# Inflation Report
# May 2005

National Bank of Poland
Monetary Policy Council

Warsaw, May 2005

*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 models and has been prepared by a team of NBP economists led by Krzysztof Rybiński, Deputy President of the NBP. 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.*

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# Summary

In the analysed period inflation developments were more favourable than expected in the previous *Inflation Report*. Since the beginning of 2005, the growth rate in prices of consumer goods and services has been decreasing steadily, reaching 3.0% y/y in April. Nevertheless, it still remained above the inflation target (2.5%), although within the tolerance limit for deviations from the target.

The faster-than-expected annual inflation decrease at the beginning of the year was largely driven by changes in the weight structure adopted by the GUS (Central Statistical Office) to calculate the consumer price index. The decline in inflation was also brought about by a higher-than-expected drop in food price dynamics. Pronounced slowdown in the consumer price growth indicates that the temporary factors which boosted inflation in 2004 receded. This also finds support in the developments in core inflation indices which point to the disappearance of the inflationary effects of food price changes on CPI growth.

In line with the NBP's predictions, the analysed period saw a systematic decline in the level of inflation expectations of individuals, which since October 2004 has been lower than the current inflation rate as known at the time of the survey. Inflation expectations are predominantly adaptive in character. Therefore with the inflation decline, a further decrease of inflation expectations may be awaited.

Starting form June 2004 a fast decline in the rate of growth of producer prices in industry has been observed. This was mainly the result of the statistical reference base effect due to a steep increase in commodity prices in the first months of 2004. Furthermore, the appreciation of the zloty in 2004 and 2005 Q1 pulled down export price dynamics.

Gradual improvement in the labour market was accompanied by low wage dynamics. In 2005 Q1 wages in the whole economy rose by 3.6% y/y in nominal terms. A slow growth rate of nominal wages coupled with the still high inflation both had the effect that real wages remained at an unchanged level in year-on-year terms. Average wage increase both in the corporate sector and the economy as a whole has been lower in 2005 than last year. Wage pressure has still been contained by the continuously difficult situation in the labour market, high unemployment in particular. The results of NBP economic climate surveys do not indicate that enterprises would see an increase in wage pressure in the future.

The approximately 12-month period of zloty appreciation has been followed, since March 2005, by a significant depreciation of the Polish currency. In the analysed period the exchange rate level was broadly consistent with the exchange rate path accounted for in the previous *Report*.

Based on GUS preliminary data, it can be assessed that in seasonally adjusted terms 2005 Q1 saw a slight acceleration in GDP growth in quarter-on-quarter terms, albeit smaller than expected in the previous *Report*. The annual GDP growth rate has decreased compared to the previous quarters and amounted to approximately 3%. Lower annual GDP dynamics mainly resulted from a strong GDP growth last year.

Despite sustained uncertainty about the structure of GDP growth, in the NBP's assessment, 2005 Q1 brought a further acceleration of gross fixed capital formation expenditure and the 2004 investment revival proved stronger than suggested by the earlier data. The favourable conditions for sustained investment growth in subsequent quarters of 2005 are reflected, among others, in a still high level of production capacity utilisation in enterprises, increased possibilities of enterprises for financing investment outlays from their own funds and the inflow of EU structural funds. Such favourable development of future investment is also indicated by the quarterly business tendency surveys conducted by the NBP. However, the uncertainty surrounding the public finance reform, the extent of implementation of other necessary structural reforms, and also the uncertainty concerning the economic climate in the mid-term may all bring about some deceleration in the investment revival.

According to the NBP's estimates, a drop in private consumption dynamics recorded in 2004 Q4 was followed in 2005 Q1 by an increase in private consumption to the level slightly lower than that noted in the first three quarters of 2004. The improved consumer sentiment both about the current and future situation, signalled in the GUS business climate surveys, should help maintain consumption demand dynamics at its current level. It should be emphasised that uncertainty about estimates of private consumption and households' income has increased. This results, among others, from the difficulties in accounting for income and expenditure of Poles working abroad, whose number increased significantly following Poland's accession to the EU.

Preliminary estimates suggest that considering the sustained high export dynamics, the contribution of net exports to economic growth continued to be positive. In parallel to the improvement in domestic demand, the coming quarters are expected to bring acceleration in imports and thus a decrease in net exports.

In March-April 2005, the Monetary Policy Council lowered NBP interest rates on two occasions – in March and in April, each time by 0.5 percentage point, i.e. by the total of 100 basis points. At the end of that period, the reference rate stood at 5.5%, the lombard rate at 7.0% and the deposit rate at 4.0%. The justification for the interest rate reductions was the improvement in the balance of risks for future inflation. The balance indicated that in the transmission horizon of monetary policy there was a rise in the probability of inflation staying below target. The April interest rate reduction was accompanied by a change of monetary policy bias from easing to neutral, since

in the Council's assessment, after accounting for interest rate cuts, the probabilities of inflation rate running above and below the inflation target in the monetary policy transmission horizon were similar.

In the Council's assessment, the economic developments in March-May 2005 implied that after accounting for interest rate cuts in March and April, the inflation in the nearest quarters will be lower and then close to the path presented in the February *Report*. This is also confirmed by the May inflation projection. In accordance with this projection, on the assumption of interest rates remaining unchanged, there is a 50-percent probability of inflation staying within the range 1.1-2.2% in 2005 Q4, 1.2-3.8% in 2006 Q4 and 0.7-4.3% in 2007 Q4. According to the projection, the likelihood of inflation running above the inflation target in the monetary policy transmission horizon is considerably lower until mid-2006, and afterwards close to the probability of inflation staying below the target of 2.5%.

In the Council's assessment, the May inflation projection and the currently available data indicate that the balance of risks for future inflation has not changed enough to change the monetary policy parameters. Therefore, in May the Council decided to keep interest rates unchanged and to maintain a neutral monetary policy bias.

# Inflationary Processes

## 1.1 Inflation indicators

In the analysed period inflation was steadily decreasing and in April it stood at 3.0% y/y[1] (Figure 1.1, left-hand panel). The change in the weight structure used for calculating the Consumer Price Index resulted in a relatively large downward adjustment of the inflation rate in January 2005 (from 4.0% down to 3.7%)[2]. This revision partly explains the drop in the annual price dynamics in the analysed period. Additionally, in the first months of 2005 the annual inflation was further reduced by a stronger than expected decline in the food price growth. The significant weakening in the rate of consumer price growth in January-April 2005 points to the disappearance of inflationary impulses recorded in the period preceding Poland's EU accession and in the first months of its membership. In the analysed period inflationary processes appeared more favourable than it had been expected in the previous *Inflation Report*.

The annual food price growth decreased from 7.8% y/y in December 2004 to 3.7% y/y in April 2005. (Figure 1.1, right-hand panel). The downward trend was most pronounced in those groups which had recorded most significant price increases in the previous year (i.e. in meat, sugar and confectionery products and also edible oils and other fats). In 2005, for the first time in the index history (i.e. since 1991) a drop in food prices was observed in the first three months of the calendar year (of 0.3% q/q). In April 2005 there was a slight acceleration in food prices, though it was significantly smaller than it would follow from seasonal factors. Still, even though this category recorded

[1] The following abbreviations will be used throughout the Report:
y/y – analysed period compared to the corresponding period of the previous year
q/q – quarter compared to the previous quarter
m/m – month compared to the previous month.

[2] The weight structure used for calculating the Consumer Price Index is determined on the basis of the structure of consumption spending of households in the year preceding the year under review, as prepared on the basis of household budget analysis. Until 2004 the results of this survey were generalised using the 1999 structure of households. However, since the beginning of 2005 the generalisation of weights has been performed with the use of the structure of households as in the *National Universal Census of Population and Dwellings in 2002*, which recorded a significant rise in the share of small households. The simultaneous change in the structure of household spending, which occurs every calendar year, as well as the modification of demographic structure of households – exclusively in 2005 – resulted in the stronger than usual revision of the overall CPI value in January 2005.

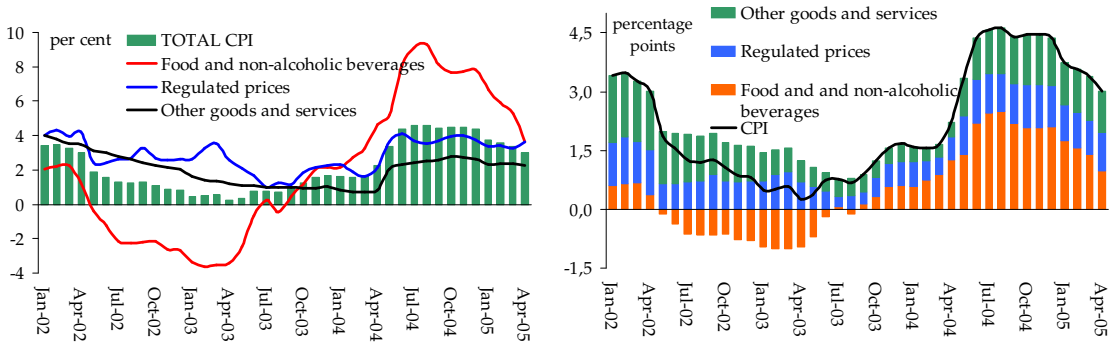


**Figure 1.1:** Consumer price index CPI. Left panel: CPI and main categories of prices. Right panel: CPI breakdown.
**Source:** GUS data, NBP calculations.

a decrease in price growth dynamics in first months of 2005, it was the main factor behind the inflation, as measured with the 12-month CPI, remaining above the inflation target. A further slowdown in the growth of food and non-alcoholic beverage prices will be supported by the favourable situation in the agricultural market in general, and the high crop harvest in 2004/2005[3] coupled with a slowdown in meat prices in particular.

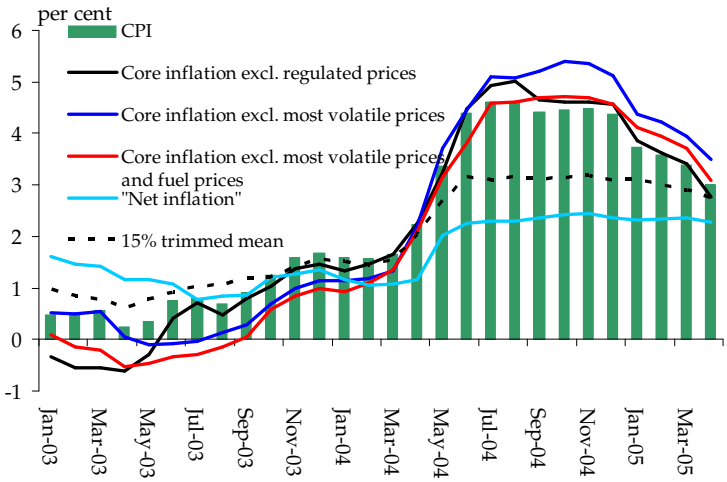


**Figure 1.2:** CPI and core inflation indices (y/y changes, per cent)
**Source:** GUS Data, NBP estimates.

Annual inflation in the group of regulated prices in April 2005 settled at, 3.7%., i.e. its December 2004 level (Figure 1.1, left-hand panel). In the period January-March inflation in this group decreased (to approx. 3.4% y/y), what followed from a decline

[3]Crop harvest in the 2004/2005 season proved 26.7% higher than that in the previous season.

| | 2004 | | | | | | | | 2005 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr |
| **CPI** | **3.4** | **4.4** | **4.6** | **4.6** | **4.4** | **4.5** | **4.5** | **4.4** | **3.7** | **3.6** | **3.4** | **3.0** |
| **Core inflation indices excluding:** | | | | | | | | | | | | |
| Regulated prices | 3.2 | 4.5 | 4.9 | 5.0 | 4.6 | 4.6 | 4.6 | 4.6 | 3.9 | 3.6 | 3.4 | 2.8 |
| Most volatile prices | 3.7 | 4.5 | 5.1 | 5.1 | 5.2 | 5.4 | 5.4 | 5.1 | 4.4 | 4.2 | 4.0 | 3.5 |
| Most volatile prices and fuel prices | 3.2 | 3.8 | 4.6 | 4.6 | 4.7 | 4.7 | 4.7 | 4.6 | 4.1 | 3.9 | 3.7 | 3.1 |
| Food and fuel prices ("net" inflation) | 2.0 | 2.3 | 2.3 | 2.3 | 2.4 | 2.4 | 2.4 | 2.4 | 2.3 | 2.3 | 2.4 | 2.3 |
| 15% trimmed mean | 2.7 | 3.2 | 3.1 | 3.2 | 3.1 | 3.1 | 3.2 | 3.1 | 3.1 | 3.0 | 2.9 | 2.7 |

| | 2004 | | | | | | | | 2005 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr |
| **CPI** | **1.0** | **0.9** | **-0.1** | **-0.4** | **0.3** | **0.6** | **0.3** | **0.1** | **0.1** | **-0.1** | **0.1** | **0.4** |
| **Core inflation indices excluding:** | | | | | | | | | | | | |
| Regulated prices | 1.0 | 1.2 | -0.2 | -0.6 | 0.2 | 0.6 | 0.3 | 0.3 | 0.0 | -0.2 | 0.1 | 0.2 |
| Most volatile prices | 1.1 | 0.0 | 0.8 | 0.2 | 0.3 | 0.8 | 0.4 | 0.3 | -0.2 | -0.1 | -0.1 | 0.2 |
| Most volatile prices and fuel prices | 0.9 | 0.0 | 0.9 | 0.1 | 0.2 | 0.7 | 0.4 | 0.4 | 0.0 | -0.2 | -0.2 | 0.0 |
| Food and fuel prices ("net" inflation) | 0.9 | 0.2 | 0.2 | 0.1 | 0.1 | 0.3 | 0.3 | 0.0 | 0.4 | 0.0 | 0.0 | 0.1 |
| 15% trimmed mean | 0.4 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.1 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 |
| **Core inflation indices - seasonally adjusted (TRAMO/SEATS):** | | | | | | | | | | | | |
| CPI | 0.9 | 0.9 | 0.5 | 0.3 | 0.0 | 0.3 | 0.3 | 0.1 | -0.3 | 0.0 | 0.0 | 0.0 |
| "Net" inflation | 0.4 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |

**Table 1.1:** CPI and core inflation indices
**Source:** GUS data, NBP calculations.

in fuel prices in the domestic market (by 1% in 2005 Q1). However, in April 2004 fuel prices saw a significant rise (of 4.5% m/m), which contributed to the acceleration in the growth rate of regulated prices. Also conducive to the rise in regulated prices in the analysed period were the price rises of energy carriers related to the changes in tariffs[4] and also the increase in the excise tax rate on tobacco products and spirits. In the course of the coming months the growth rate of regulated prices will depend primarily on fuel price developments. Prices in the category of other consumer goods and services[5] in the first four months of 2005 remained broadly unchanged, while their annual dynamics stood at 2.3% (Figure 1.1, left-hand panel)[6].

