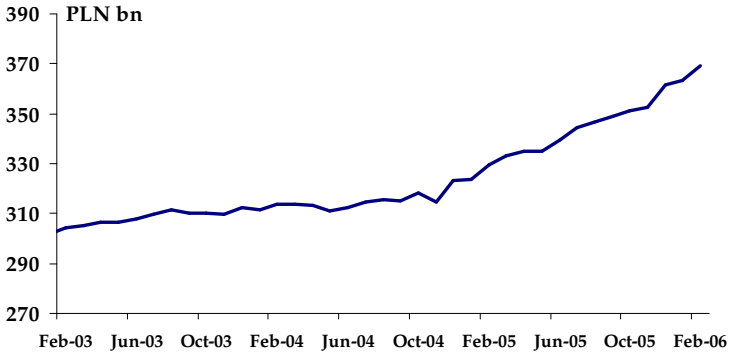


Figure 2.33: Households' financial assets (PLN bn, data adjusted for the impact of exchange rate changes, December 2002 exchange rate relationships).
Source: NBP estimates.

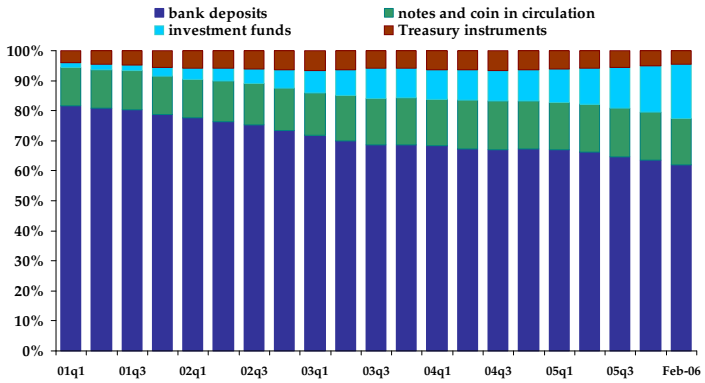


Figure 2.34: Structure of households' financial assets
Source: NBP estimates.

After a seasonal rise in December 2005, in the subsequent months bank deposits of households only edged up. At the same time, households have continued to substitute bank deposits with other financial assets, such as investment fund units. The sum total of financial assets held by households has been on a steep rising path – in February 2006 the growth rate of bank deposits of households, notes and coin in circulation as well as Treasury securities and investment fund units held by households amounted to

[56] *Consumer Sentiment Survey. March 2006*, GUS.

12.1% y/y (Figure 2.33). There has been a continuing trend for changing the structure of financial assets of households: decrease in the share of traditional bank deposits and increase in the share of alternative instruments expanding at their expense (Figure 2.34).

The sustained economic recovery and the continuation of favourable trends in the labour market should be contributing to a further rise in household lending, both housing and consumption loans. It can be expected that, due to the fact that the gap between the interest on zloty and foreign currency loans will be shrinking and banks will be implementing the *Recommendation S* on good practice in the area of mortgage-secured credit exposures issued by the banking supervision at the beginning of 2006, the popularity of foreign currency denominated housing loans will be decreasing.

Monetary aggregates

The above discussed tendencies in the loan and deposit market are reflected in the changes to the main monetary aggregates (Figure 2.35). The nominal annual growth rate of the broad monetary aggregate M3 stabilised at the end of 2005. As at the end of February 2006 it reached the value of 10.8%, which is close to the average level recorded in three preceding quarters. As it was indicated in the previous *Inflation Report*, the rising trend of the annual growth rate of currency in circulation has been halted (it amounted to 11.6% in February 2006). The growth rate of currency in circulation has not been rising despite a considerable acceleration of the annual growth rate in the narrow monetary aggregate M1. This is a result of the ongoing changes in the structure of M1, which have been manifested by the decline in the share of cash in this aggregate observed since November 2005.

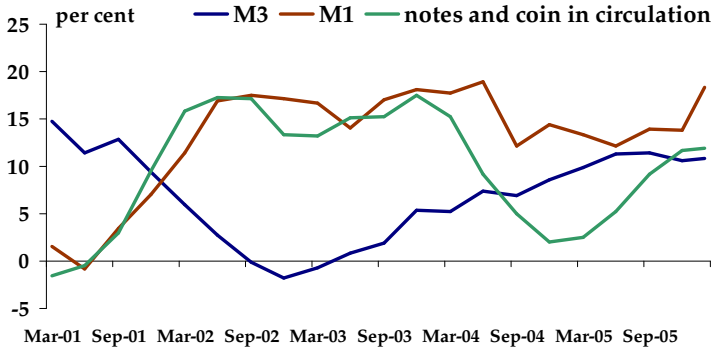


Figure 2.35: M1, M3 and notes and coin in circulation (nominal y/y growth in per cent)
Note: Methodological changes to monetary statistics: adding Credit Unions to Monetary and Financial Institutions (MFI) and excluding banks under the bankruptcy or in the set-up process from MFIs from 2005 on, and adding money market investment funds to MFIs from 2006 on, makes it difficult to compare the 2005 and 2006 figures with the previous years figures. Methodological changes are introduced in order to comply with ECB requirements.
Source: NBP data.

Monetary policy in February 2006-April 2006

The January inflation projection (prepared with the cut-off date of 2 January 2006) indicated that the return of inflation to the target of 2.5% would occur slightly later than it had been expected by the projection from August 2005. At the same time the January projection indicated that in the projection horizon, i.e. till 2008, the output gap will remain negative. In 2005 Q4 and 2006 Q1 both the current inflation rate and the "net" core inflation decreased steadily. This lowering in inflation indices justified the expectations for inflation in 2006 Q1 to run lower than accounted for in the January inflation projection. The opinion which prevailed at the February meeting of the MPC was that the outlook for inflation had changed and so the NBP's interest rates were cut by 0.25 percentage point, i.e. the reference rate to 4.0%, the lombard rate to 5.50%, the deposit rate to 2.50% and the rediscount rate to 4.25%. In March and April the MPC kept the interest rates unchanged.

The data published in February-April 2006 indicated a strengthening of the upward trends in the Polish economy observed since 2005 Q2. The data on national accounts in Q4 confirmed that the economic growth rate had been accelerating since 2005 Q2, revealing a strengthening economic recovery. The GDP growth rate in Q4 was below the expectations presented in the January *Inflation Report*, while the GDP growth structure was largely inconsistent with these expectations. Q4 saw a stronger than expected acceleration of domestic demand (mainly investment demand) and a lower contribution of net exports to GDP. A factor that was encouraging the growth of domestic demand was a rapid growth in lending to households. The data from other sources than the national accounts published in February-March showed that GDP growth in 2006 Q1 would be most probably considerably higher than in 2005 Q4 and consistent with the expectations presented in the January *Report*.

Data available in the analysed period indicated a sustained improvement in labour market situation. Employment was rising both in the corporate sector (rise of 2.7% y/y in March 2006) and in the economy as a whole (2.4% y/y in 2005 Q4). At the same time, the annual unemployment rate was decreasing in year-on-year terms. According to the BAEL (Labour Force Surveys), in line with the expectations presented in the January *Report*, 2005 Q4 saw a continuation in the high growth rate of employment outside pri-

vate agriculture recorded since Q3. This rapid growth was accompanied by an increase in the number of economically active persons.

The accelerated economic growth in 2005 Q4 was matched with a pronounced stepping up in the growth rate of nominal wages in the economy. At the same time, the data on wages in enterprises adjusted for the impact of shifts of one-off components of wages in certain sections of the economy indicated a progressive year-on-year increase in the growth rate of wages in this sector, continuing since 2005 Q3. Amid a lower than expected GDP growth rate in 2005 Q4, the acceleration of the growth rate in wages in the economy indicated a faster than expected in the January *Report* increase in unit labour costs in the economy. At the same time, the rising growth rate in wages in industrial enterprises observed since the second half of 2005 was coupled with a fast growth in labour productivity in this sector.

In 2005 Q3 inflation amounted to 1.6% y/y, in 2005 Q4 it slid to 1.1% y/y and in 2006 Q1 it settled at the level of 0.7% y/y. This low inflation path starting from 2005 Q3 was the resultant of the fading out of price effects connected with Poland's EU accession in 2004, the monetary policy from a few quarters before, the zloty appreciation in 2005, rising contribution of imports from countries with low production costs and intensified competition of producers from these countries. The impact of the above factors overlapped with short-term effects, i.e. a deeper than expected drop in the fuel price growth rate in connection with lowering of distribution margins and a drop in food prices. Moreover, in March the GUS revised the January inflation rate according to the new weight structure used for its calculation. As a result, the rate of growth of consumer prices in January was adjusted downwards by 0.1 percentage point.

Despite strengthening in the recovery of the Polish economy, core inflation measures remained at a low level in January-March. The low "net" inflation indicated that the underlying inflationary pressure was contained in this period. The contained inflationary underlying pressure was accompanied by inflation expectations running markedly below the inflation target with inflation forecasts of bank analysts stabilising at 2.0%.