The significant drop in the price index of consumer goods and services in the first

[4]In the first four months of 2005 the most pronounced growth was recorded in electricity (of 3.4% ).

[5]The group of other consumer goods and services includes the prices of goods and services shaped primarily by market forces and so the group of regulated prices is not included here.

[6]Future dynamics of regulated prices as well as the prices of other consumer goods and services are subject to uncertainty related to the possibility of the excise tax on heating oil being equalled with its rate on diesel oil, and also of levying excise tax on bottled gas.

months of 2005 was accompanied by a decrease in most core inflation indices (Figure 1.2, Table 1.1). Only the 12-month ″net″ inflation[7], just like in the previous months, remained broadly unchanged. A significant shrinking of the gap between the CPI and ″net″ inflation in the analysed period confirms the disappearance of inflationary impact of food and fuel price developments on CPI dynamics, which is particularly visible upon comparison of monthly changes (seasonally adjusted) of both the inflation measures analysed.

## 1.2 Inflation expectations

### Inflation expectations of individuals

In the analysed period, inflation expectations of individual were decreasing steadily, though they stayed slightly above the NBP inflation target (2.5%) (Figure 1.3, left-hand panel).

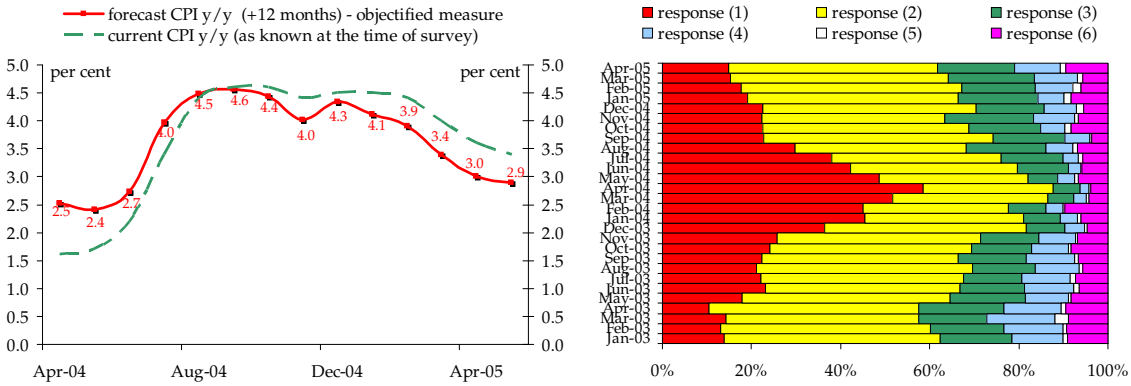


**Figure 1.3:** Inflation expectations of individuals. Left panel: Inflation expected in 12 months. Right panel: Responses to the question asked by Ipsos.
**Source:** GUS data, NBP estimates on the basis of Ipsos data.
Ipsos survey question: ″Considering the present situation, do you think that prices 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?″

The fall in inflation expectations primarily stemmed from the lowering of the current rate of inflation, which is treated by the respondents as a point of reference in formulating their predictions. Also significant here, was the improvement in the break-up of answers to the survey question asked in monthly surveys by Ipsos polling company (Figure 1.3, right-hand panel).

[7]The inflation measure represents CPI net of food and fuel prices.

Considering the dominant role of adaptive factors in shaping individuals' expectations, a further drop in the current rate of inflation should result in a corresponding decrease in inflation expectations.

### Inflation forecasts of bank analysts

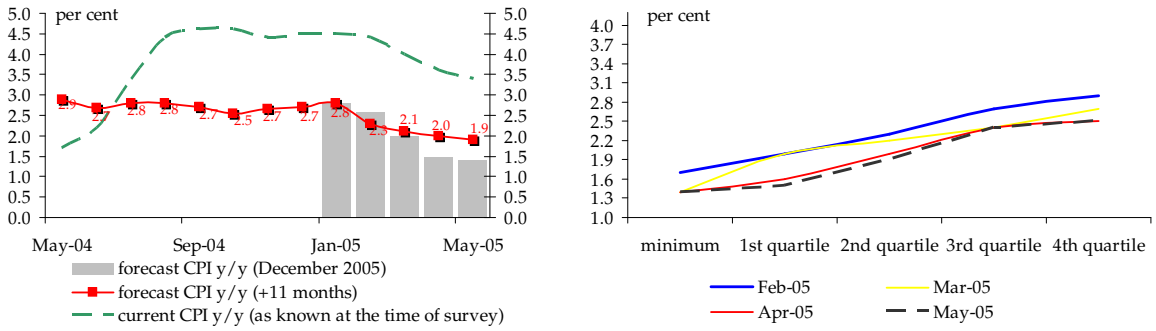


**Figure 1.4:** Inflation forecasts of bank analysts. Left panel: Inflation forecasted in 11 months and inflation forecast for December 2005. Right panel: Distribution of bank analysts' inflation forecasts of the annual inflation rate in 11 months.
**Source:** GUS data, Reuters data, NBP calculations.

In February-May 2005 there was a decline in the analysts' forecasts for the annual inflation 11 months and at the end of 2005. In both cases the forecasts remained below the NPB inflation target of 2.5% (Figure 1.4, left-hand panel). At the same time, the whole distribution of forecasts for the annual inflation rate in 11 months' time shifted towards lower price growths (Figure 1.4, right-hand panel). It has to be emphasised that inflation forecasts for this time horizon are currently standing at their lowest level in Reuters survey history.

## 1.3 Inflation and the Maastricht criterion

The compliance with the Maastricht price stability criterion is one of the conditions of euro-zone accession. The average annual inflation measured with the Harmonised Index of Consumer Prices[8] in a country applying for the membership in the euro area cannot exceed the reference value, which is determined based on the average inflation in the three EU countries with the lowest average annual rate of price growth

[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 (e.g. hospitals, prisons, rest homes) and also expenditure on lotteries. Despite the fact that HICP and CPI baskets have different weight structures, in practice the differences between those two indices are insignificant.

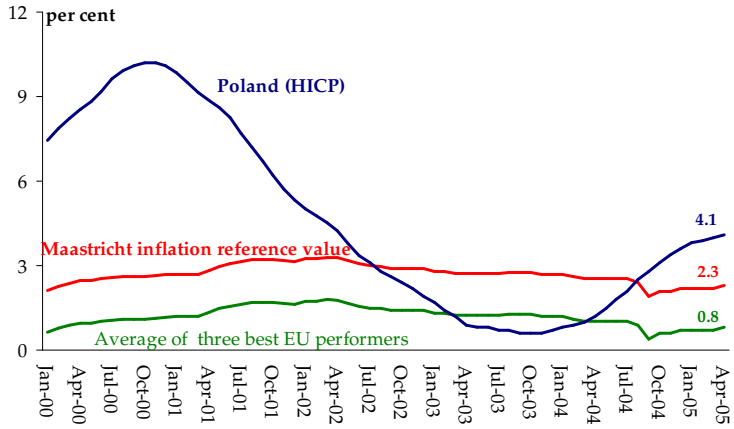


**Figure 1.5:** Inflation in Poland (HICP annual average) and the Maastricht criterion (y/y changes, per cent)
**Source:** Eurostat data, NBP.

plus 1.5 percentage points[9]. Since August 2004 Poland has not been complying with the price stability criterion (Figure 1.5). According to NBP estimates, in 2005 Q2 the annual average inflation will begin to decrease, which will result in a shrinking gap between the price growth rate in Poland and the reference value for the Maastricht criterion.

[9]The judgement whether a given country can be included into the group of countries with the most stable prices or not is made by the European Commission and the European Central Bank (ECB) on a case-by-case basis. According to the position taken by the Commission, presented in the *Convergence Report 2004*, countries which 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 the 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 unclear whether Finland, where the average annual rate of price growth in February and March 2005 stood at 0% and 0.1%, respectively, would be included into the reference group by the European Commission and the ECB (In August 2004 Finland was included in the group of reference countries with inflation at 0.4%). Figure 1.5 presents estimates of the reference value on the conservative assumption that countries with a zero or very low annual average inflation rate could be included into the group of countries with the most stable prices. For more information about the Maastricht criteria see: *A Report on the Costs and Benefits of Poland's Adoption of the Euro*, NBP, 2004.

# Determinants of inflation

## 2.1 Demand

The preliminary data published by the Central Statistical Office (GUS) suggest that 2005 Q1 saw a slight acceleration in the seasonally adjusted GDP growth rate (q/q). However, the annual rate of GDP growth in 2005 Q1 stood at approximately 3% i.e. less expected in the last *Report*. The lower than in the previous quarter annual GDP growth primarily resulted from strong GDP growth in 2004 Q1, which amounted to 6.9% y/y. Lower than last year's annual GDP growth was driven by lower domestic demand growth and lower net export contribution to the GDP growth. The annual GDP growth rate may be expected to accelerate again in the second half of the year after the base effect fades out.

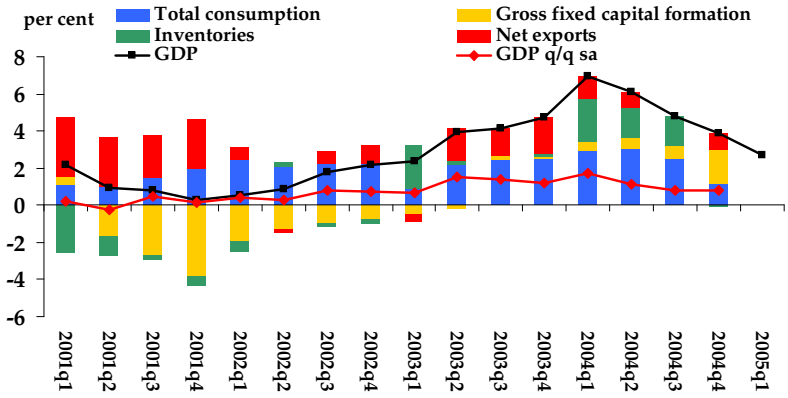


**Figure 2.6:** Contribution of aggregate demand components to GDP growth (per cent)
**Source:** GUS data, 2005 Q1 – NBP estimates.

According to NBP estimates, the dynamics of gross fixed capital formation further accelerated. At the same time, it is estimated that the increase in inventories have been moderate just like in 2004 Q4 and mainly related to production growth. Markedly lower increase in inventories in 2005 Q1, as compared with 2004 Q1 when it was additionally boosted by inventory build-up, means a significantly negative contribution of this component to annual GDP growth. In the NBP's assessment, consumption

| Seasonally adjusted (per cent) | 2003q1 | 2003q2 | 2003q3 | 2003q4 | 2004q1 | 2004q2 | 2004q3 | 2004q4 |
|---|---|---|---|---|---|---|---|---|
| GDP | 0.7 | 1.5 | 1.4 | 1.2 | 1.7 | 1.1 | 0.8 | 0.8 |
| Domestic demand | 0.4 | 0.7 | 1.0 | 1.0 | 1.6 | 1.2 | 1.1 | 1.0 |
| Total consumption | 0.6 | 0.7 | 0.8 | 0.8 | 0.8 | 0.8 | 0.7 | 0.5 |
| Private consumption | 0.7 | 0.9 | 0.8 | 0.9 | 0.7 | 0.9 | 0.7 | 0.4 |
| Gross capital formation | 0.2 | -0.7 | 2.0 | 3.0 | 6.0 | 2.4 | 3.1 | 1.7 |
| Gross fixed capital formation | -0.8 | 0.5 | 0.5 | 0.4 | 1.6 | 1.1 | 1.3 | 1.9 |

**Table 2.2:** GDP and aggregate demand components growth rates (q/q, per cent, seasonally adjusted)
**Source:** GUS data.

growth rate increased, following a strong decline in 2004 Q4, which was related to the earlier than usual date of Easter.

It is estimated that in 2005 Q1 high export growth was sustained and import growth was slightly lower than in 2004 Q4, which was mainly driven by weaker than in 2004 Q4 growth in domestic demand. In consequence, the contribution of net exports to total GDP growth was positive albeit lower than in 2004 Q4.