The analysed period marked a gradual rise in the growth rate of producer prices in industry in annual terms from 0.3% y/y in January to 0.9% y/y in March, which occurred despite a stronger effective exchange rate of the zloty in comparison to the previous year.

Over the period between the Monetary Policy Council's meetings held in January and March 2006, the zloty depreciated mainly due to the impact of global factors. At the same time, in 2006 Q1 the nominal effective exchange rate of the zloty was slightly stronger than the one forecast in the January *Report*.

In the analysed period the most important problems discussed by the Council were the prospects of the sustainability of the labour market recovery, the impact of globalisation processes and commodity price developments on the outlook of economic growth and inflation, the prospects for improving the public finance condition and the short and medium term impact of Poland's accession to the EU on the zloty exchange rate and inflation.

In the reviewed period the Council paid particular attention to the question of changes in the labour market and their impact on inflation. To assess this impact it is essential to answer two questions: (1) Will the observed increase in employment prove sustainable? and (2) What is and what will be the role of demand and supply factors in the rise in the number of working persons? In this context, the discussed issues involved labour market liberalisation, international economic migration and changes in the economic activity ratio. An additional question pertains to the strength of the future anti-inflationary impact of global factors in relation to the past.

The Council also discussed the impact of high oil prices on inflation and economic growth in the short and medium term perspective. The forecats oil prices in the first half of 2006 and in 2008, which were slightly higher than accounted for in the January projection, fuelled the inflationary pressure in the medium term perspective. Price policies of fuel companies, in particular in the area of distribution margins, and the Government's plans concerning the excise tax on fuels continued to be the sources of major uncertainty.

The Council also analysed possible changes in the public finance condition in 2007 and the years to follow, among other things, from the perspective of conditions for the pursuit of monetary policy. The scenario of the fiscal developments presented in the *Convergence Programme Update* of January 2006 implies a gradual narrowing of the sector deficit in relation to GDP in the years 2007-2008. Yet, in the light of the legislative changes concerning public finance, announced by the parliamentary coalition, deviations from the path of the general government sector deficit anticipated in this scenario seem probable. On the one hand, the adoption of the new Public Finance Act assuming, among other things, the public finance consolidation, may increase the transparency of public finance and improve its management, however, the scale of savings may be smaller than expected by the Government (0.8-1.0% of GDP within 2 years). On the other hand, the majority of the announced proposals of changes in the fiscal policy may, if carried out, further widen the public finance deficit. Moreover, the package of tax changes presented by the Government in April 2006 provides for a considerable reduction of income of the public finance sector, yet no information has been released so far about the way in which this budget income shortfall will be compensated. Altogether, the proposed changes increase the risk of the general government sector deficit in the years 2007-2008 exceeding the level presented in the January *Convergence Programme Update*. The fiscal situation in the next years will be largely dependent on the rate and structure of economic growth which determines the income of the public finance sector. Should economic growth prove lower than accounted for in the scenario, the process of narrowing of the general government sector deficit could be hindered or the deficit could even start widening once again. A higher general government sector deficit may boost macroeconomic risk and lead to the zloty depreciation and a higher inflationary pressure in 2007. The scale of the possible zloty depreciation would be limited should the low current account deficit continue. The possible zloty depreciation would also be counteracted by the lower risk premium being the effect of Poland's accession to the EU. Yet, the strength of the impact of those factors on the zloty exchange rate is

difficult to assess. It should be emphasised that ensuring sustainable high economic growth of the Polish economy requires narrowing the budget deficit and reducing the fiscal burden. With this goal in view, measures aimed at reducing public expenditure should be undertaken.

The Council also discussed the prospects of the zloty equilibrium exchange rate developments. The findings of the NBP surveys indicate that the medium term path of the real zloty exchange rate accounted for in the inflation projection may fail to sufficiently account for such fundamental factors as growing demand for Polish exports following Poland's accession to the EU and the inflow of EU funds. Those factors may have pushed the zloty qeuilibrium exchange rate above the average real zloty exchange rate path accounted for in the January projection. This issue will be discussed at subsequent meetings of the Council.

In February 2006 the Council judged that the economic developments coupled with the zloty appreciation and the inflation rate below the January expectations increased the probability of the 2006 inflation running below the level forecasted in the projection. Yet, as a result of time lags between monetary policy decisions and their most pronounced impact on inflation, the medium term inflation prospects are a key determinant of the decisions taken by the Council. In February the Council assessed that in the years 2007-2008 the increase in domestic demand and unit labour costs would gradually bring inflation back to the target. The assessment of the balance of risks for future inflation indicated that the probability of inflation running below the target throughout the horizon of the monetary policy transmission is higher than the probability of inflation exceeding 2.5%. In March, the Council judged that the assessment of inflation prospects, accounting for the impact of the January and February interest rate cuts on inflation and the BAEL data for Q4 indicated that the inflation risks are well-balanced. Such an assessment justified keeping interest rates unchanged.

In line with the NBP inflation projection presented in the April *Inflation Report*, the annual GDP growth will be with 50% probability within the range of 3.9-5.0% in 2006 (as compared with 3.8-5.1% in the January projection); 3.4-5.8% in 2007 (as compared with 3.4-5.2%) and 3.5-6.2% in 2008 (as compared with 3.6-5.5%).

The April inflation projection indicates that the growth rate of consumer prices is likely to be slightly lower in 2006, but in 2008 slightly higher than that expected in the January *Report*. Under constant interest rates, with 50% probability inflation will be within the range of 0.5-2.0% in 2006 Q4 (as compared with 0.5-2.3% in the January projection), 1.3-3.4% in 2007 Q4 (as compared with 1.1-3.6%) and 1.2-3.9% in 2008 Q4 (as compared with 0.8-3.9%).

It should be emphasised that the inflation projection presented in the Report does not account for all sources of uncertainty. This primarily applies to the scale of the future impact of globalisation on inflation, the growth of workforce, the direction of economic policy in the coming years and the exchange rate developments. Besides, the projection was prepared on the basis of data available until 24 March 2006 and thus does not account for crude oil and fuel prices, which are considerably higher than those assumed

in the projection, higher estimates of GDP and wages in the economy in 2006 Q1 and slightly lower than forecasted CPI in 2006 Q1. However, "net" inflation in 2006 Q1 was consistent with the April projection.

The Council maintains its assessment that with large probability inflation will in 2006 Q2 and maybe Q3 remain below the inflation target mainly due to short-term factors. If the developments in the economy were consistent with the April NBP inflation projection, then the current level of the reference rate of the central bank would support a gradual return of inflation to the target over the projection horizon and would also be conducive to keeping economic growth at a pace close to potential output growth, determined by the structural features of the Polish economy. The fact that inflation and core inflation has stayed below the previous forecasts for a relatively long period may be an indication that the impact of the factors which may slow down the returning of inflation to the target in relation to that accounted for in the projection is stronger than previously assumed. Factors which could potentially accelerate the return of inflation back to the target include a higher wage growth than assumed in the projection, provided it would not be accompanied by sufficiently fast increase of productivity, further oil price hikes or a deterioration of the public finance situation in relation to that envisaged in the *Convergence Programme*.

The Council maintains its belief that the most favourable scenario for Poland would be to implement an economic strategy focused on creating conditions which would ensure the introduction of the euro at the earliest possible date, which would be conducive to a higher long-term economic growth.

Projection of inflation and GDP

The projection of inflation and GDP has been prepared with the use of the macroeconomic model ECMOD by a team of NBP economists led by the Director of the Macroeconomic and Structural Analyses Department Adam B. Czyżewski. The NBP Management Board has approved the projection to be submitted to the Monetary Policy Council. The inflation projection is one of the inputs to the Monetary Policy Council's decision-making process. The cut-off date for the assumptions of the projection was 24 March 2006 In consequence, the April projection is based on NBP estimates concerning macroeconomic categories in 2006 Q1.

4.1 Introduction

As it had been declared, the equations of the ECMOD model were re-estimated before the April projection. In the estimation process the data until 2005 Q4, including the revised data on national accounts for 1995-2004, were taken into account. Both the revision in national accounts data and the inclusion of three new quarterly observations had a significant impact on estimation of the parameters of the model's equations. Because of that, the specification of few key equations of the model has changed.

The most important changes in particular equations in relation to the previous version of the model may be summarised in the following way. In the equation of "net" inflation the role of domestic factors (unit labour costs and output gap) has decreased, while the significance of import prices has increased. The long-term exchange rate path has strengthened in relation to the model used for the January projection. The impact of import and export prices on the export volume has weakened, the impact of import prices on import volume has been dalayed, and the impact of exchange rate on export and import prices has lessened. The inertia in wages, in the number of working persons and in the investment has increased. There has also been a rise in investment sensitivity to the current level of economic activity. However, the labour market response to acceleration in economic growth has not changed significantly in relation to the previous version of the model.