### 2.1.1 Consumption demand

According to NBP estimates, in 2005 Q1 individual consumption growth stood at a slightly lower level than the one recorded in the first three quarters of 2004, i.e. to around 3% y/y. Household income growth remained the main source of consumption growth in 2005 Q1. According to NBP estimates, in 2005 Q1 the nominal gross household disposable income increased at a pace similar to that observed in the two

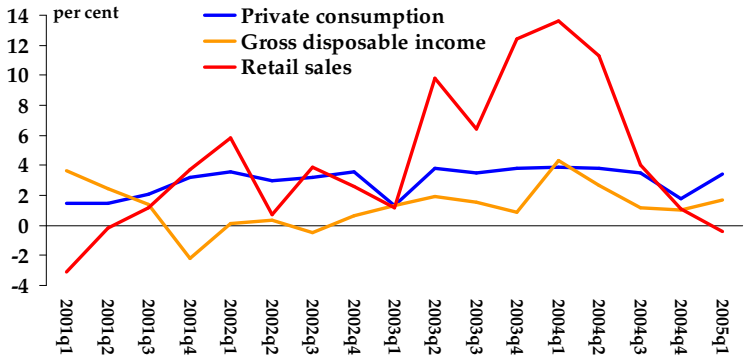


**Figure 2.7:** Growth of private consumption, gross disposable income and retail sales (y/y, per cent, constant prices)
**Source:** GUS data, 2005 Q1 – NBP estimates.

| Change (per cent) | 2004q1 | 2004q2 | 2004q3 | 2004q4 | 2004q1 | 2004q2 | 2004q3 | 2004q4 |
|---|---|---|---|---|---|---|---|---|
| | q/q seasonally adjusted | | | | y/y | | | |
| **Employment in the economy** | 0.0 | 0.0 | -0.6 | 0.0 | -1.3 | -0.7 | -1.6 | -1.2 |
| **Average wage (in nominal terms)** | 3.0 | 0.3 | 1.3 | 1.2 | 4.6 | 4.2 | 5.1 | 5.6 |
| **Average wage (in real terms)** | 2.9 | -1.6 | -0.2 | 0.4 | 3.0 | 1.0 | 0.8 | 1.2 |
| **Payroll fund in the economy (in nominal terms)** | 2.8 | 0.5 | -0.2 | 0.0 | 4.4 | 4.5 | 3.0 | 3.0 |
| **Payroll fund in the economy (in real terms)** | 2.9 | -1.6 | -1.0 | 0.2 | 2.8 | 1.2 | -1.4 | -1.3 |

**Table 2.3:** Growth of employment, average wage and payroll fund in the economy (per cent)
**Source:** GUS data, NBP calculations.

previous quarters. However, as a result of lower growth in consumer prices in 2005 Q1, the purchasing power of this income increased.

It should be emphasised that in the last few quarters the uncertainty surrounding the estimates of individual consumption and household income increased. This results, among others, from difficulties in taking into account the income and expenses of Poles working abroad, whose number has significantly increased since Poland's accession to the EU.

GUS consumer confidence surveys suggest that the improvement in the consumer sentiment started in May 2004 has continued. Households' assessment of changes in their financial situation both in the past 12 months and in the nearest 12 months has been improving. At the same time, the data derived from the consumer confidence surveys suggest that households see better opportunities to increase savings in the coming 12 months. Improving consumer sentiment both about the current and the future situation should help maintain consumption demand growth at its present level.

### 2.1.2 Government demand

In 2005 Q1 the central budget deficit was higher than the one recorded in the corresponding period of 2004 and amounted to PLN 12.7 billion (compared with PLN 11.8 billion last year). According to NBP estimates, the 2005 Q1 deficit reached 5.9% of GDP (an increase of 0.1 percentage point y/y)[10].

In 2005 Q1 the central budget expenditure increased by 12.8% y/y (8.9% y/y in real terms). This rise was mainly driven by higher current expenditure, mainly on wages in the public sector, transfers to private individuals and subsidies paid to local governments. Also the costs of government debt service and funds for co-financing EU-funded projects were higher than last year. Moreover, 2005 Q1 saw an accumulation of payments of the EU membership contribution[11]. After adjusting the budget expenditure

[10] The relation of the central budget deficit to the estimated GDP in 2005 Q1 at current prices.

[11] In 2005, at the request of the European Commission, payments of membership contribution resulting from VAT and own funds calculated on the basis of gross national product, were accelerated. In January and February 2005, the central budget expenditure for the EU own funds accounted for 23% of the value planned for the whole year.

for the EU contribution[12], which had been absent in 2004 Q1, the expenditure was higher by approx. 6.7% y/y (3.0 % y/y in real terms).

In 2004 Q1 due to high indirect tax revenues in January 2005[13] and considerably higher revenues from personal and corporate income tax, the central budget revenues were 15.4% higher than a year before.

Additionally, an important factor driving up domestic demand in 2005 Q1 were continued payments of direct subsidies for farmers made since last December. In 2005 Q1 the amount of payments realised by the Agency for Restructuring and Modernisation of Agriculture, partly financed from the central budget funds, amounted to approximately PLN 3.9 billion (1.8% of GDP)[14].

The increase in domestic demand in 2005 Q1 was also fuelled by the expenditure of the Social Security Fund being in excess of its revenues (in 2004 Q1, the Social Security Fund recorded a surplus of its revenues over its expenditure). It can be estimated that other government sector entities did not register any deficits, due to high revenue growth coupled with moderate expenditure growth. At the same time, local governments are likely to have recorded a surplus since they usually conduct a prudent expenditure policy in the first half of the year and record high deficits in the last quarter[15].

The government deficit in relation to GDP planned for 2005 is supposed to decrease compared with the deficit recorded in 2004. However, its level remains high and thus unfavourable for economic growth. Besides, revenues from privatisation anticipated for 2005 are at risk, which might further increase public debt as a proportion of GDP.

The outlook for public finances in 2006 is burdened by risk resulting from an incomplete implementation of solutions presented in the *Public Expenditure Reform and Reduction Programme* and numerous legislative proposals whose adoption by the Parliament would lead to increasing expenditure and, as a result, widening the general government deficit. This would postpone the fulfilment of the euro-area membership criteria.

The factors increasing the risk of deterioration in public finances may lead to a rise in yields on treasury securities and a depreciation of the zloty and as such they constitute an important inflation risk factor. At the same time, inflation risk will be increased by the pre-election period in Poland.

[12] As a result of the EU accession (since 1 May 2004) in the central budget new items have appeared, both on the expenditure's side (membership contribution, costs of co-financing EU-funded projects), and on the revenues' side (EU budget compensation).

[13] High indirect tax revenues in January 2005 resulted from the shift of the settlement of VAT returns from January 2005 to December 2004.

[14] The amount of direct payments in relation to the estimated GDP in 2005 Q1 at current prices.

[15] Good situation of local governments in 2005 Q1 was also supported by budget surplus of those entities in 2004.

### 2.1.3 Investment demand

According to the latest GUS estimates, gross fixed capital formation in 2004 increased by 5.3% y/y. This data and, in particular, GUS information concerning investment activity in small enterprises, confirm earlier NBP assessments that investment recovery in 2004, in particular in the second half of the year, was stronger than suggested by earlier GUS estimates.

In enterprises employing 50 or more people increased investment activity, observed for two years, continued in 2004 Q4. Throughout the year 2004 investment of those enterprises increased by 9.2%, which resulted mainly from increased outlays on buildings (10.2%) and motor vehicles (25.8%). Outlays on plant and machinery (4.9%) rose at a slower pace, although their growth in the second half of the last year was significantly higher than in the first half.

As suggested by the results of the investment activity surveys conducted in small enterprises (employing from 10 to 49 persons), this group recorded a strong increase in investment (18%), with investment outlays rising considerably faster in the second half of the year than in the first half of the year. In the NBP's assessment, the results of those surveys suggest that the actual fixed capital formation growth in 2004 could have been higher than currently estimated by GUS. Moreover, the preliminary GUS data on investment in small enterprises suggest that the sector of households running private business also recorded a significant increase in the investment demand.

High rise in investment outlays was also recorded in the sector of central and local government institutions. In 2004, investment spending of the central budget increased by approximately 30% in nominal terms while investment expenditure of local governments by over 20%[16]. Particularly strong acceleration was noted in 2004 Q4 where investment expenditure of both central and local governments exceeded the last year's level by over 40%[17]. In both cases the increase in investment demand was fuelled by the initiation of projects co-financed from the EU structural funds.

In the NBP's assessment, in 2005 Q1 there was a further acceleration in investment demand. It is assumed that the acceleration in fixed capital formation growth was experienced by all sectors of the economy, i.e. enterprises, households and central and local government institutions.

The available data suggest that in the coming quarters of 2005 the dynamic investment growth should continue. High degree of production capacity utilisation by firms (although the latest data point to its decline which is most likely caused by increased production capacity as a result of the completion of earlier investment projects) and

[16]The Ministry of Finance does not provide the value of investment expenditures of the central and local government institutions in real terms. Given the deflator of gross capital formation for the economy as a whole (estimated on the basis of GUS data), which in 2004 amounted to 2.1% y/y, it may be expected that the growth of investment expenditures of those sectors in real terms was close to that in nominal terms.

[17]See previous footnote – the estimated deflator of gross capital formation expenditure for the economy as a whole amounted to 3.1% y/y in 2004 Q4.

improved possibilities for financing investment outlays, mainly from firms' own resources, point to favourable conditions for corporate investment. Further revival in investment demand is also confirmed by NBP business condition surveys, which suggest that both the percentage of firms willing to embark on new investment and enterprises intending either to expand or continue their investment process is increasing. In the case of central and local government institutions the increased investment demand will be further fuelled by the implementation of projects financed from the EU structural funds. EU transfers will also help to finance investment of small enterprises, including farms. In the NBP's assessment, there is a positive outlook for Poland attracting new foreign direct investment.

In the longer perspective, investment growth will depend on the investment climate conditional, to a large extent, on future economic policy. The uncertainty surrounding the public finance reform and the extent of the implementation of other necessary structural reforms, as well as the uncertainty concerning economic climate in the mid-term may contribute to some deceleration in the investment revival.

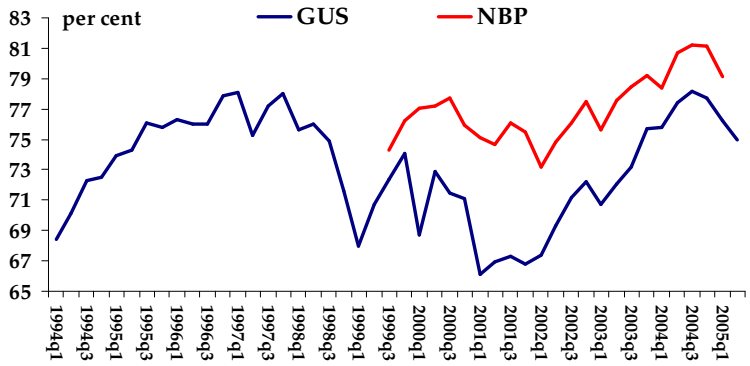


**Figure 2.8:** Production capacity utilisation in industry (GUS) and in the corporate sector (NBP) (per cent)
The difference in production capacity utilisation obtained from the GUS business survey and from the NBP business survey is due to the fact that the two surveys are based on different enterprise samples. The GUS sample includes ca. 2500 enterprises and covers only three sections of industry. The NBP sample, in turn, includes ca. 690 enterprises (in March 2005) 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 business survey, NBP business survey.

### Inventories

In 2004 Q4 high quarterly increases in inventories were caused by economic growth and a rebuilding of inventories, which were diminished during the economic slowdown, to the level desirable from the point of view of current and expected economic activity. GUS data suggest that, in line with previous expectations of the NBP, the process of

inventory rebuilding was completed in 2004 Q3 and since 2004 Q4 the inventories to production ratio has not increased. On these grounds it is estimated that inventory build-up in 2005 Q1, like in the previous quarter, was moderate and consistent with current level of business activity. Due to a very high inventory growth in 2004 Q1, the contribution of this category to the annual GDP growth in 2005 Q1 was strongly negative.

### 2.1.4 External demand and current account of the balance of payments

According to the NBP's data, the beginning of 2005 saw an upward trend in the current account balance. In January-February 2005 this balance was positive and according to preliminary estimates amounted to EUR 195 million (improvement by EUR 290 million y/y). The surplus in the current account resulted from better balance of trade in commodities, which occurred despite a significant rise in oil prices (Figure 2.9, left panel).

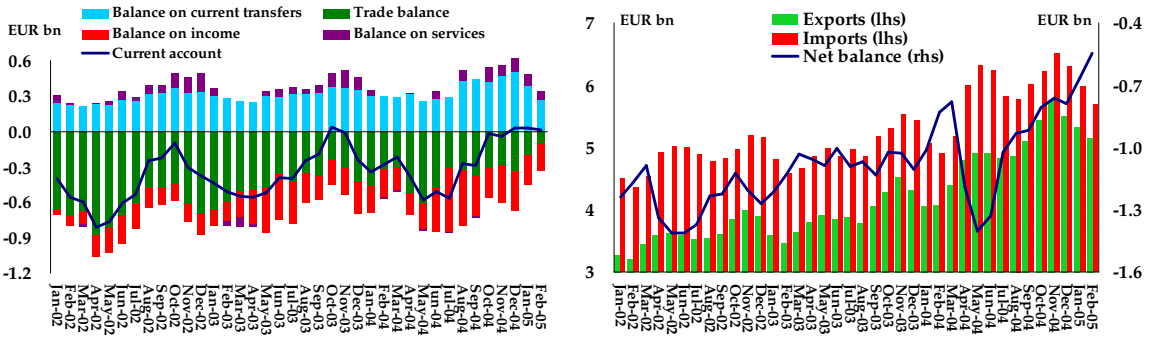


**Figure 2.9:** Polish foreign trade (three-month moving average). Left-hand panel: Current account balance. Right-hand panel: exports and imports of goods.
**Source:** NBP data – left-hand panel, GUS data – right-hand panel.

According to GUS data, Polish foreign trade deficit during the first two months of 2005 amounted to EUR 680 million, decreasing by approximately EUR 500 million compared with the corresponding period of the previous year. Improvement of the trade balance was mainly due to continuing higher growth in exports (increase by 26.8% y/y) than imports (increase by 18.0% y/y).

The improvement in the Polish foreign trade balance was mainly driven by increase in trade surplus with the EU countries. Compared with the first two months of 2004, the surplus of exports over imports with the EU rose by over EUR 340 million. Yet, trade with other countries – despite a strong export growth – is still characterised with high deficit reaching almost EUR 1.5 billion. Its decrease by EUR 165 million in comparison with the first two months of 2004 was mainly the result of very high growth of exports to Russia, which has continued since May 2004.

| | 2003q1 | 2003q2 | 2003q3 | 2003q4 | 2004q1 | 2004q2 | 2004q3 | 2004q4 | 2005q1 |
|---|---|---|---|---|---|---|---|---|---|
| **Export prices / Unit labour costs*** | | | | | | | | | |
| **y/y** | 13.1 | 18.6 | 11.1 | 20.8 | 25.5 | 32.8 | 12.9 | 9.7 | na |
| **q/q** | -1.8 | 9.4 | 5.3 | 6.8 | 2.0 | 15.8 | -10.5 | 3.7 | na |
| **Import prices / Domestic producer prices** | | | | | | | | | |
| **y/y** | 11.3 | 11.4 | 5.2 | 6.0 | 6.4 | -1.2 | -7.3 | -5.3 | na |
| **q/q** | 3.0 | 2.5 | 0.4 | 0.0 | 3.4 | -4.8 | -5.8 | 2.2 | na |
| **REER ULC** | | | | | | | | | |
| **y/y** | -15.0 | -19.9 | -12.7 | -22.8 | -22.5 | -16.9 | -2.6 | 9.0 | 23.7** |
| **q/q** | 1.1 | -10.6 | -6.9 | -8.2 | 1.5 | -4.2 | 9.1 | 2.7 | 15.1** |

**Table 2.4:** 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,
"**" – based on ECB and NBP estimations (ULC for Poland on the basis of GUS monthly data), For REER ULC minus denotes depreciation.
**Source:** Own calculations based on NBP, GUS, EC, ECB and Eurostat data.

High export growth in the first two months of 2005 mainly stemmed from a rise in the sale of transport equipment and machines. Just like in the whole of 2004, export growth in the group was mainly influenced by passenger car sales (although its rise was not as high as in 2004).

2004 Q4 saw a further improvement in cost competitiveness of Polish exporters measured with the relation of transaction prices of exports to unit labour costs. Yet, the changes in the real effective exchange rate deflated with unit labour costs, which were observed in the past two quarters (2004 Q4 and 2005 Q1), signal deteriorating competitiveness of those companies (Table 2.4).

Sustained high export dynamics despite the appreciation of the zloty which has been observed since the beginning of the year results partly from a large part of Polish exports (especially goods classified as machines and transport equipment) being realised as intercompany trade[18], which is not very sensitive to exchange rate changes. Furthermore, the effects of zloty appreciation for importers of metallurgical products and fuel (coal and coke) have been offset by the sustained high demand in world markets, which fuelled further world price hikes[19]. It seems that some exporters willing to keep their markets were prepared to experience a temporary deterioration of their financial results to ensure higher future profits from foreign trade. This is suggested by the increased share of unprofitable export sales in corporate revenues, signalled by the NBP's business tendency survey. Moreover, the NBP's surveys suggest that companies were actively adjusting to zloty appreciation by increasing their competitiveness through reducing costs. 2005 Q1 saw also a rise, compared with the previous

[18]Trade within enterprises which have created regionally integrated production networks.
[19]During the first two months of 2005, the sales in those sections increased by 55% i.e. they grew twice as fast as the total Polish export sales.

| Warning indicator | 2004q1 | 2004q2 | 2004q3 | 2004q4 | 2004 |
|---|---|---|---|---|---|
| Current account balance / GDP* | -1.7% | -1.9% | -2,0% | -1.5% | -1.5% |
| Current account balance plus capital account balance/ GDP* | -1.7% | -1.9% | -1.7% | -1.1% | -1.1% |
| Trade balance / GDP* | -2.4% | -2.6% | -2.6% | -2.3% | -2.3% |
| Direct investment / Current account deficit | 204.3% | 71,0% | - | - | 143.8% |
| Current account balance plus capital account balance plus direct investment / GDP | 1.6% | -0.8% | -0.8% | 3.8% | 1.1% |
| Foreign debt service / Revenue from export of goods* | 33.5% | 27.5% | 26.6% | 26.1% | 26.1% |
| Foreign reserves expressed in terms of monthly import of goods and services | 5.1 | 4.3 | 4.3 | 3.8 | 4.0 |

* calculated yearly

**Table 2.5:** Main warning inidicators
The ratio of direct investment to current account deficit (fourth line in the table) informs about the extent to which current account deficit is financed by capital inflow in form of direct investment. In 2004 Q3 direct investment balance was negative, in 2004 Q4 there was a current account surplus. Hence, in both cases this ratio has no economic interpretation, which is why the respective values are not presented
**Source:** GUS data, NBP data, NBP calculations.

quarter, in export forecast indicator and new export contracts signalled in the NBP's surveys, although it remains at a lower level than the average 2004 level.

In the case of imports, in the first two months of 2005 – just like in the whole of 2004 – the fastest growth was noted in the imports of supply goods. It resulted from a sustained high demand for metals on the part of domestic industry and increase of prices of raw materials. Compared with 2004, imports of consumer goods accelerated. Particularly high import growth was observed in processed foods and consumer durable goods (household appliances, in particular). Yet, growth in imports of consumer goods was low due to the understatement of the official value of second-hand cars imported to Poland. Despite a sustained strong growth in the number of imported second-hand cars, the value of their imports decreased considerably compared with the period January-February 2004. Among major product groups, the lowest import growth at the beginning of 2005 was observed in investment goods.

A factor contributing to import growth may be the deterioration – observed since mid-2004 – in the index of price competitiveness of Polish producers as measured with shifts in the relation of import transaction prices to the index of domestic producer prices in manufacturing (Table 2.4). The deterioration in the so measured competitiveness in 2004 Q4 resulted, among others, from the appreciation of the zloty in this period.

As signalled by the NBP's business tendency survey[20], the exchange rate of the zloty is still cited as the major factor hindering the development of the surveyed enterprises.

[20] *Preliminary information concerning the condition of the corporate sector and the economic climate in the second quarter of 2005*, NBP.

Yet, the percentage of exporters expecting exports to rise, or at least to be maintained at the prevailing level, increased from 76.3% to 82.8%. Moreover, 2005 Q1 saw a decrease in the percentage of exporters for whom the actual exchange rate of the zloty against the euro and the dollar exceeded the declared threshold ensuring profitable exports (for the euro 24.3% in comparison with 32% in the previous quarter, and for the dollar 39.8% in comparison with 62.7% in the previous quarter).

2004 Q4 saw a current account surplus of EUR 0.1 billion. In the whole of 2004, the direct investment to current account deficit ratio amounted to 143.8%. In 2004 Q4 and throughout 2004 all the warning indicators used in the assessment of external imbalance remained at a safe level (Table 2.5).

## 2.2 Output

It may be assessed on the basis of preliminary data for the period January-March 2005 that the value added in 2005 Q1 increased by approximately 3% y/y. The decrease in the annual dynamics of the value added was mainly caused by a slowdown in the rate of output growth in industry observed in the last four quarters. Market services sectors, on the other hand, saw further upward trends. Sustained improvement was also noted in the construction sector (Figure 2.10).

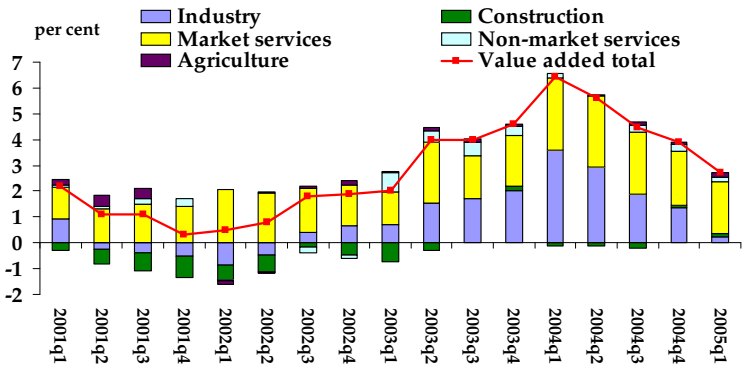


**Figure 2.10:** Sector contribution to annual gross value added growth (per cent)
**Source:** GUS data, 2005 Q1 – NBP estimates.

As expected, 2005 Q1 was dominated by the trends leading to the stabilisation of the level of industrial output. However, in year-on-year terms, a decrease in dynamics was registered by most sections whose sales increased sharply in the first half of the previous year (last year's pre-accession boom). Given the findings of the business tendency surveys, the coming months may be expected to bring stabilisation of the level of output. Although the results of the surveys in industry point to the worsening assessment of the economic situation of enterprises in 2005 Q1, as compared to 2004 Q4, in May 2005 this deterioration has been halted. At the same time, the supply

effects of investment, which in manufacturing have been increasing for 2 years now, will become more and more apparent. This should be conducive to output growth. High probability of the scenario being realised it also confirmed by the positive data on industrial output in April 2005 and the generally favourable (although to a lesser extent that in the previous year) assessments of enterprises about the expected demand. Due to fading out of the base effect, the industrial output growth in year-to-year terms will markedly improve.

| Seasonally adjusted (per cent) | 2003q1 | 2003q2 | 2003q3 | 2003q4 | 2004q1 | 2004q2 | 2004q3 | 2004q4 |
|---|---|---|---|---|---|---|---|---|
| Value added - total | 0.8 | 1.2 | 1.3 | 1.3 | 1.6 | 1.3 | 0.9 | 0.8 |
| Industry | 0.4 | 3.1 | 2.6 | 3.5 | 3.8 | 1.0 | -0.4 | 1.6 |
| Construction | -0.8 | 1.0 | 0.1 | -0.2 | -3.0 | -0.9 | -1.8 | 0.1 |
| Market services | 0.9 | 0.8 | 1.0 | 1.1 | 1.2 | 1.5 | 1.1 | 1.1 |

**Table 2.6:** Value added and its components (q/q seasonally adjusted)
**Source:** GUS data.

2005 Q1 saw further upward trends in market services. The increasing base effect in the retail sales was partly offset by increased purchases associated with the earlier date of Easter, as a result of which the annual growth in this category was similar to that recorded in 2004 Q4. In comparison with the previous quarter, the annual growth rate of wholesale trade and communication services slowed down and the sale of transportation services declined on a smaller scale. According to the NBP's assessment, the growth rate of value added in other market services, in financial intermediation and corporate services in particular, saw a further significant acceleration, which may be linked to the growing investment demand. Favourable signs from business tendency surveys point to the continuation of upward trends in market services.

In 2005 Q1 and in April 2005 the revival in the construction industry strengthened (partly halted by unfavourable weather conditions in March). In 2005 Q1 particularly strong acceleration was noted in investment-type construction works. The increase in renovation projects was noted, albeit on a lesser scale than in the previous quarters. Given the very optimistic signals visible in GUS business tendency surveys, upward trends in the construction sector may be expected to continue in the nearest future. It is also suggested by a strong increase in works observed in construction site development companies. Other factors that will be conducive to the recovery in the construction sector include infrastructural investment within the EU co-financed projects and also positive business climate in housing construction[21].

[21] In April 2005 output in construction and assembly declined by 17.7% y/y, which was, however, due to a very high reference base, i.e. it resulted from a very strong growth in construction in April 2004, when its annual rate of growth amounted to 25.9%

## 2.3 Labour market

### 2.3.1 Employment and unemployment

According to BAEL data in 2004 Q4 a rise in y/y growth rate in the number of working persons in the economy was observed. The figure[22] was 335 thousand higher than a year before (an increase of 2.5% in comparison to 1.7% in 2004 Q3). The rise in the number of working persons was primarily visible in industry, the service sector and, to a lesser extent, in agriculture (Table 2.7). There has been a continuation of the tendency visible in the previous quarters in that the rise in employment relates almost exclusively to people working on a fixed term contract. The number of permanent-contract employees has been continuously decreasing, though the scale of this decrease is smaller than in the previous quarters (Table 2.7). Analysis of earlier data suggests that the increase in the share of flexible contracts in all job contracts is probably of permanent nature[23].

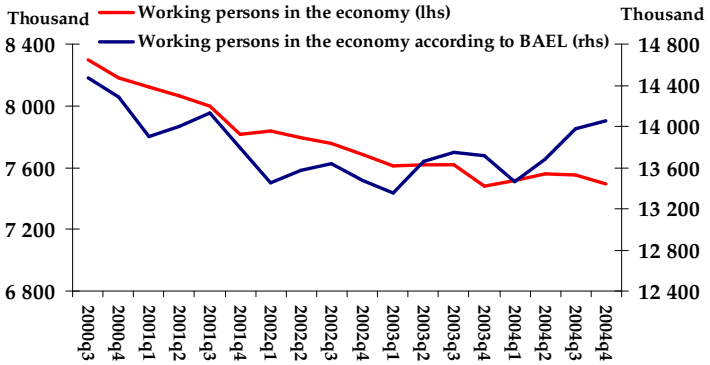


**Figure 2.11:** Working persons in the economy – according to BAEL and entities with more than 9 employees
**Source:** GUS data.

In 2004 Q4 – for the first time since 1999 – a positive annual dynamics of number of working persons in the economy, according to reports submitted by entities with over 9 employees, was recorded. The increase may be narrow (15 thousand, i.e. 0.2% y/y), but the rebound came after a long period of decline and so it confirms the positive tendency already visible in BAEL data (Figure 2.11).