The economic growth in the model still results mainly from the increase in labour productivity, while over the last few years an increasing dependence of economic growth on

the growth rate of the number of working persons has been observed. The strengthening in the relation between the rate of economic growth and the dynamics of the employed figure, as well as the persistence of this dependence, were already emphasised in the January *Inflation Report*, while presenting the alternative scenario for the labour market developments. In this scenario it was assumed that a sustainable improvement in the labour market would materialize, i.e. that both high growth in the employment in the economy and a high growth in wages would be maintained. As a result of such a scenario inflation would increase. The resulting inflationary pressure would depend on whether – and to what extent – the growth in employment would be accompanied by the growth in the economically active figure.

New data, which were released after the publication of the January *Inflation Report*, provided arguments speaking for the inclusion of this scenario into the projection. The data also provided evidence that the economically active figure grew faster than was expected in the January projection. On this basis it was assumed that higher than was expected in January growth of the economically active will be maintained in the projection horizon. Introduction of both the alternative scenario and an exogenous increase of the economically active has diminished the expected inflationary pressure related to the alternative scenario as compared to the situation of sticking to the assumptions of the previous projection. The assumptions of the alternative scenario were introduced to the model by appropriate expert adjustments. The operations of the other mechanisms connected with the functioning of the labour market were not corrected. This issue will be revisited in the discussion of the assumptions related to the economic activity of the population, the results of the projection and in the analysis of projection uncertainty - once in connection with the problem of the model's adequacy, and yet again while discussing the uncertainty connected with labour market developments.

The model re-estimation and the introduced modifications have led to changes in the reaction of the model to standard impulses. The most important differences in relation to the previous version of the model include the weakening of reaction to the interest rate impulse, significant weakening of the reactions of inflation and GDP to the exchange rate impulse, and the delay in the reaction of inflation coupled with the strengthening in the GDP response to the fiscal impulse.

Changes in the properties of the re-estimated model reveal that ECMOD is sensitive to changes in data, which is a well-known feature of econometric models. For that reason in the period of structural changes, the statistically correct results of the estimation should be interpreted with exceptional caution. The reason is that measurement errors and subsequent deeper data adjustments are more probable in such circumstances. The uncertainty of the data and significant changes in the properties of the model after re-estimation imply that the interpretation of the projection should not disregard the assessment of the model's adequacy. In case of an econometric model, in order to avoid a noticeable bias in the projection, it is exceptionally important to assess whether the pace of structural changes in the economy and its environment do not lead to significant changes in the assessment of model parameters between the sample

period and projection period[57]. The adequacy of the model is particularly important while interpreting fan charts and the projection's probability distributions, which precisely reflect the uncertainty only when the experts correctly assess uncertainty of the projection assumptions and the model is the completely correct reflection of the reality. In the situation of major structural changes in the economy these conditions may be met only partially. The lower the degree to which these conditions are met, the higher the uncertainty with which future can be discussed on the basis of the model.

For these reasons, the assessment of the forecasting model on merits of its correct replication of economic processes, including inflation, is an important element of the projection's uncertainty analysis. The measurement of uncertainty as presented in the fan chart only refers to parts of the overall uncertainty inherent in making inferences about the future. What is more, this part of the uncertainty was isolated by means of the model itself and on the basis of the model-related and usually strong assumptions, the most important of which being that the model used is actually adequate.

The preparation of the April projection was accompanied by a considerably greater political uncertainty and the ensuing uncertainty whether the directions of economic policy pursued in the sample period would be maintained in the future. As the April inflation projection – similarly to the previous ones – does not account for a policy change, while the risk of a change in the direction of the economic policy in the projection horizon has risen significantly, the present projection is much more conditional in nature (is more uncertain) than the previous ones. The uncertainty of the direction of the shift in economic policy does not seem to be symmetric. Currently, the probability that such a change will lead to deterioration of the outlook for conditions for business activity seems higher than the probability of unchanged or improved business conditions in the projection horizon. These probability should not be disregarded while interpreting the April projection.

4.2 Assumptions for the projection of inflation and GDP

The forecasts of variables exogenous to the model have been updated based on new information available since January 2006. For crude oil and fuel prices the information available till 9 March 2006 was taken into account, while the cut-off date for other exogenous variables was 24 March 2006.

External demand and inflation

In relation to the January projection the current assumptions on the growth in main economic partners of Poland only anticipate a slightly higher growth rate of GDP for

[57] The effects of structural changes are partly eliminated by the expert adjustments introduced to the model, but not all identified effects may be quantified in the expert way.

the euro area in 2006[58]. The assumptions for 2007-2008 have not been modified.

The main reason behind the upward adjustment of the GDP growth in the euro area are clear signals of improvement of demand in this region in 2006:

- high level and dynamic growth of leading indicators of consumer and producer confidence observed for some time now,
- good growth rates of industrial output and new orders recorded in the recent period.

As a result, some external analytical centres slightly adjusted upwards their forecasts for euro-area GDP growth.

Similarly as in the previous projection it is expected that in the nearest quarters the main driving force behind the growth in the euro area should be investment demand fuelled by the rise in production capacity utilisation amid high profitability of enterprises and the level of costs of capital remaining at a low level. It is also assumed that the growth rate of individual consumption will be roughly corresponding to the changes in real disposable income.

The main factors that should be listed among the risks that might lower the path of external demand in 2006-2008 is the possibility of a significant and rapid drop in the US current account deficit and the volatility of commodity prices in the world markets. Other important developments include the changes in prices in the real estate markets and the effects of tax changes in Germany. On the other hand, further improvement in consumer sentiment might lead to a faster growth of external demand.

The fact that the actual annual growth rate of GDP deflators for 2005 Q4 in euro area, Great Britain and the United States proved slightly higher (by 0.1-0.2 percentage point) than the assumptions for the January projection was the main reason behind the slim edge-up in the forecast of the foreign price rise in 2006.

In the projection horizon, the negative output gap and a low growth rate of unit labour costs speak for a low path of foreign inflation. The potential initial and second-round effects of the recent price hikes of oil (and other commodities) and changes in tax rates may all act as pro-inflationary factors.

Foreign interest rates

In the projection horizon, the forecast interest rate abroad is higher (by 0.1-0.2 percentage point) than in the January projection.

[58]In comparison to the January projection, the weights and structure of countries representing the external environment of Poland has been modified. Currently, the structure accounts for the euro area (with the share of 87.8%), Great Britain (7.2%) and the United States (5.0%), which weights are directly proportional to their shares in the Polish foreign trade in 1995-2004. Due to the dominant position of the euro area, the weighted demand and external prices are to a large extent determined by the situation in euro-area countries.

Crude oil, fuel and gas prices

Crude oil prices

As in the previous quarters, the oil price forecast for the April projection is based on the forecasts of the US Department of Energy available at the cut-off date[59]. It also accounts for the forecasts of other major analytical centres (i.a. the International Energy Agency, OPEC).

The oil prices in 2006 Q1 proved higher (at 62 USD/b) than assumed in the January projection (59 USD/b). Most of the forecasting institutes have raised their oil price forecasts for 2006 since the release of the previous projection. In view of the above, the oil price forecast for 2006 has been raised (from 60.3 USD/b to 61.4 USD/b). Due to the fact that the main forecasting centres expect an improvement in the demand-supply relationship in 2007, which is manifested i.a. in lower oil prices in 2007 compared to 2006, the path of oil prices for 2007 has not been changed in relation to the January projection (58.8 USD/b). The adjustment in the forecast for 2008 (from 54.3 USD/b to 56.0 USD/b) results from the February 2006 revision in the long-term forecast of the US Department of Energy.

The current forecast assumes that even though the geopolitical risk will continue to affect oil prices in the later part of 2006, it should not induce any larger disruptions in the supplies of this commodity. At the same time the impact of the geopolitical risk on prices may be alleviated by fundamental factors – it is expected (on the basis of forecasts from March 2006) that the world demand for oil will rise in 2006 by 1.7-1.8% y/y, while the forecasts from December 2005 indicated a higher growth of 1.9-2.3%. On the other hand, the limited oil production and refinery capacities may contribute to keeping future prices at a relatively high level.

The path of oil prices has been on a steep increase since the cut-off date for this commodity (9 March 2006). This surge is primarily the result of the high geopolitical risk and diminishing stocks of petrol in the USA on the brink of the season of frequent travelling. As a result, some analysts raised their forecasts once again[60]. In contrast,

[59]The forecast for 2006-2007 is based on the forecast published in Short-Term Energy Outlook, Energy Information Agency, March 2006, while the change in prices in 2008 in relation to 2007 – on the base scenario of the forecast published in the Annual Energy Outlook 2006, Energy Information Agency, February 2006.

[60]For example: the US Department of Energy published a new oil price forecast on 11 April 2006. It expects that the average WTI oil price in 2006 will amount to 64.7 USD/b, while in 2007 it will fall to 60.6 USD/b. In comparison to the forecast published in March 2006, the 2006 price has been raised by USD 1 (which resulted from the price increase of USD 2.3 in 2006 Q2 and USD 1.3 in 2006 Q3) and the 2007 price remained unchanged. This adjustment resulted from current price increases, brought about – in the first place – by the high geopolitical risk and technological changes in petrol production, which involve replacing MTBE component with ethanol. The assessment of fundamental factors has changed only slightly (the demand growth forecast for 2007 has been lowered from 2.2% to 2.0%, the forecast of the world supply in 2006 has been raised from 1.2% to 1.4%, while the same forecast for 2007 has been reduced from 2.3% to 2.1%).

the assessment of fundamental factors in this period has not been modified in any significant way.

Prices of fuels and natural gas

In relation to the January projection, the change of the path of fuel prices occurred primarily due to accounting for lower actual prices in December 2005-February 2006 and also due to the above described shift of the oil price forecast. The assumptions on the excise tax in the forecast horizon have remained unchanged. In turn, due to the extremely low level of domestic trade margins (calculated as the difference between the retail and wholesale price) and worse than expected financial results of leading Polish fuel concerns, which in the opinion of the industry's analysts result i.a. from the level of margins, the forecast envisages a gradual return of the share of margin in the retail price to its average level. In 2008, an important factor leading to the fuel price growth will be the further growth in excise tax and domestic trade margins.

The joint effect of the introduced changes is the raising of the quarterly path of the average fuel price growth rate in relation to the January projection, and in year-on-year terms - the reduction of this rate in 2006 and its increase from 2007 on.

In 2006 natural gas tariff have been adjusted twice, which led to significant raises of gas prices. In January 2006, the monthly price increase amounted to 4.3%, and it is estimated to reach approx. 11.0% in April. The April change in tariffs is different in nature than those in the recent period – for the first time in three years the gas price increase will result not only from increases in prices of this commodity, but also from raises in transmission charges. In view of the information available in the previous prognostic period, the size of the latter increase comes as a surprise. As the prices of natural gas belong to the category of regulated prices and the actions of regulators cannot always be correctly reflected by a macroeconomic model[61] – particularly when their discretionality is rising – it was decided that, due to the requirement to precisely reflect the path of inflationary processes, in the current prognostic period an expert forecast of gas prices for 2006 would be included in the exogenous path of fuel prices.

Data released after the cut-off date increase the risk of a higher than forecasted path of fuel and gas prices. The main risk is related to the aforementioned strong oil price hikes and the possibility of further oil price increases in the future. In view of the observed rise in petrol prices it cannot be ruled out that the margins will be raised faster than assumed, so that fuel concerns could earlier be compensated for lost revenues, which has a bearing on their financial results and stock exchange valuation. Another risk factor is the increase in the excise tax rate announced by the government (i.e. returning the excise tax rate back to its level before the reduction in September 2005),

[61] So far, the changes in gas tariffs could be reflected by the model much more accurately, as the main premise for rate changes were the rising prices of the commodity. It is also worth emphasizing that from the economic perspective it would not be proper to adjust the model's net inflation path for this effect (as the change has a nature of a shock), though in the statistical sense (*ex definitione*) it will be observed in the net inflation index.

which may take effect from September 2006. Additional rises in gas tariffs are also possible, with probability proportional to the pace of oil price growth. In addition, some information indicates that a rise of the excise tax on liquid petroleum gas is possible from 2007.

Absorption of the EU funds

According to the NBP data the utilisation of the EU structural funds and the Cohesion Fund/IPSA in 2005 reached approx. EUR 1.1 billion, which is consistent with the January projection. The path of effective EU transfers in annual terms in 2006-2008 envisaged in the April projection has not been modified in relation to the January projection.

The NBP's data also indicate that the level of the transfers under the CAP (Common Agricultural Policy) matches the January projection (at approx. EUR 1.8 billion). The path of CAP transfers in 2006-2008 (in annual terms) envisaged in the April projection has not been modified in relation to the January projection. It was assumed that they will amount to EUR 1.95 billion in 2006, EUR 2.05 billion in 2007 and EUR 2.45 billion in 2008. The same quarterly distribution of CAP transfers was adopted for 2006, 2007 and 2008.

Situation in the public finance sector

In line with the principle of not taking into account the changes in economic policy in the projection, which was maintained in the April projection despite the fact that currently the risk of such change is much higher than in the January projection, it has been assumed that the forecasted expenditure of the general government sector only account for the effects of the acts currently in force. The expenditure associated with the old-age and disability pension indexation is forecasted according to the statutory regulations passed by the Parliament in 2004, i.e. indexation by the price growth index in the years 2004-2006 and no indexation in the years 2007-2008.

The forecast of income in the main tax categories has been based on effective rates[62]. All the effective rates, except for the personal income tax rate, have been assumed on their historical levels (the average of 2005 Q4 and 2006 Q1). The effective rate of the personal income tax allows for the abolition of the renovation relief in 2006, which will affect the PIT income in 2007.

Due to the modifications of the tax system planned by the government, which are to become effective from January 2007, there exists a threat of a decrease in public income. In case no measures to limit public spending are introduced, this factor would work in the direction of increasing the general government deficit.

[62]Historical effective rates are calculated by dividing the seasonally adjusted revenue in a given tax category by the appropriate tax base (which is the sum total of seasonally adjusted series). Seasonality does not apply to effective rates. The effective tax rate makes it possible to include a few factors (such as: nominal rate, system of tax relieves and exemptions or share of shadow economy) under one parameter.

It has to be emphasized that the situation of the public finance sector in the projection horizon is particularly vulnerable to economic policy shifts. The risks involved in such changes have not been accounted for either in the central path or in the fan chart. They are discussed in greater detail in the section on the projection uncertainty.

Prices of food and non-alcoholic beverages

The growth of food and non-alcoholic beverage prices in 2005 Q4 proved to be slightly lower than assumed in the January projection, because of the lower actual outcome in December 2005. In view of the data released by the GUS and other centres analysing the situation in agriculture, there were no grounds to change the forecasts of supply and prices of such staple agricultural commodities as cereals, meat and milk in 2006 in comparison with the January forecast.

The assessment of the supply of fruit and vegetables has been reduced in relation to the January forecast due to the considerably colder than average winter in 2006 Q1, which contributed to increased losses in storage and greater problems related to transport. This led to a higher price growth in this group than had been previously expected by experts. This situation, due to the limited supply of new vegetables, may persist till the end of the season.

In contrast, the assessments of the demand for rape and rye in relation to the January forecast have been raised due to a surge in their utilisation in the production of bio-fuels. As a result, the price growth rate of these products is currently assumed to be higher and the prices of plant fats in the second half of 2006 to be slightly higher.

In these conditions the current forecast of the annual food price growth in 2006 Q1-Q4 is slightly higher than that of in January 2006.

After the cut-off date the risk of bird flu materialized in Poland (though no domestic breeding flocks were infected). This contributed to reducing poultry prices by 6.7% m/m in March 2006.

Demographic situation

Number of the economically active

The currently forecasted growth of the number of economically active above the path in the January projection is the result of taking into account the increase in the economic activity ratio from the level of 55.2% in 2005 Q4 up to 56.1% at the end of the forecast horizon (observed the last time in 2000 Q4). As a result, the number of economically active is growing gradually from the level of 17.1 million in 2006 Q1 and amounts to approx. 17.7 million at the end of the forecast horizon.

The economic activity ratio in Poland has been at one of the lowest levels among EU countries and in the assessment of demographers this low level will not be permanent

and will be rising alongside the improvement in the labour market. Because in three subsequent quarters of 2005, for the first time in the BAEL survey history, it has been observed that the rise in the number of working persons had been accompanied by a rise in this ratio, it has been assumed in the projection that it will continue to rise at the rate of approx. 0.3 percentage point each year. While making this assumption, the expected growth in the labour demand was taken into consideration, as it is an important incentive to look for a job and shift from economic inactivity to economic activity[63] The assumed level of the economic activity ratio is consistent with the average growth rate of this ratio recorded in 2005 Q2-Q4[64]. The forecast of the number of economically active (BAEL) has been prepared on the basis of the Eurostat demographic forecast of 2004[65].

It has been assumed for the projection that the increase in the economic activity ratio may in fact be lower than accounted for and will be characterized by higher probability of realization. Nevertheless, the central path of the number of the economically active in the projection has not been modified. The forecast of the number of the economically active is strongly related to the assumption that economic growth will contribute to the creation of new jobs at a growth rate observed in the previous quarters and the currently strong incentives to job seeking will not weaken.

Throughout the forecast horizon it has been assumed that the probability of the economically active figure ranging below the central path is higher than the probability of the opposite event.

Persons working in private farming

It is only for the first time that the forecast of the number of people working in private farming has been prepared for the purpose of the model. The need for isolating this category follows, among other things, from other mechanisms affecting the wages in this sector and outside farming alike, which has been accounted for in the ECMOD

[63]In principle, the economically active figure should be an endogenous variable of the model, dependent on exogenous demographic projections and the economic activity ratio, which is affected by the labour market situation. Unfortunately, forecasting the economic activity ratio is burdened with a significant error and even slight changes in its value have a considerable impact on the assessment of the labour market situation in the projection horizon. For these reasons, the ECMOD model, similarly to many other models of this kind, expresses economic activity as an exogenous variable. If the changes in the labour market are rapid, which is currently the case, then the projection errors related to this assumption may indeed be significant.