A gradual rise in employment is also seen in the enterprise sector data. In April 2005 employment in enterprises was 1.7% higher than a year before (Figure 2.12). The leap in enterprise sector employment between December 2004 and January 2005 stemmed mainly from the fact that from January 2005 on the GUS took into account a greater

[22]For definition of the working persons according to BAEL (Labour Force Survey) see: *Quarterly Information on the Labour Market, GUS.*

[23]Since 2001 the number of people employed on a fixed term contract has risen by approx 2 million, while the number of employed on a permanent contract shrank by roughly the same figure.

| | Number of working persons in 2004q4 (thousands) | Growth in 2004q3 (y/y) | Growth in 2004q4 (y/y) |
|---|---|---|---|
| **Total** | 14 058 | 1.7% | 2.5% |
| **Place of residence** | | | |
| urban areas | 8 573 | 2.2% | 2.9% |
| rural areas | 5 485 | 0.8% | 1.8% |
| **Economic sector** | | | |
| agriculture | 2 555 | 1,0% | 0.7% |
| industry | 4 047 | 1.4% | 3.2% |
| services | 7 452 | 2.1% | 2.6% |
| **Ownership sector** | | | |
| public | 4 184 | -4.5% | -3.3% |
| private (excluding farms) | 7 499 | 5.7% | 6.8% |
| private (farms) | 2 377 | 1.2% | 1.7% |
| **Employment status** | | | |
| hired employees | 10 295 | 1.8% | 3.6% |
| employers and self-employed | 2 956 | 0.9% | -2,0% |
| contributing family workers | 807 | 2.1% | 2.4% |
| **Type of job contract** | | | |
| fixed-term contract | 7 829 | -2.4% | -0.4% |
| permanent contract | 2 466 | 18.7% | 18.4% |

**Table 2.7**: Working population according to BAEL in selected sections
**Source**: BAEL data, NBP calculations.

number of enterprises with over 9 employees[24]. This means that the employment in small enterprises in 2004, was only revealed in January 2005.

A gradual improvement in the labour market is also indicated in data on unemployment. Although the jobless figure remains high, its slow but steady decline can be observed for several quarters. Both the data from labour offices and BAEL indicate that the unemployment is currently noticeably lower then one year ago. According to labour offices´ data, in March 2005 the jobless total was 3,053 thousand (a y/y decrease of 213 thousand), and the unemployment rate amounted to 19.3% (a y/y drop of 1.1 percentage point). In turn, according to BAEL data, in 2004 Q4 there were 3,081 thousand unemployed (a decrease of 192 thousand y/y), and the rate of unemployment was equal to 18.0% (a y/y fall of 1.3 percentage point). Since mid-2003 the number of new job offers filed in labour offices has remained stable, while the share of unfilled vacancies has been increasing. This may point to the mismatch between the expectations and qualifications of job seekers on the one hand and the vacancies on the other.

The improvement of the outlook for the labour market can also be observed in both NBP and GUS economic climate surveys. In 2005 Q2 according to NBP survey[25] the number of enterprises intending to reduce their workforce equals the number of those

[24] At the beginning of each year, the GUS adjusts its sample of enterprises with over 9 employees, which then serves as the basis for estimating employment in the enterprise sector. The new sample is enlarged to include those enterprises whose employment exceeded the threshold of 9 people in the previous year.

[25] See: *Preliminary information concerning the condition of the corporate sector and the economic climate in the second quarter of 2005*, NBP.

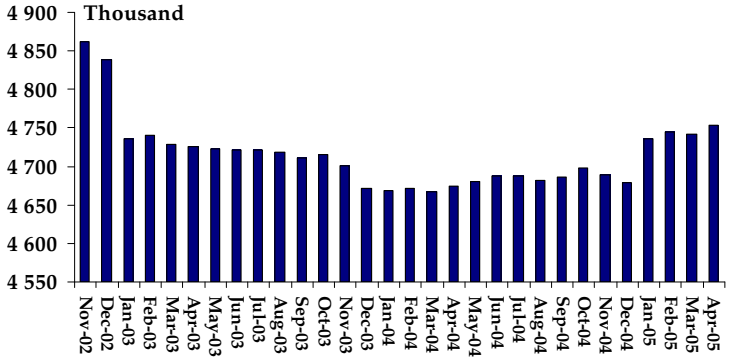


**Figure 2.12:** Employment in the enterprise sector
**Source:** GUS data.

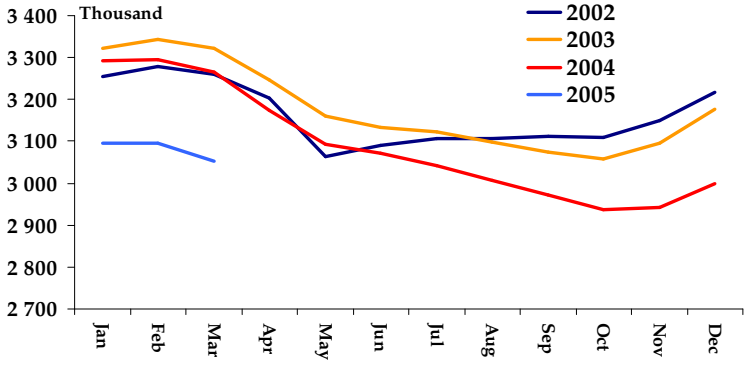


**Figure 2.13:** Number of unemployed (thousands)
**Source:** GUS data.

who want to raise it, which suggests an improvement both against the previous quarter and in comparison to the corresponding period last year. GUS business tendency survey also points to improvement in year-on-year terms, though the net balance of forecasts for industry and retail trade remain negative. GUS and NBP economic climate surveys both signal that the most positive outlook for employment growth is currently reported in construction, where the number of companies intending to increase their workforce outweighs those which plan to cut employment. According to NBP survey, the positive prospects of employment may be seen in these enterprises which favourably assess their economic situation, expect a rise in new orders and intend to increase their investment.

### 2.3.2 Wages and productivity

The gradual improvement in the labour market has been accompanied by wage discipline. In 2005 Q1 the rise in average wage both in the enterprise sector and in the

whole economy was lower then in all the quarters of 2004. In the enterprise sector it amounted to 2.0% y/y in nominal terms (which corresponds to a real decrease of 1.3% y/y), and 3.6% y/y (0% in real y/y terms) in the whole economy (Figure 2.14). April 2005 saw a continuation of a low growth rate of wages in the enterprise sector (nominal increase of 1.8% y/y, which in real terms represents a drop of 1.2% y/y). The NBP's economic climate indicators[26] do not suggest any intensification in wage pressure in enterprises in the future.

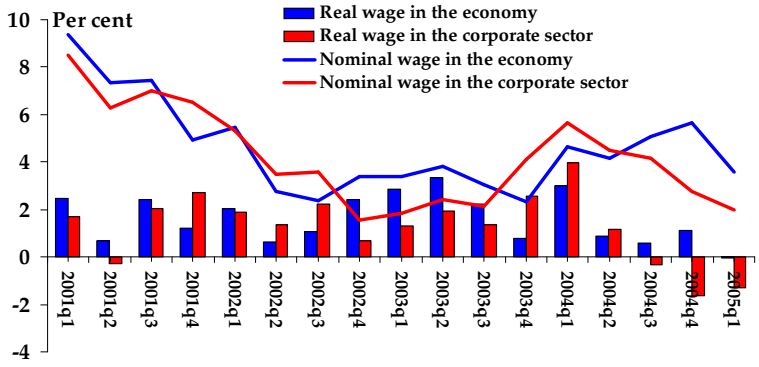


**Figure 2.14:** Annual percentage growth of wages in the economy and in the corporate sector (nominal and real)
**Source:** GUS data, NBP calculations.

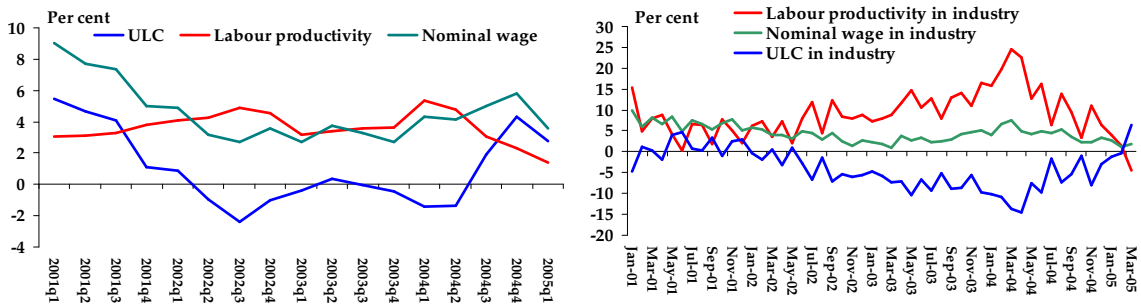


**Figure 2.15:** Annual percentage growth of unit labour costs (ULC), labour productivity and nominal wage - seasonally adjusted. Left-hand panel: Economy. Right-hand panel: Industry.
**Source:** GUS data, NBP calculations; Q1 2005 – NBP estimates.

For a few years the labour productivity in industry grew faster than nominal wages, which resulted in a decline of unit labour costs in the sector[27]. As a result of lowered growth of industrial output in February and March 2005 (primarily related to very high

[26] See: *Preliminary information concerning the condition of the corporate sector and the economic climate in the second quarter of 2005*, NBP.

[27] Unit labour costs in industry: average nominal wages in industry in relation to productivity in industry (productivity in industry: sold industrial output in constant prices in relation to average employment in this sector).

level of output a year before) there occurred a slowdown in the annual productivity growth. In spite of the continuously low wage growth, this led to an increase in unit labour cost in March 2005 (Figure 2.15, right-hand panel).

According to NBP estimates, in the economy as a whole, 2005 Q1 was the third consecutive quarter in which nominal wages rose faster than labour productivity, which led to a rise in unit labour costs. However, the growth rate of unit labour costs diminished, which resulted from the fact that the decline in wage dynamics in 2005 Q1 was greater than the slowdown in the growth rate of productivity in the period (which partly stemmed form high output levels a year before). Allowing for seasonal factors, the deceleration in wage dynamics recorded in 2005 Q1, accompanied by the slowdown in labour productivity growth (which was mainly due to the high output level one year before) resulted in lowering the growth rate of unit labour costs (Figure 2.15, left-hand panel)[28].

## 2.4 Other costs and prices

### 2.4.1 External prices

In 2005 Q1 a further price increase in world commodity markets could be observed (Figure 2.8). The largest contribution to commodity price growth was made by the sustained high demand of the Chinese and American economies, particularly for metals and fuels. As regards agricultural products prices, they grew at a slower pace.

The significant increase in crude oil prices, recorded since the beginning of 2005 (Figure 2.16), was due to a variety of factors. Among them should be mentioned the high demand for oil and also the lower spare production capacity[29]. Other factors contributing to the rise in the prices of this commodity were: the relatively low growth of production in countries outside the OPEC, depreciation of the American dollar, continuing geopolitical risk (mainly referring to Iraq, Nigeria and Venezuela) and the increased share of non-fuel-sector participants (such as hedge funds, pension funds and investment banks) in oil market transactions.

In March and April 2005 international institutions introduced significant upward adjustments to their oil price forecasts. Futures market data also suggest that the prices of this commodity will remain at a relatively high level in the coming two years. Issues

[28] Unit labour costs in the economy: nominal aggregate 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 GDP (in constant prices).

[29] In 2005 Q1 world demand for oil increased by approx. 2.1 billion b/d (*Oil Market Report*, International Energy Agency, 12 April 2005), primarily due to the sustained high growth in the world economy and a long cold winter in the northern hemisphere. According to current predictions the rise of demand in 2005 will not be as strong as it was last year. However, due to the recent fall in spare production capacity, doubts have been growing as to whether the supply will meet the demand. At the moment, spare production capacity in OPEC countries is at their lowest since 1992 (1.4 million b/d, i.e. 5% of total output), while countries outside the cartel use their capacities almost completely.

| | y/y change in per cent | | | | q/q change in per cent | | | |
|---|---|---|---|---|---|---|---|---|
| | 2004q2 | 2004q3 | 2004q4 | 2005q1 | 2004q2 | 2004q3 | 2004q4 | 2005q1 |
| **Total** | **36.2** | **38.2** | **34.9** | **29.7** | **8.7** | **6.7** | **3.8** | **7.8** |
| **Non-energy raw materials** | **25.5** | **20.4** | **11.9** | **4.4** | **0.5** | **-3.9** | **2.2** | **5.8** |
| food | 25.3 | 8.8 | -4.9 | -8.4 | 3.7 | -16.0 | -3.6 | 9.2 |
| industrial raw materials | 25.5 | 25.8 | 19.7 | 16.8 | -1.0 | 2.1 | 4.5 | 10.6 |
| agricultural | 11.0 | 10.1 | 1.6 | 2.6 | -0.4 | -1.2 | 0.0 | 4.2 |
| non-ferrous metals | 41.3 | 37.4 | 29.9 | 15.6 | -0.1 | 3.1 | 6.5 | 5.3 |
| **Energy raw materials** | **42.0** | **47.0** | **47.0** | **40.8** | **13.1** | **11.7** | **4.4** | **6.8** |
| crude oil | 32.7 | 42.0 | 46.0 | 44.8 | 11.4 | 13.3 | 6.1 | 8.1 |

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

of key importance here will be the development of the demand for oil and the level of spare production capacities. Just as in the previous year, a rise in the demand for oil will mainly hinge on the demand for this commodity in China and the USA (representing approx. 50% of demand growth in 2005). Forecasts indicate, however, that later in the year, demand pressure may lessen[30], which should favour a slow decrease of oil prices. Still, the high volatility of these prices considerably raises the uncertainty of the formulated forecasts. Additionally, these predictions are subject to risk. If the rise in demand proved stronger than currently forecast, further oil price hikes could be expected (particularly in the second half of 2005). In turn, a faster decline in the commodity's prices can be brought about by the announced increase in OPEC production capacity[31].

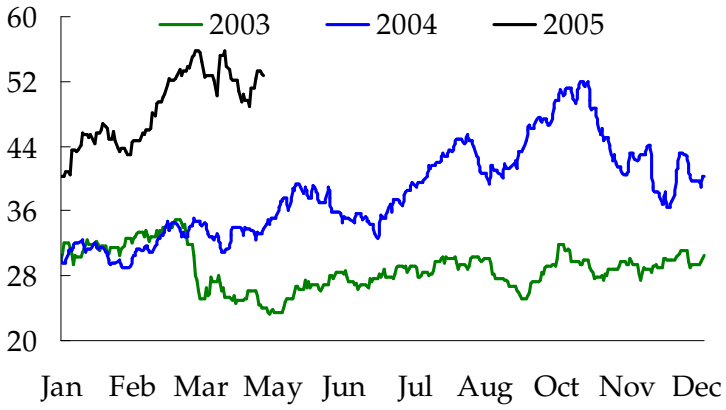


**Figure 2.16:** Brent crude oil prices (USD/barrel)
**Source:** Bloomberg data.

[30] It is estimated that the highest growth in demand in 2005 occurred in Q1 (*Monthly Oil Market Report*, Organization of Petroleum Exporting Countries, 15 April 2005; *Oil Market Report*, International Energy Agency, 12 April 2005.

[31] *Monthly Oil Market Report*, Organization of the Petroleum Exporting Countries, 15 April 2005.

A rise in the prices of non-energy raw materials and crude oil in 2005 Q1 contributed to the increase in producer and consumer prices in the largest world economies. In the United States, the PPI increased in year-on-year terms from 4.2% in January 2005 up to 4.9% in March 2005, and in the euro zone from 3.9% to 4.2%, respectively. As regards the CPI, in the same period it rose in the USA from 3.0% to 3.1% y/y and the euro-zone HICP went up from 1.9% to 2.1% y/y. Despite the rise in current inflation indicators, forecasts point to a moderate and gradual lowering of inflation in both economies in 2005 and 2006, which is consistent with expectations presented in the February *Inflation Report*.

### 2.4.2 Producer prices

The growth dynamics of producer prices in industry was falling over the analysed period and in April 2005 it came to 0.8% y/y (Figure 2.17, left-hand panel). According to the NBP, 2005 Q2 will see a further drop to PPI dynamics so that producer price deflation cannot be ruled out. Nevertheless, due to the unexpected commodity (oil and copper) price increases in 2005 Q1, and also due to the depreciation of the zloty observed from March, the lowering of price growth rate will be slightly slower than expected.

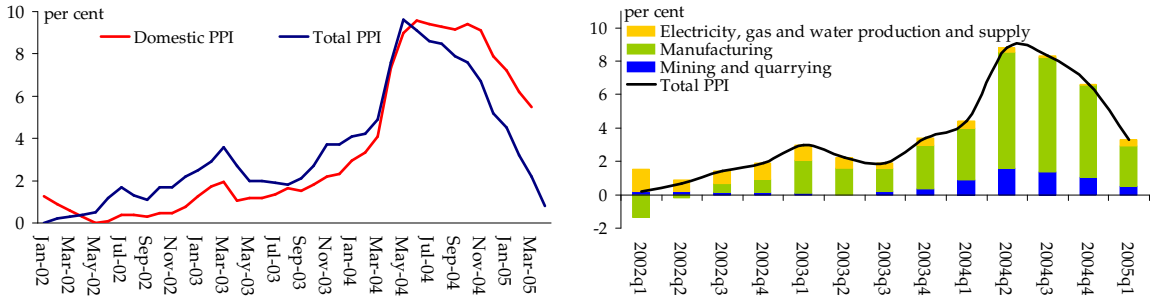


**Figure 2.17:** Producer prices in industry (PPI). Left panel: Total PPI and domestic PPI. Right panel: Contribution of producer prices in industry sectors in PPI total growth.
**Source:** GUS data.

The slowdown in the growth rate of producer prices in industry observed in 2005 stemmed primarily from the high base effect. This year prices have been growing significantly slower than in the corresponding months of 2004. Additionally, in January and February 2005 a dynamic slide was recorded in export prices, which was connected with the appreciation of the zloty. The growth rate of domestic producer prices in industry from June 2004 was above the total PPI growth, though since November 2004 it has recorded a dynamic decline (Figure 2.17, left-hand panel).

The most significant impact on the pace of PPI growth in Poland in 2005 Q1 was exerted by price movements in manufacturing – mainly due to its weight in the whole of the index. Decrease in the price growth in year-on-year terms was observed in

virtually all divisions of manufacturing. In February 2005 eleven (out of 21) divisions, primarily export-oriented or those less dependent on prices of raw materials, recorded year-on-year deflation of producer prices[32]. A significant contribution to the PPI dynamics in the analysed period was also made by prices in section *mining and quarrying*. Additionally, the price increases which occurred in January 2005 in section *electricity, gas and water production and supply* raised this section's contribution to PPI growth in comparison to the previous year (Figure 2.17, right-hand panel).

## 2.5 Financial markets

### Short-term interest rates[33]

In the analysed period both the macroeconomic data and the decisions of the Monetary Policy Council, as well as the information issued after its meetings, pointed to the improvement of the balance of risks for future inflation and deterioration of economic growth forecasts in 2005. These factors increased market expectations for interest rate reductions in 2005, which was reflected in the fall of interest rates on interbank deposits and FRA rates (Figure 2.18).

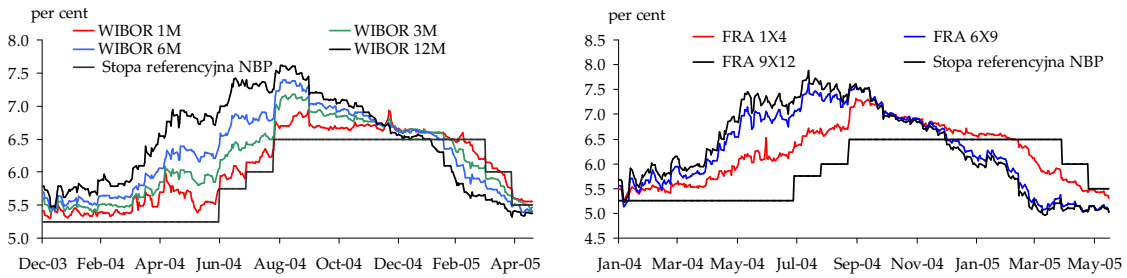


**Figure 2.18:** NBP reference rate and interest on interbank deposits (left-hand panel) and NBP reference rate and interest on FRA contracts for 3M WIBOR (right-hand panel).
**Source:** Reuters data.

By changing its monetary policy bias from tightening to easing at its February meeting, the Monetary Policy Council signalled the increase in the likelihood of interest rate cuts. In consequence, the subsequent NBP rate reductions by 0.5 percentage point in March and April 2005 were already accounted for in financial asset prices. By contrast, the MPC's April decision to change its monetary policy bias to neutral was unexpected by the market. Analysts interpreted it as a decrease in the probability of interest rate reduction in the coming months.

[32]For example: manufacture of electronic equipment – a fall of 12.4%, manufacture of medical, precision and optical instruments – a fall of 6.0%, manufacture of machinery and household equipment – a fall of 5.3%, other transport equipment – a fall of 4.4%.

[33]The cut-off date for the data accounted for in this section is 18 May 2005.

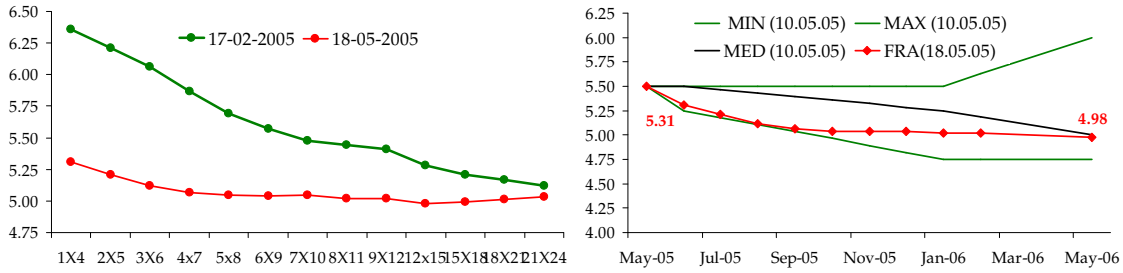


**Figure 2.19:** Three month forward curves (left-hand panel) and expected changes in NBP reference rate on the basis of FRA contracts and Reuters survey of 11 Feb 2005 (right-hand panel).
**Source:** Reuters data.

Forward rates on FRA contracts to be settled in the last months of 2005 vary slightly between one another (FRA contracts curve is almost flat). Their levels have been relatively stable since mid-March 2005 (Figure 2.18, right-hand panel; Figure 2.19, left-hand panel). This suggests that market expectations as to the scale and termination date of interest rate reduction cycle have stabilised. At the end of the analysed period, FRA rates priced in the NBP reference rate reduction of 25 bp. in May or June 2005. The subsequent – and last – reduction of the reference rate by 0.25 percentage point is priced in FRA contracts with September settlement date. Consistent with the expectations accounted for in FRA rates are the results of Reuters survey (dated 10 May 2005) pointing out that most of the surveyed analysts (approx. 71%) expected the interest rate reduction to the level of 5-5.25% by the end of 2005 (Figure 2.19, right-hand panel).

## Trends in international financial markets

In line with market expectations, at the May meeting of the *Open Market Committee* the Federal Reserve Board (FOMC) raised its interest rates by another 25 bp. to the level of 3.0%. In its press release, the Fed announced it was going to continue the policy of gradual interest rate increases. The lack of more aggressive monetary policy tightening, despite increased inflationary pressures in the last few months, is the result of long-term inflation expectations being maintained at a low level. At its next meeting in May, the Fed is expected by the market to maintain its current scale of interest rate increases of 25 bp. and the total increase of interest rates is forecast to reach 1.0 percentage points by the end of 2005 (Figure 2.20).

In Reuters May survey, almost all respondents expected Fed to raise interest rates by 25 bp. in June 2005 (to the level of 3.25%) and forecasted another increase of 0.25 percentage point in August 2005. The median of the expected interest rate level at the end of 2005 reaches 4.0% and is consistent with the expectations derived from future contract rates.

In line with market expectations, in the analysed period the European Central Bank (ECB) left its interest rates unchanged at their all-time low of 2%. In its statement, the

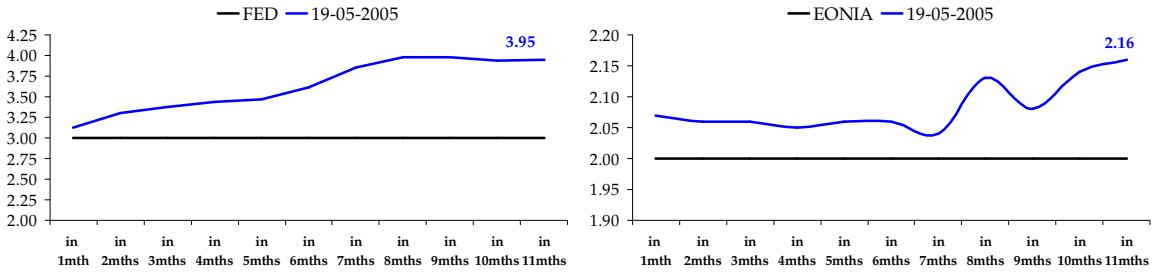


**Figure 2.20:** Expectations on the FED interest rate changes (on the basis of Fed Funds Futures) (left-hand panel) and expectations on the ECB interest rate changes (on the basis of EONIA swaps – overnight index swaps) (right-hand panel).
**Source:** Bloomberg.

ECB justified its decision by the lack of signals of growing inflationary pressure in the euro area and weak macroeconomic data published in the last few months. Despite being aware of threats related to the impact of high oil prices on the sustainability of economic growth and the development of inflationary processes, the EBC believes that the long-term outlook for growth and inflation in the euro area is positive.

In the market assessment, however, the positive outlook for inflation and lowered forecasts of economic growth in 2005 suggest that an increase of ECB interest rates is highly unlikely in the coming months.

In Reuters survey (dated 27 April 2005), the majority of respondents expected the ECB to increase its interest rates in 2005 Q4 by 25 bp. Analysts´ forecasts are ahead of market expectations as measured on the basis of EONIA swaps (Overnight Index Swaps). The rates of money market instruments imply that ECB interest rate at the end of 2005 will stand at approximately 2.13% (Figure 2.20). It means that money market dealers see a 52% probability of the increase reaching 25 bp. at the end of 2005.

## Long-term interest rates[34]

The main factors underpinning the developments in the domestic treasury bond market in the analysed period were the changing expectations as to the future level of NBP interest rates. The developments in major world markets, particularly the signals pointing to changes in the Fed´s monetary policy, were also of importance.

A significant drop in the inflation rate in the first months of 2005 was followed by an increase in expectations of NBP interest rate cuts. These expectations translated into the increase in debt instruments prices and the maintenance (since mid-2004) of the downward trend in yield on treasury securities (Figure 2.21). Decrease in inflationary threats was confirmed by the Monetary Policy Council, which in February changed its monetary policy bias from tightening to easing and, in the following months, reduced the NBP reference rate by 50 bp. on two occasions. Due to the expectations of interest

[34]The data presented in this section refer to the period until 18 May 2005.