[64]The growth rate of the economic activity ratio (0.3% percentage point y/y) is lower than the corresponding growth rate adopted for the European Commission's reference forecast of economic activity (by 0.5 percentage point y/y). The forecasts of the EC, however, systematically overvalued the real growth of the economically activity ratio in Poland, which resulted from their overoptimistic assumption as to the rise in economic activity of people at pre-retirement age (aged 50-59/64).

[65]The previous forecasts were based on the GUS demographic forecast from 2003. Its replacement with the 2004 Eurostat forecast didn't have any significant impact on the forecast size of the working-age population.

model associating the wage increase in the economy with the increase in labour productivity outside private farming[66]. Due to the division of the number of people working in the economy into working outside and in farming, it was possible to isolate seasonal components in the series of people working outside and in private farming, which is favourable to the improvement of the forecast quality[67].

The forecast of the number of people working in private farming has been prepared on the basis on the transition matrix concerning the labour market in the period between 2004 Q2 and 2005 Q2. This matrix was subsequently adjusted for the expected rise in the economically active figure, the probability of labour movement to work outside private farming was increased and the probability of labour movement to private farming was reduced. As a result, the forecast number of people working in private farming is gradually falling and amounts to approx. 2.09 million at the end of the forecast horizon.

A symmetric confidence interval has been adopted throughout the projection horizon. The slower drop in the number of people working in private farming may be the effect of the inflow of funds from the EU which increase the profitability of working in agriculture. On the other hand, a part of the EU funds supports the restructuring of this sector, which in conjunction with the rise in employment in services expected in the projection horizon, may lead to a faster decline in the number of people working in private farming.

Number of old-age and disability pensioners

The forecast of the number of old-age and disability pensioners is based on the results of the forecast of the Polish part of the AWG (*Ageing Working Group*) model[68]. The model proved its good prognostic properties in 2005 Q4 and so in the April projection the forecast path of this variable is identical as in the previous prognostic period. The model indicates that the number of people living off their old-age pensions paid by the ZUS (Social Insurance Institution) and those receiving "uniformed service" pensions will be increasing alongside the growth in the number of people reaching the retirement age, while the number of people receiving early retirement payments, pre-retirement allowances and disability pensions paid by the ZUS, as well as old-age and disability pensions from the KRUS (Agricultural Social Insurance Fund) will be falling. The joint effect of these shifts leads to a drop in the total number of old-age and disability pensioners down to 9.01 million in the forecast horizon.

It has to be emphasised that the actual number of old-age and disability pensioners in the coming years will mostly depend on institutional changes pertaining to legal conditions

[66]Labour productivity outside private farming is defined as the ratio of GDP to the number of people working outside farming.

[67]The seasonality of both series is significantly different.

[68]The AWG model is prepared by EU countries under the supervision of the European Commission. Old-age and disability pensions in the Polish part of the model are forecasted with the participation of specialists from the Social Insurance Institution (ZUS), the Ministry of Labour and Social Policy (MPIPS) and the Market Economy Research Institute (IBnGR).

for early professional deactivation.

4.3 Projection of inflation and GDP

In line with the principle adopted in the previous *Inflation reports*, the projection was based on the assumption that the NBP's reference rate remains constant at the level of 4.0% throughout the projection horizon. The interest rate used in the simulations was 4.1%, equal to the value of 3M WIBOR, calculated on the basis of the yield curve before the projection's cut-off date (24 March 2006). Therefore, the projection based on the model is conditional in nature[69] and should be interpreted as a picture of the developments of inflation and other macroeconomic variables in a situation when the NBP's rates and short-term market rates remained unchanged over the projection horizon, and the exogenous variables evolved as assumed by experts.

Similarly to previous projections, the April inflation projection also accounts for, as already mentioned, no change in economic policy, which is a macroeconomic model condition justifying keeping the model parameters unchanged over the forecast period[70]. The April projection should be seen as a projection of continuation of the so-far existing economic policy. Consequently, the probability of this projection proving true depends on the probability that the economic policy will be maintained (including i.a. the prospects of Poland's euro-zone entry).

The forecasted GDP growth rate clearly exceeds 4% y/y, to reach 5% y/y at the end of the projection horizon, which results from the faster growth in both consumption and investment domestic demand and a negative share of net exports. The main difference in relation to the January projection, i.e. the currently higher growth rate of domestic demand and the GDP, including consumption, stems primarily from the anticipated developments in the labour market, which still remains the crucial element of the projection.

The data from the labour market indicate that the economic growth is to a greater extent based on the utilisation of labour resources, which confirms the forecasts concerning the sustainability of high growth in the number of persons working in the economy, as included in the alternative scenario of the January projection[71].

[69] Each projection is conditional on its assumptions. In this case, the remark on the projection's conditional character emphasises that the assumed maintenance of fixed level of nominal interest rate is not always the most probable event, and in such situations the projection does not show the most probable development of inflation.

[70] The changes in economic policy induce changes in businesses' behaviours and changes in the structure of economy, which imply changes in the model parametres.

[71] The change in the relation between the economic growth and the demand for labour is currently related to the stripping of unnecessary employment in the corporate sector over the years 1999-2001. At present, the output increase in the operating enterprises and those undertaking new business activities as a result of the effected investment (also in the areas of a very high labour productivity) is associated with the increase in the number of economically active persons in the economy.

In the April projection this scenario has in fact become the main scenario. At the same time, the economic activity of the population grew to the extent unanticipated in the January projection, which became the justification for increasing the assumed path of economically active in relation to the previous projection. On the other hand, the functioning of the labour market part of the model showed no significant change after the re-estimation. The economic growth in the model continues to be attributable mainly to the growth in the labour productivity, as this was the case in the estimation sample period. This results in a weak forecasted demand for labour, which in turn does not justify – from the model's perspective – the growth in the economic activity at the assumed scale. The inconsistency between the assumptions on the number of economically active and the demand for labour generated by the model was eliminated by expert-based increase in the demand for labour (on the basis of the relationship between the GDP growth and the rise in the demand for labour observed over the year 2002-2005), decrease in the wage growth rate (on the basis of maintaining model-implied positive relation between the wage growth and the growth in labour productivity) and related diminishing of the total factor productivity[72].However, the negative model-implied relation of wages and the demand for labour is likely to weaken and the growth in employment may be accompanied by the faster wage growth[73].

According to the current forecasts, the employment in the economy will grow at 2.5% y/y in 2006 and 1.4% y/y in the years to follow. With the decreasing employment in agriculture, the employment in the economy excluding agriculture grows at a rate higher by 0.9-0.7 percentage points then employment in the whole economy. Over the consecutive years higher than in the January projection GDP growth is accompanied by lower than in January projection productivity growth in the economy. The growth in labour productivity outside agriculture, which defines the unit labour costs in the inflation equation, is lower by 0.9-0.7 percentage points compared to growth in labour productivity in the whole economy. Since the wages in April projection [74] over 2005-2008 grow at 4.8%, 5.6% and 5.9%, i.e. slightly slower than in the January projection (by 0.2-0.4 percentage points), the projection shows a significant increase in the growth of unit labour costs in the inflation equation, to 3.5% in 2006 and 3.1% in the years to follow. In the April projection the growth of unit labour costs contributes to the growth in inflation to a higher extent than in the January projection, despite lower growth in wages than in the January projection, because the labour productivity grows significantly slower compared to the January projection.

The growth in the demand for labour and in the wages in the economy resulted in the

[72]The diminishing corresponded to the desired decrease in labour productivity in the economy.

[73]The progressive liberalisation of the labour market in the European Union aids at this purpose, accelerating the nominal wages convergence and wage growth in low wage countries.

[74]The growth of wages in the economy is determined in greater extent by the labour productivity outside the agriculture than by the labour productivity in the whole economy because farmers do not obtain wages. The specification of the wage equation has been appropriately adjusted, so that now it is based on the labour productivity outside agriculture. The unit labour costs being an explanatory variable in the inflation equation are constructed as a ratio of wages in the whole economy and labour productivity outside agriculture.

growth in the economic activity of the population unanticipated in the January projection. Those tendencies, considered as sustainable over 2006-2008 under condition of no change in the economic policy holding herein, according to the current projection, are going to provide a clear growth in the employment in the economy, through commencing work by the unemployed, including those in structural unemployment and also through the limited outflow to economic inactivity. The increase in the number of economically active persons adopted in the assumptions to this projection leads to a decrease of the additional inflationary pressure of the alternative scenario[75] compared to the one that would be in place if no increase in the economic activity of population would be assumed. So acts the maintenance of the assumption on the relatively substantial reduction in the structural unemployment rate (NAWRU). The rise in the employment growth in comparison to the January projection, will reduce the unemployed figure and the unemployment rate, which will decline by over 2 percentage points over the projection horizon. However, the substantial growth in the number of economically active persons, not expected in the January projection, will keep the unemployment rate slightly above that projected in January.

The projection of the developments in the labour market and its impact on inflation carries a significant uncertainty. Since it is more likely that the number of economically active persons may rise slower – and not a faster – than it is assumed at present, the inflationary pressure from the labour market probably might also be higher.

Improvement in the labour market, more pronounced than that forecasted in January, along with the sustained fast rate of wages, all add to the high (over 4% in the projection horizon) and slightly exceeding the previously forecasted growth in individual consumption. High consumption growth will also be supported by systematic improvement in the private income of owners, by the increasing inflow of transfers under the Common Agricultural Policy and indexation of old age pensions and disability pensions (the projection accounts only for the indexation scheduled for 2006). Individual consumption rise will be accompanied by a decline in the households' savings rate. The growth in the government consumption will be high (approx. 4%, by 2 percentage points higher than expected in the January projection)[76].

In the present projection, the investments are growing at the rate of 10-11% y/y, i.e. faster than in the January projection by approx. 1.0 percentage point in the first half of 2006 to approx. 3 percentage points in the second half of 2008. The higher growth in investment covers both private sector investment and public investment, financed to a large extent from the UE funds. The results of the present projection may be viewed as a symptom of strengthening of positive trends in the investment processes expected in

[75]Within the model, a rise in the number of economically active persons increases the potential output (lowers the output gap) and limits the wage pressure, as it increases the difference between the unemployment rate and the NAWRU.

[76]The GUS revision of the data on the national accounts had a very significant impact on the government consumption data, increasing both its level and the growth rate. Increase in the government consumption growth is a weighted sum of the growth of employment in the central and local government sector and the growth of intermediate consumption in this sector. Military expenses are also included in this category.

the January projection. The previously-indicated conditions for the strong investment growth in the next years prevail. These include positive prospects for the sale in the domestic and foreign markets, expectated significant inflow of foreign direct investment (accounted for in the projection in a form of expert input), relatively low labour costs and capital costs along with the historically low NBP's interest rates. The reinforcement of those trends in this projection results to some extent from the revision of data on national accounts by GUS. The actual investment growth at the turn of 2005 and 2006, higher than expected in January, was conducive to rising the investment path mainly over the short-end of the projection horizon.

As in the January projection, it is believed that the investment growth path carries a significant uncertainty from the above-mentioned factors, i.e. difficulties in the assessment of the prospective scale of inflow of direct foreign investment, uncertainties as to prospective degree of absorption of the structural funds (uncertainty included in the fan chart) or with the difficult by nature assessment of investment climate's sensitivity to the uncertainty as to the developments of the government's economic policy. This last factor has gained importance since the January projection, increasing the probability of the lower investment path – this not being included in the fan chart.

A rather high growth in exports (8-9% p.a.) and imports (9-10% p.a.) is projected, i.e. the accelerated growth of trade streams vis-a-vis the January projection. On the side of exports, the list of factors fostering this trend will include a slightly better economic recovery forecast of Poland's main trade partners over the January projection. Imports, in turn, it will gain momentum over the January projection due to the anticipated faster growth in consumption and investment. In effect, the net exports' contribution to the GDP will be negative, at a safe level and will slightly deteriorate as compared with the January projection.

When it comes to supply, the main growth factor will still be the total factor productivity, though the role of this component will fall vis-a-vis the January projection to give way to the production property – which is stepping up quite fast due to the accelerating investment – and the employment growing at 1-2%. The growth in production property higher than in the January projection also reflected the revision of historical data on the investments in national accounts, which brought about a rise in the historical ratio of gross fixed capital formation to the capital assets in the economy. Following this revision, the April projection shows that similar growth rates in investment to a higher extent translate into the capital growth. Slower than earlier expected growth in TFP reflected the above-indicated change to the structure of the GDP formation in favour of those types of business activity which increase the productivity more slowly. Potential output is growing slightly faster than in January projection, nonetheless lower than it would result from the investment acceleration and the increase in the economically active persons (labour supply). The output gap will remain negative over the whole projection horizon and will be closing up faster than it was anticipated in the previous forecast. The level of output gap is lower (more negative) over the projection horizon than in the January projection because the level of structural unemployment NAWRU for the sample period was assessed at the lower level than before and its level was

adjusted accordingly in the projection.

The combination of factors affecting net inflation described in the model showed a change in comparison to the January projection. Following the re-estimation of the model, the importance of the domestic factors influencing the net inflation, i.e. unit labour costs and output gap diminished, whereas the imported inflation gained importance in the inflation equation. Since inflation pressure in the model (and in the economy) originates from domestic factors, this change in the parameters leads to the permanent lowering in the inflation pressure in the model. Considering the uncertainty of the data and the scale of shocks which have affected the economy over the recent years, doubts may occur whether the lowering in inflation pressure in the economy, suggested by the model and visible in the lowering the role of domestic factors and monetary policy in influencing inflation will actually prove to be permanent.

At the same time, the April projection reported higher inflationary pressure in comparison to the January projection, which results from high growth in unit labour costs over the projection horizon and pushes net inflation upwards, which is especially visible over the longer horizon of projection. A similar effect on inflation came from output gap which is presently forecast to close faster than in the January projection. The same increase in inflation pressure from domestic factors would lead to even higher projected inflation if it was not for the diminishing effect of those factors in the present model. Over the longer horizon, the increase in net inflation from the domestic factors is reduced by the imports prices, the growth of which is on the decrease to a similar extent as in the January projection, however their weigh in the inflation equation has risen vis-a-vis the January projection.

Inflation projection, which in the first four quarters accounts for the changes in food prices (with the diminishing weighs) and the path for fuel prices shows that until the end of 2006, inflation will remain low. This results primarily from the low growth in food prices and strong exchange rate. In the subsequent quarters, inflation is expected to rise as a result of the sustained high growth of unit labour costs, exchange rate depreciation and closing up of the output gap. From 2006 Q2 until the 2007 Q1, the annual inflation will be also increased by the effected rises in gas prices, as well as – over the longer horizon – the process of increasing trade margins of fuels. In effect, at the beginning of 2007, inflation will be within the deviation band around the inflation target, to reach this target at the end of 2007 and will remain at a similar level until the end of the projection horizon.

Uncertainty associated with the exogenous assumptions of the forecasting model and the inaccuracy of the model's statistical mapping of relations between macroeconomic variables was presented in the fan charts. These fail, however, to include all types of uncertainty, i.a., this associated with possible changes in the structure of the Polish economy, approximate character of the reality reproduction by the model and possible instability of estimated relationships in time. The sources of uncertainty unaccounted for in the fan chart will be discussed in the next subsection.

Fan charts were made under the assumption that the model presents an accurate pic-

ture of economic processes, whereas the uncertainty concerning the assumptions was appropriately assessed and accounted for by experts in the form of deviations from the central path. Under those assumptions, it is possible to assess the probability distributions presented in the fan charts very accurately. Accordingly, it is assessed that until the end of 2007 the probability of inflation remaining below the inflation target will be higher than the probability of inflation running above the target, and next those two scenarios will become equally probable. The projection shows slight asymmetry; it is mixed for the years 2006 and 2007, whereas in 2008 the probability of inflation running above the central projection is slightly higher than the probability that it will remain below the central projection. In fact, the assumptions necessary to calculate probability distributions are either not met at all, or met with some approximation. The approximation employed for considering the model is also applicable for interpreting fan charts and probability distributions. Considering the above, the probability that inflation will exceed the inflation target in the fourth quarter in 2006 is 10%. In the following quarter, the probability inflation exceeding its target quadruples, i.e. it is 40%, and the probability that inflation will be higher than 3.5% amounts to approximately 15%. From 2008 Q1, the probabilities of inflation running above and below the target are very close, whereas the probability that inflation will be higher than 3.5% is over 25%. The calculations of probabilities do not take account of the rise in the overall uncertainty which was reported between the projections, and if accounted for, it would increase the probability of inflation deviating from the target.

The sources of uncertainty presented in the fan chart, which includes only the size and the asymmetry of the deviations of the assumptions from the central path assumed by experts and the model equations error terms estimated over the sample differ in the short (below 1 year) and medium term (i.e. in the horizon of 2-3 years)[77].

In the short term, the uncertainty related to food prices has a dominant impact on inflation uncertainty, while the second strongest factor is the uncertainty concerning the future oil price path. Such a strong impact of those variables on the overall uncertainty of projection stems from the fact that both food prices (directly) and oil prices (indirectly through fuel prices) are included in the CPI basket. The effects of other uncertainty factors are limited due to the rather limited impact of model spillover in the short term. Additionally, an important influence on inflation projection uncertainty is exerted by statistical inaccuracy of the estimations of the "net" inflation and exchange rate equations. In the short term the GDP projection uncertainty is most strongly affected by the uncertainty about variables directly determining economic growth, i.e. the uncertainty as to the path of GDP components, particularly imports and exports.