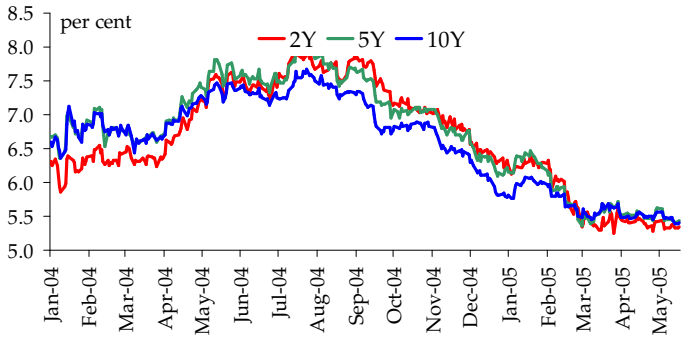


**Figure 2.21:** Change in the yields of the benchmark bonds
**Source:** NBP data.

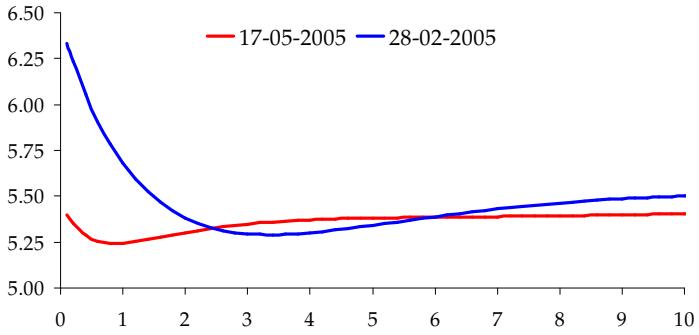


**Figure 2.22:** Three-month interest rate curves on the basis of forward contracts
**Source:** Bloomberg.

rate cuts the drop in yield on debt instruments was the largest in the case of 2-year bonds, since their pricing is closely related to market expectations of the future path of short-term interest rates. As a result, in the analysed period the zero-coupon yield curve flattened (Figure 2.22).

At the beginning of March 2005, treasury bond markets of the Central and East European countries were at the correction stage. This was brought about by exchange rate depreciation and general sale of assets in emerging markets. The driving force behind the outflow of capital from the countries of our region was a strong growth in yields on American long-term bonds. In Poland, however, the correction in debt instruments market was insignificant, since the expected reductions of NBP interest rates limited the fall in treasury bond prices.

Price shifts of Polish bonds are reflected in the steady decrease in the average annual yields on long-term treasury securities, which has persisted since November 2004 (Figure 2.23). Yet, its level is still above the reference value for interest rate criterion, the fulfilment of which is one of the conditions of euro area membership[35].

[35] A particular country complies with this criterion when the average (12-month moving average) yield

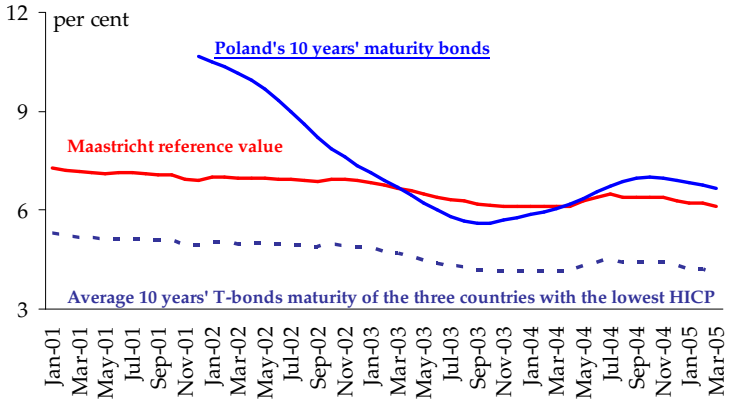


**Figure 2.23:** Average annual yield (12-month moving average) for long-term Treasury bonds in Poland versus the reference value for the Maastricht criterion
**Source:** NBP estimates based on Eurostat data.

Since the beginning of 2005 the share of non-residents in the domestic securities market has been stable (standing at approx. 27%). Thus, there was no continuation to the dynamic growth in the involvement of non-residents in this market, particularly strong in the second half of 2004, which used to be contributing to the accelerated fall in yields on Polish debt instruments.

### 2.5.1 Exchange rate

After two years of zloty depreciation, the 12 months´ period since March 2004 saw the continuation of the appreciation trend of the Polish currency. At the end of February 2005, the real effective exchange rate of the zloty (deflated with the consumer price index – REER CPI) appreciated during the year by 24.6% reaching its highest level since April 2002 (Figure 2.24). Additionally, as a result of deterioration in the ratio of labour productivity and wage growth, the strengthening of the real effective exchange rate of the zloty deflated with unit labour costs[36] has been observed since mid-2004. However, the trend towards the appreciation of the zloty was subdued at the beginning of March 2005 and by the end of April a significant depreciation of the zloty both against the euro and the American dollar was noted.

The depreciation of the zloty was driven, to a large extent, by external factors, which is confirmed by similar changes in the value of other Central European currencies. Capital outflow from Central European countries was caused, among others, by higher

on long-term treasury bonds observed during the year does not exceed by more than 2 percentage points the arithmetic mean of yields on bonds of three EU member states with the most stable prices. For more information on the Maastricht criteria see: *A Report on the Costs and Benefits of Poland's Adoption of the Euro*, NBP, 2004.

[36]Unit labour cost index is calculated as the ratio of wage growth per employee to the labour productivity growth, measured as output (volume) in manufacturing per person employed in this sector.

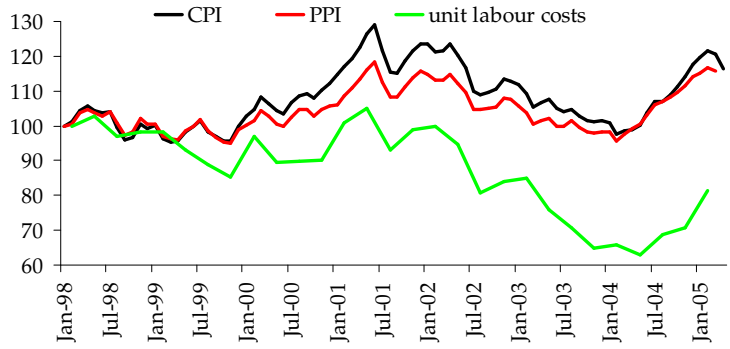


**Figure 2.24:** Zloty real effective exchange rate
**Note:** Data for unit labour costs based on NBP and European Commission, estimates for 2004 Q4 based on ECB data.
**Source:** NBP, ECB and European Commission.

yield on American treasury securities. Other factors listed as conducive to zloty depreciation include proposals to reduce the EU budget in the years 2007-2013 bringing about the risk of lower than expected inflow of EU funds to Poland, and the European Council's decision from March 2005 that the cost of pension reform will be accounted for in in the reduction of the public finance sector deficit only temporarily. This decision – in market assessment – may postpone Poland's meeting of the Maastricht fiscal criteria and, thus, delay Poland's accession to the euro area. One more factor which contributed to the worsening of sentiment towards the countries of our region was the risk of non-ratification of the EU Constitution by France.

Also conducive to the weakening of the Polish currency were some domestic factors. In the last few months political risk related to the pre-election period has increased. Moreover, the decrease, in the analysed period, of the NBP interest rates by 100 bp. coupled with interest rate increases abroad resulted in significant shrinking of interest rate disparity.

Apart from the above-mentioned factors conducive to zloty depreciation, also processes favouring Polish currency appreciation could be noted here such as the improving current account balance, sustained low unit labour costs dynamics and also expected inflows of direct investment.

Due to sustained uncertainty surrounding many of the above factors influencing Polish currency exchange rate, the exchange rate of the zloty may prove highly volatile in the nearest future.

### 2.5.2 Credit and money

#### Corporate sector

In the analysed period there was a continuation of the upward trend in the value of bank loans to enterprises, observed from mid-2004. In 2005 Q1 their volume increased by 2.6% (q/q) in nominal terms[37]. The impact of zloty exchange rate shifts on the value of loans granted was moderate in the period. After adjustment for exchange rate movements, corporate indebtedness to the banking sector rose in 2005 Q1 by approx. 2.4% (q/q). In terms of methodology, allowing for exchange rate movements is a more appropriate approach than relying merely on nominal data and therefore the values presented in the rest of this chapter will be following the former approach, unless indicated otherwise.

Banks which in 2005 Q1 observed changes in the demand for credit reported an increase in the corporate need for investment funding, in the first place. Also crucially important here, was the demand for funds necessary for co-financing investments subsidised by the European Union. In contrast, according to commercial banks the demand for working capital loans was weaker, though they still constitute a major component of total lending. The persistently high level of corporate own funds remains the main factor hampering the rise in lending activity. The NBP's survey[38] indicates that approx. 73% of investment spending and as much as 51% of current expenses of the surveyed companies is financed from their own funds. 2005 Q1 brought a stabilisation in the contribution of bank loans in financing current activity, at the low level of approx. 16%. At the same time, the share of loan-based financing of investments displayed a slight increase for the second quarter in a row, also reaching the level of 16%.

The tendencies signalled by loan committee chairpersons and surveyed enterprises find support in the balance sheet of the system of commercial banks. The annual growth rate in corporate loans has been positive since December 2004 and it March it amounted to approx. 1.4% (Figure 2.25). Ever since August 2004, with the exception of two months, there has been a steady climb in working capital loans and authorised overdraft, while since January 2005 investment loans have also been rising slowly (Figure 2.26). The aggregate growth in authorised overdraft and working capital loans between the end of July 2004 and the end of March 2005 amounted to approx. 7.7%. The absence of any stronger upturn in the corporate loan market most probably results, to a large extent, form the improvement in the overall financial standing of the group

[37] Methodological changes to monetary statistics introduced in January 2005 render it impossible to make any precise comparison between the values of corporate loans and deposits in 2005 and in the period prior to the modification. For this reason, the data on assets and liabilities of monetary financial institutions presented in this section are estimated and refer to the banking sector including banks in bankruptcy but without Credit Unions. The exclusion of Credit Unions follows from the fact that almost all their operations are made with households.

[38] *Preliminary information concerning the condition of the corporate sector and the economic climate in the second quarter of 2005*, NBP (www.nbp.pl).

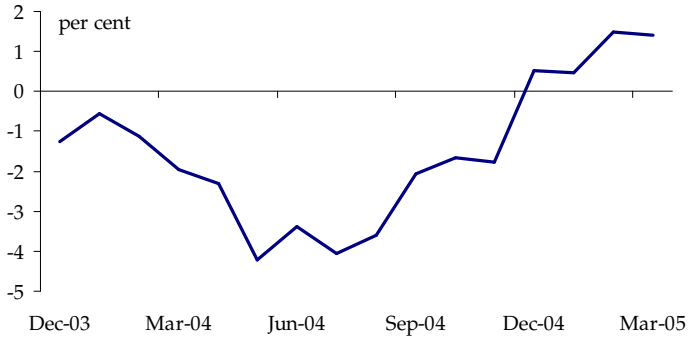


**Figure 2.25:** Credit for enterprises (y/y growth in per cent, data adjusted for the impact of exchange rate movements)
**Source:** NBP data.

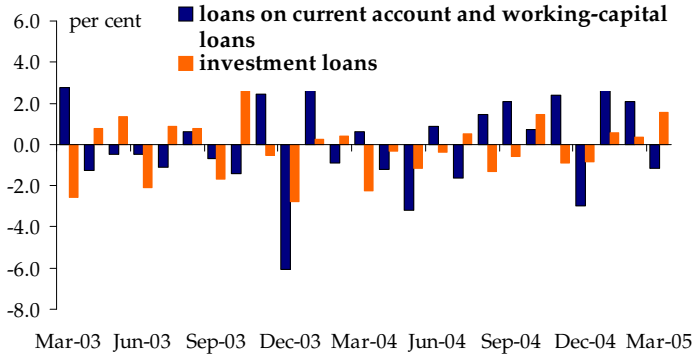


**Figure 2.26:** Loans to entrprises on current account, working-capital and investment loans (y/y growth in per cent, data adjusted for impact of exchange rate movements)
**Source:** NBP data.

in 2004. High level of own funds of enterprises reduces their need for funding their activity with bank credit.

In the analysed period, the lowering of interest rate in the interbank market was accompanied with a drop in the cost of corporate credit (see Table 2.9). The enterprises surveyed by the NBP have been declaring, for many quarters now, that the level of interest on loans does not represent a barrier to their growth. In 2005 Q2 only as many as 3.9% of enterprises listed the cost of bank credit among the factors imposing a limit to their activity (which is 0.9 percentage point fewer than in the previous quarter).

The findings of the NBP survey study indicate that in the nearest future some increase in the demand of enterprises for credit may be expected. An increased demand for credit should remain stable on the part of large companies in good economic condition, despite some deterioration in liquidity position in 2005 Q1 signalled by them. At the same time banks intend to further relax their credit policies, which may be conducive to some increase in corporate indebtedness.

| | Loans | | | Deposits | | |
|---|---|---|---|---|---|---|
| | total | households | enterprises | total | households | enterprises |
| Apr04 | 9.5 | 11.6 | 7.3 | 3.0 | 3.0 | 2.9 |
| May04 | 9.6 | 11.6 | 7.4 | 3.0 | 3.0 | 2.9 |
| Jun04 | 9.6 | 11.6 | 7.4 | 3.0 | 3.0 | 2.9 |
| Jul04 | 9.9 | 11.8 | 7.8 | 3.1 | 3.1 | 3.1 |
| Aug04 | 10.3 | 12.2 | 8.2 | 3.5 | 3.5 | 3.2 |
| Sep04 | 10.5 | 12.3 | 8.4 | 3.8 | 3.9 | 3.4 |
| Oct04 | 10.7 | 12.5 | 8.4 | 3.8 | 3.9 | 3.4 |
| Nov04 | 10.5 | 12.4 | 8.4 | 3.8 | 3.9 | 3.3 |
| Dec04 | 10.4 | 12.1 | 8.3 | 3.7 | 3.8 | 3.4 |
| Jan05 | 10.3 | 12.0 | 8.4 | 3.7 | 3.8 | 3.4 |
| Feb05 | 10.2 | 11.9 | 8.2 | 3.7 | 3.8 | 3.3 |
| Mar05 | 10.0 | 11.7 | 8.0 | 3.7 | 3.8 | 3.3 |

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

Rapid growth persists in corporate deposits at commercial banks (approx. 28% y/y), which is still the result of their good financial standing. In view of the expected increase in the rate of growth of investment outlay and also the fact the majority of enterprises finance investment with their own funds, in the future some slowdown in this sector's deposit growth should be anticipated.