[77] In case of an increase in the overall uncertainty regarding the future, it is accompanied by the increase in the variance of the error terms of the model equations in the projection horizon above the levels observed in the sample. Accounting for the probable increase in the variance of the error terms of the model equations wouldn't result in any change of the inflation central projection, however inflation running above or below the path would become more probable. In this case the fan chart would be significantly wider. The increase in the overall uncertainty was not accounted for in the presented fan charts.

How should fan charts be interpreted?

Every projection of future values of economic variables is subject to risk and uncertainty. Central banks present the size and scope of quantifiable inflation projection risk through the use of fan charts. The width of the "fan" corresponds to the overall level of risk, which usually changes from quarter to quarter. The further ahead, the wider it gets, as the uncertainty of the assessments of the future usually grows proportionally to the length of the time horizon.

In both inflation and GDP projections prepared by the NBP, probability distribution of their possible outcomes is determined for each quarter. The expected values of distributions are adopted as the central projection. At the same time, 30-percent confidence intervals are constructed around the medians of distributions. These constitute the central band of the fan, indicated with the darkest shade. Thus, the probability of GDP or inflation settling within this band is equal to 30 percent. Next the fan is expanded on both sides so that the probability of the variable running between the extended boundaries increases by another 30 percentage points – 15 points on the above, and 15 on the below. The subsequent extensions create successive bands of the fan marked with increasingly lighter shades. The entire fan represents a 90-percent band of confidence around the medians – there is a 90-percent probability of inflation or GDP running within the fan.

The table below presents some of the properties of inflation probability distributions obtained in the April projection.

	Probability of inflation:				
	below 1.5%	below 2.5%	below 3.5%	below central projection	within (1.5%; 3.5%)
2006q2	0.819	0.997	1.000	0.505	0.181
2006q3	0.785	0.974	0.999	0.501	0.214
2006q4	0.589	0.860	0.973	0.499	0.384
2007q1	0.359	0.645	0.862	0.498	0.503
2007q2	0.374	0.648	0.855	0.504	0.481
2007q3	0.332	0.597	0.820	0.502	0.489
2007q4	0.299	0.536	0.762	0.498	0.462
2008q1	0.286	0.509	0.730	0.498	0.444
2008q2	0.278	0.489	0.709	0.497	0.431
2008q3	0.279	0.487	0.697	0s.498	0.418
2008q4	0.295	0.487	0.682	0.500	0.387

In the medium term the role of particular factors in shaping the uncertainty of the projection presented in the fan chart is changing. In regard to inflation, the uncertainty concerning food prices is still the most significant, yet the relative role of this factor is decreasing, as the significance of factors related to the real sphere economy is

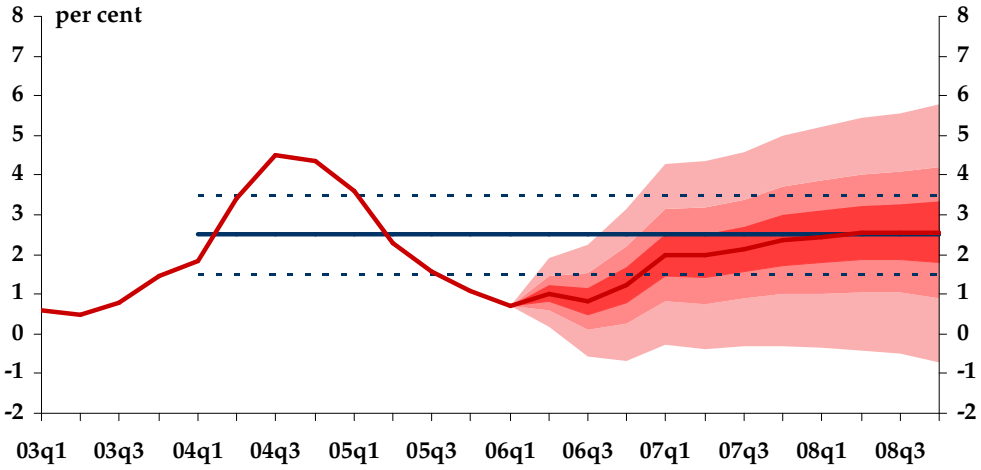


Figure 4.36: Inflation central projection, inflation fanchart and MPC's inflation target (y/y change in per cent)
Source: NBP.

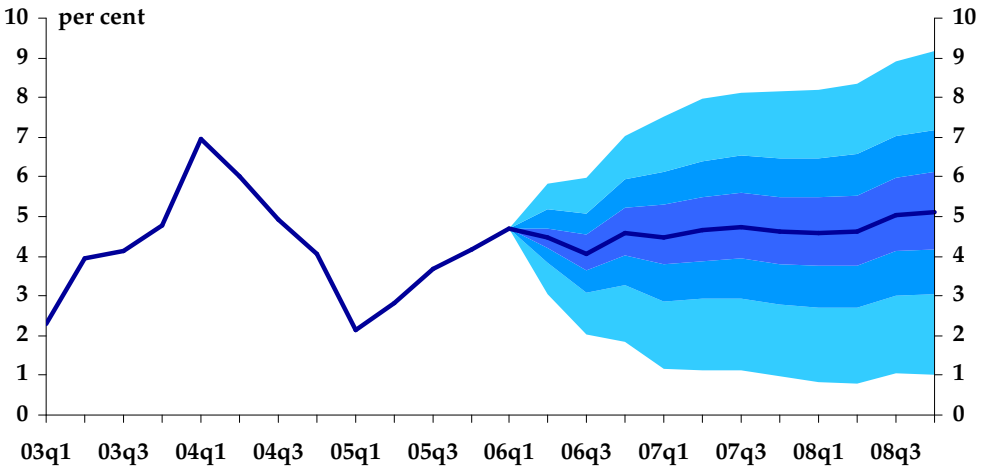


Figure 4.37: GDP central projection and GDP fanchart (y/y change in per cent)
Source: NBP.

increasing. In the medium term, there is a rise in the importance of uncertainty associated with factors affecting inflation indirectly through GDP, primarily the uncertainty related to the paths of imports and exports. An important role is also played by the uncertainty associated with factors indirectly affecting inflation such as the exchange rate, GDP deflator, wages and employment. In the case of GDP, the uncertainty of the projection in the medium term is determined by similar factors as in the short term. Thus, the most important role is played by the uncertainty related to the foreign trade

performance. In the medium term the significance of the uncertainty associated with investment decisions of economic entities is increasing.

Risk of change in central projection

Risk of errors in the projection due to uncertainty concerning statistical data and the model

The results of re-estimation of ECMOD model have shown that the model properties have changed mainly as a result of the backward revision of statistical data on national accounts and, to a lesser extent, due to the extension of the sample. The values in current prices have undergone the biggest changes. As real data have changed only slightly, significant changes concerned the GDP deflator and import and export deflators which constitute important variables of the model. Data for those deflators are used in the estimation of parameters which have significant impact, among others, on the assessment of the exchange rate transmission channel on the nominal and real variables. The strength of this channel, as indicated in the introduction, has weakened following the re-estimation. There is a risk of GUS not having taken due care to ensure adequacy of price deflators during data revision. If so, this weakening of the exchange rate transmission channel to the real economy may not be correctly. Measurement errors and subsequent data revisions are deeper and more probable during the period of structural changes and constitute one of the sources of the model uncertainty. Appropriate reaction would be to treat the results of the model-based projection as less certain, which is not accounted for by the fanchart. To account for data uncertainty, the fanchart would have to be accordingly wider.

Re-estimation of the model parameters has played a certain role in reducing the scale of inflationary pressure. It mitigated the inflationary impact of domestic factors – unit labour costs rising rapidly in the projection and the closing output gap – and increased the inflationary impact of foreign prices, which reduce net inflation in the projection horizon. Such a combination of factors influencing inflation in the sample as reflected in the model parameters (including, in the parameters of the inflation equation) could have been a specific combination which will not replicate in the projection horizon. As it was already attempted to show in discussion of the assumptions and the projection, it is likely that the obtained result is not the effect of permenent changes in the economy and, coupled with statistical data uncertainty, increases the uncertainty of the projection not accounted for in fanchart[78]. It may be assumed that the pace of opening of the economy observed in the last 10-15 years which doubled the degree of openness of the economy and underwent an abrupt acceleration in the years 2004-2005 as a result of the accession, will slow down in the projection horizon. On the other hand, the economic

[78]In order to account for the growing role of external inflation in shaping domestic prices in the sample, a far-reaching change of equation specification is necessary, taking explicite into account the effects of permanent changes in the structure of the economy in contrast to temporary disturbances.

growth is coupled with a progressive increase of the role of non-tradable services in the economy and an increased share of those services in the basket of goods and services purchased by the public (this shares is increased also by the purchases of imported goods and an increasing share of non-tradable services in their price)[79]. Considering the above, the current lesser reaction of inflation to the growth in demand and unit labour costs is likely to be underestimated. This constitutes a risk factor of inflation running above the level suggested by the model-based projection.

Risk of errors in the projection related to estimates of the impact of globalisation on inflation

Some risk for inflation is related to possible overestimation in the re-estimation process of the impact of external factors restraining inflation over the projection horizon. These factors are connected with globalisation processes, that affect the economy mainly through the channel of goods, services and the impact on the labour market. The effects of globalisation of product markets, that may influence the model properties after the reestimation, are connected with the lower prices of consumer goods and services and with the rise of raw material prices, in particular oil. The effects of globalisation of product markets have also a bearing on the increase in the international competitive pressure faced by Polish enterprises and further on the prices of domestic goods and services. The model, after processing rather uncertain data has shown that the intensity of the processes restraining inflation, that may be associated with the effects of globalisation of product markets, has increased between the projections (such is the final effect of the change of parameters of the model after the re-estimation) and this heightened intensity has been extrapolated over the projection horizon. The evaluation of the risk related to inflation in the projection boils down to the assessment of the probability of whether the intensity of the processes restraining infaltion (resultant of the decreasing import prices, increased international competition and rising oil prices) will not change over the projection horizon. Based on the arguments presented above, we assess that there is a risk of overestimating the impact of globalisation on infaltion. It is probable that due to the growth of world economy the import prices will not be falling so quickly. This assessment is supported by the risk of increase in inflation connected with the high oil prices prevailng for a long time already and their further growth.

The effects of labour and service markets globalisation considered in conjunction result in acceleration of the process of labour cost equalizing both on the global and regional perspective (accelearate the nominal wage convergence). The effect of these processes is realocation of service sector jobs from high-wage countries to countries where the

[79]Division of net inflation into the part concerning changes in the prices of goods and tradable services whose prices are influenced by international competition, and part concerning changes in the prices of non-tradable goods and services which are influenced by domestic factors, goes in fact across goods and services since prices of all goods and services are influenced, to a bigger or lesser degree, by domestic factors (the price of imported goods includes a margin which depends on the labour cost and demand).

labour productivity is similar but labour costs lower. The same process that leads in the euro zone to a decrease in service sector jobs and deceleration of wage growth, in the case of Poland, where wages are among the lowest in the European Union and the labour productivity is similar, may act in the opposite direction – contribute to rise in employment in the service sector, acceleration of wage growth and stimulate the inflation pressure. It is difficult to assess to what extent the rise in employment in the service sector and the increased wage growth in the economy already in place in Poland are connected with the process of the acceleration of the nominal wage convergence, since the globalisation of labour and service markets is only in its initial stage, as opposed to the globalization of product markets, and is likely to accelerate. Should this happen, one can expect, on the one hand, the demand for labour in the service sector generated by the foreign demand to rise. On the other, the migrations may increase, reducing the supply of labour. Intensification of both these processes may become a source of a heightened inflation pressure that has not been accounted for in the central projection.

Risk of errors in the projection related to non compling with the *no policy change* assumption over the projection horizon

The inflation projection relies on the adopted assumption of unchanged economic policy in the projection horizon. However, the Government has announced changes in the direction of economic policy pursued so far, and as a result, inflationary impact of potential changes has to be taken into consideration while assessing the risk of errors in the projection as this important factor is not accounted for in the central path of the projection. The risk for the inflation is connected with a probable change in economic policy in the area of social benefits and taxes. The upward pressure on social benefits is likely to intensify even further following the creation of the parliamentary coalition. Should social benefits growth exceed its path accounted for in the projection, one of the implications, apart from budget effects, would be an increased risk of lower economic activity of the population than that accounted for in the projection[80]. A lower actual path of the economically active than it is accounted for in the projection would affect inflation by lowering the potential output, shrinking the output gap and increasing wage pressure. Even though interactions with employment are conducive to weakening of the growth rate of employment and inflation, the net effect of reducing the economically active figure leads to inflation growth. On the other hand, if implemented, the proposal to reduce the tax wedge, which will slightly reduce labour costs for the employers but will bring about an increase of the employees' net wages and disposable income, would increase the risk of faster than forecasted income growth and a risk of inflation running above the path presented in the projection.

The probability of change in the direction of economic policy, which will rise after the formation of the parliamentary coalition, increases the political and fiscal uncer-

[80]There is a certain risk – higher than that accounted for in the fan chart – of lower economic activity of the population than in the projection, even under the assumption of no economic policy changes.

tainty. This factor generates i.a. the risk of increased migration. Increased migration is conducive to increased inflationary pressure in the same way as lowered economic activity of population. This factor is not taken into account in the model and in the path of economically active figure therein presented. The probability of a higher scale of migration increases the risk of inflation increase due to the rise in wage pressure, lowering of the economic potential and steadily increasing growth in wage transfers, which will accelerate the closing of the output gap through increasing disposable incomes of the population. The deterioration in the public finance and postponing the perspective of euro area membership could have negative implications directly for the investment path, exchange rate, and also bond prices. It may be expected that more will be known about the scale of risk of inflation increasing above the projection path in connection with the political and fiscal uncertainty only at the stage of 2007 budget preparations.

Discussion of data released after 24 March 2006

The projection has been prepared on the basis of data available as at 24 March 2006 and so it does not take into account the significantly higher crude oil and fuel prices than those assumed in the projection. The escalating Iran conflict has also been changing the previously assumed distribution of the risk of the forecasts – in the direction of increased probability of further oil price hikes. The data published by the GUS for March 2005 suggest a rise in GDP estimate in 2006 Q1 and the new data on wages and employment in the corporate sector indicate a possibility of faster wage growth than that in the projection with a simultaneous continuation of the high rate of employment growth. CPI inflation in 2006 Q1 proved to be slightly lower than forecasted mainly due to the drop in poultry and fuel prices, while "net" inflation was in 2006 Q1 consistent with its April projection.

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Although the asymmetry of risks presented in the fan chart is only slight, the factors not accounted for in the chart suggest that the risk of inflation running above the central path is higher than the probability of its running below its path. In the short term the dominant factors of inflation projection uncertainty are the markedly higher prices of oil and fuels after the cut-off date. In the medium term, i.e. starting from 2007, the slight upward asymmetry of the fan chart is additionally increased by a rise in the economic activity of population that could potentially prove lower than expert assumptions and a possible rise in wages and income of households that would be faster than presented in the model. The risk of inflation proving higher than the central path of the projection is also heightened by a possible overestimation in the model of the impact of external facors curbing the inflation (including international competition).

In view of the above discussed main risk factors not included the fan chart, we assess that the risk of inflation rising above the central path is currently higher

than in the January projection. Moreover, the projection has been prepared with the assumption of no economic policy changes. The risk realated to not complying with this assumption is another important factor increasing the probability of inflation running above the central path of the projection.

Annex

The voting of the Monetary Policy Council members on motions and resolutions adopted in December 2005-February 2006

- **Date:** 20 December 2005

  Subject matter of motion or resolution:
  Resolution on approving the Financial Plan of the National Bank of Poland

  Voting of the MPC members:

For:	L. Balcerowicz	S. Owsiak	**Against:**
	J. Czekaj	M. Pietrewicz	
	D. Filar	A. Sławiński	
	S. Nieckarz	H. Wasilewska-Trenkner	
	M. Noga	A. Wojtyna	

- **Date:** 20 December 2005

  Subject matter of motion or resolution:
  Resolution amending the resolution on accounting policies, the structure of assets and liabilities in the balance sheet and the profit and loss account of the NBP

  Voting of the MPC members:

For:	L. Balcerowicz	S. Owsiak	**Against:**
	J. Czekaj	M. Pietrewicz	
	D. Filar	A. Sławiński	
	S. Nieckarz	H. Wasilewska-Trenkner	
	M. Noga	A. Wojtyna	

- **Date:** 20 December 2005

  Subject matter of motion or resolution:
  Resolution amending the resolution on the rules of conducting open market operations

  Voting of the MPC members:

For:	L. Balcerowicz	S. Owsiak	**Against:**
	J. Czekaj	M. Pietrewicz	
	D. Filar	A. Sławiński	
	S. Nieckarz	H. Wasilewska-Trenkner	
	M. Noga	A. Wojtyna	

- **Date:** 31 January 2006

  Subject matter of motion or resolution:
  Resolution on the level of the reference rate, lombard rate, deposit rate and rediscount rate of the National Bank of Poland
  MPC decision:
  The MPC lowered all the interest rates by 0.25 percentage point

  Voting of the MPC members:

For:	J. Czekaj	**Against:**	L. Balcerowicz
	S. Nieckarz		D. Filar
	S. Owsiak		M. Noga
	M. Pietrewicz		
	A. Sławiński		
	H. Wasilewska-Trenkner		
	A. Wojtyna		

- **Date:** 28 February 2006

  Subject matter of motion or resolution:
  Resolution on the level of the reference rate, lombard rate, deposit rate and rediscount rate of the National Bank of Poland
  MPC decision:
  The MPC lowered all the interest rates by 0.25 percentage point

Voting of the MPC members:

For:	J. Czekaj	**Against:**	L. Balcerowicz
	S. Nieckarz		D. Filar
	S. Owsiak		M. Noga
	M. Pietrewicz		H. Wasilewska-Trenkner
	A. Sławiński		
	A. Wojtyna		