### Household sector

The analysed period marked a continuation of the fast increase in household credit (Figure 2.27). Its annual growth was equal to 16.8% in March 2005[39]. Ever more important role in the rise of household indebtedness to the banking sector is played by loans for consumption purposes. Housing loans – which till mid-2004 had been the largest and virtually the only source of growth in total household loans – in the period between June 2004 and March 2005 grew by approx. PLN 6.6 billion. In the same period, the increase in consumption loans amounted to approx. PLN 6.0 billion. The rising share of consumption loans in the total growth in loans to households has been observed since the half of 2004 (Figure 2.28). This growing contribution can be attributed to a favourable assessment by households of their future financial standing and growing level of optimism, which is indicated by the GUS consumer sentiment survey[40]. At the same time, however, due to the fact that the growth rate of housing loans still exceeds that of consumption credit, their share in the household

[39] In spite of some methodological changes in monetary statistics, which consisted, *inter alia*, in including Credit Unions into the population of commercial banks, they have not been accounted for in this section due to the lack of disaggregated data on Credit Unions. For the sake of preserving comparability with 2004, just like in the case of the corporate sector, also the banks in bankruptcy have been included in the population of banks.

[40] *Consumer Sentiment Survey*, GUS, www.stat.gov.pl (Polish version only).

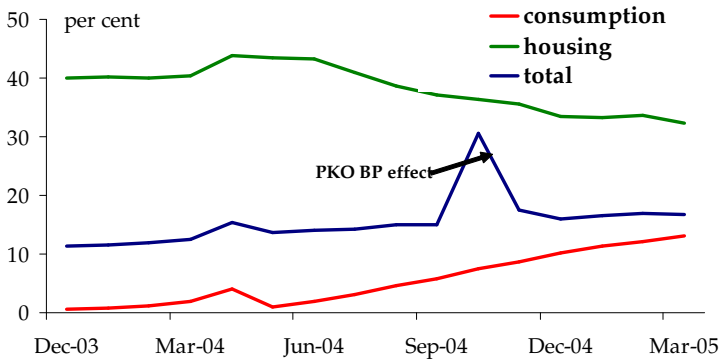


**Figure 2.27:** Household credit (y/y growth in per cent, data adjusted for the impact of exchange rate movements)
**Source:** NBP data.

indebtedness is constantly growing (Figure 2.28). As of the end of March, it reached 35% in nominal terms.

The growing weight of consumption loans in total household lending is also signalled by commercial banks in the NBP's survey studies. In 2005 Q1 they recorded a climb in the demand for housing and consumption loans alike. In the opinion of the polled banks the main reasons behind this increase in the demand for loans are: the relaxation of loan granting policies, which is primarily the effect of growing competitive pressure from other banks, and also the improving economic standing of households.

Interest on household loans is subject to gradual reductions. In 2005 Q1 the fastest and the deepest decline was observed in the cost of housing loans , which results from the fact that they are strongly related to the interest rates in the interbank market.

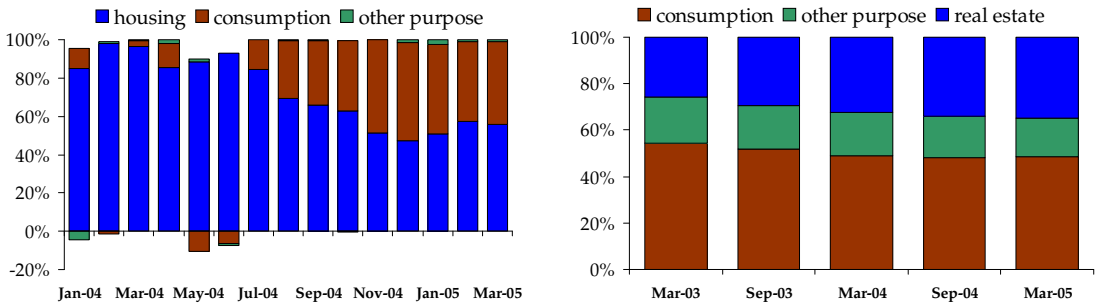


**Figure 2.28:** Household credit breakdown. Left panel: breakdown of credit to individulas semi-annual changes over periods ending in months indicated. Data adjusted for the one-off spike in November 2004 due to PKO BP privatisation. Right panel: Breakdown of the stock of credit to households in months indicated. Both panels based on nominal data adjusted for the estimates of impact of exchange rate movements.
**Source:** NBP data.

The weighted average interest on zloty housing loans in March 2005 stood at 7.6%. The cost of consumption loans was also diminishing, though at a slower rate – in March its weighted average was equal to 15.9%.

The continuing economic upturn, which translates into an improvement of financial situation of households, should encourage a further climb in households' indebtedness to banks in the near term. Loan committee chairpersons expect household demand for credit to raise in 2005 Q2. Conducive to this increase, should be the loosening by banks of their loan granting conditions.

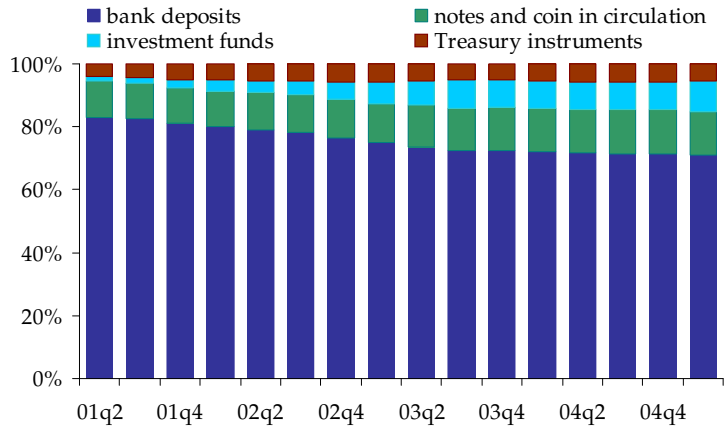


**Figure 2.29:** Structure of households' financial assets
**Source:** NBP data.

A rebound in the deposit volume of households already signalled in the previous issue of *Inflation Report* has been continued. Following a rise of approx. PLN 5.7 billion in 2004 Q4, deposits of households recorded a further climb of approx. PLN 5.8 billion in 2005 Q1. Also growing are other financial assets of households such as investment fund units, government securities and deposits with Credit Unions. In 2005 Q1 their volume increased by approx. PLN 3 billion, and in the preceding quarter – by 1.9 billion. This rise in financial savings of households is mainly attributable to their improved income situation amid the economic revival. Still progressing are the changes in household savings structure already observable for several years: the share of bank deposits is shrinking, while the contribution of alternative forms of saving is expanding at the expense of traditional deposits (Figure 2.29).

### Monetary aggregates

The above discussed developments in loans and deposits in the commercial banks were also reflected in movements of the main monetary aggregates. There has been a continuation to the rising trend in broad M3 money supply, observed since 2003 (Figure 2.30). M1 aggregate is still growing at an annual rate of well over ten per cent,

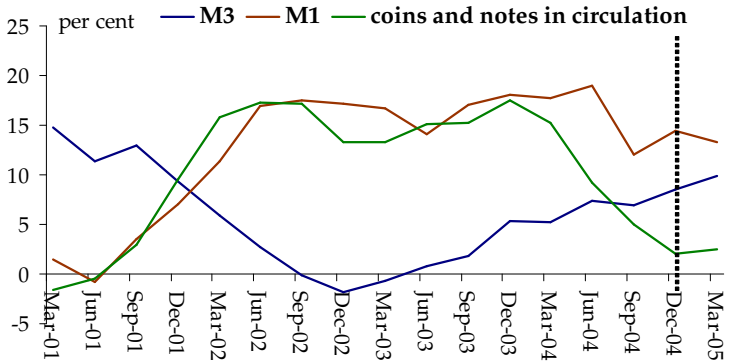


**Figure 2.30:** Nominal y/y growth of coins and notes in circulation, M1 and M3
**Note:** Methodological changes to monetary statistics introduced with the beginning of 2005, despite having modest impact on the values of monetary aggregates (e.g. the change in M3 value following form changes in definitions amounted to 1.1% for December 2004), render it hard to compare back data (older than 2005) with the data from 2005. The estimates of monetary aggregate values prepared on the basis of the currently used methodology are only available for 2004, and so the annual growth rates for comparable data can only be obtained for 2005 Q1. In the chart, the boundary for data comparability was marked with a vertical line.
**Source:** NBP data.

although over the last three quarters the recorded growth rate has decelerated slightly (down to approx. 14% in nominal terms against 17% one year before). In 2005 Q1 the rapid falling tendency in the annual growth rate of notes and coin in circulation visible in 2004 was halted. In line with what was stated in the previous *Inflation Report*, the lowering of cash dynamics represents a return to balance after a period of intense growth in 2002 and 2003. Such character of the drop is also supported in that the share of cash in the broad money aggregate remains at a level close to that observed in other Central and Eastern European countries.

# Monetary Policy in March-May 2005

In the period between March and April 2005 the Monetary Policy Council lowered the NBP interest rates twice, on each occasion reducing them by 0.5 percentage point, i.e. by the total of 100 basis points. At the end of the period the reference rate stood at 5.5%, lombard rate at 7.0% and deposit rate at 4.0%.

In March 2005 the Council reduced key interest rates and maintained its easing monetary policy bias adopted in the previous month. In April the reduction in rates was accompanied by a change from easing to neutral bias. In the Council's assessment, after allowing for March and April rate cuts, the probabilities of inflation running above and below the target over the monetary policy transmission horizon were roughly equal.

The analysis of economic data from the first months of 2005 pointed to the evaporation of factors which contributed to inflation increase in 2004. Moreover, in enterprises a strong wage discipline was sustained, which meant that no so-called second round effects resultant from transitorily raised inflation expectations in 2004 emerged. The adoption of easing bias in February signalled that in the transmission horizon of monetary policy instruments the probability of inflation falling below the target rose considerably. This assessment was also confirmed by balance of risk for inflation analyses performed monthly by NBP economists and by forecasts produced by other analytical centres. At the same time, the Council was acting on the conviction that there persisted uncertainty concerning the outlook for inflation and that its decisions should not be conducive to any significant fluctuations in market expectations as to the future interest rate path. That is why the adjustment of interest rates to the appropriate level considering future inflation should be gradual.

Despite a similar picture of inflation prospects in March and April, the successively published data revealed slightly different premises for MPC decisions in each month. In March the assessment of the balance of risks for future inflation indicated that it was more favourable than presented in the February *Inflation Report*. Food price forecast signalled a faster decrease in their growth rate in 2005 than previously expected. Also the inflation in January and February, which was considerably below expectations, raised the probability of lower price growth in 2005 and 2006. Other fac-

tors conducive to faster inflation reduction included: the slower than assumed GDP growth in 2004 Q4 and probably weaker than assumed economic growth in 2005 Q1. Likewise there appeared no signals which would point to wage pressure emerging in the enterprise sector resulting from increased inflation expectations in 2004. The inflation expectations were falling quickly, which supported low wage growth in companies.

In April 2005 the balance of risks for future inflation did not change significantly compared to the assessment in March. Low wage dynamics in the enterprise sector was continued and signals indicative of faster than expected drop in food price inflation were confirmed. In relation to March, there was a rise in the probability of GDP growth in 2005 to be lower than predicted in the February *Report*.

In the analysed period, the Council bore in mind that in the longer term there may arise the risk of increased inflationary pressure related to the upward revision of oil and other commodity price forecasts. These forecasts, however, are subject to considerable uncertainty.

In March and April the Council paid a lot of attention to the analysis of prospects for economic growth and its relationship to potential GDP. On the one hand, most of economic climate indicators pointed out that the outlook for economic growth may deteriorate in the first half of 2005. Additionally, in survey studies of the NBP's and other analytical centres, enterprises named low demand as one of the most important barriers to growth in production. On the other hand, the investment rebound – particularly in the second half of 2004, in enterprises with over 50 employees – and also bright investment prospects signalled in economic climate studies coupled with a gradual recovery in the labour market all indicated that in the second half of 2005 acceleration may be expected in GDP growth rate.

In March-April 2005, the exchange rate was broadly consistent with the path accounted for in the February *Report*. Nevertheless, the Council was aware of the rising risk of the nominal zloty exchange rate depreciation when compared to the path assumed in February. The risk originated from the situation in international financial markets, the risk connected with possible non-ratification of the Constitution for the European Union, and pre-election uncertainty as to the progress of public finance reforms in Poland.

The Council opted for the adoption of a neutral bias in April 2005 with a view to the need of pursuing a forward-looking monetary policy which would account for time lags between the decision on interest rates and its strongest impact on inflation. In particular, in February 2005 the Council adopted an easing bias even though the current inflation remained well above the upper tolerance limit for deviations from the target. Similarly, in deciding to change its bias to neutral in April the Council was aware that, primarily due to a strong deceleration in food price growth, inflation will probably stay below target in the coming quarters. However, the assessment of the outlook for inflation accounting for the impact of the gradual closing of the output gap on price growth rate plus the bearing of high oil prices on inflation and economic

growth both suggested that, in the longer horizon, the probabilities of inflation running above and below target were roughly equal.

The Council also took into consideration the longer term prospects for inflation in the context of compliance with the Maastricht price stability criterion. The sine-qua-non condition for taking the fulfilment of this criterion into account in current monetary policy decisions is the implementation of public finance reforms that would lead to the compliance with fiscal convergence criteria.

In the Council's assessment, the May inflation projection and the currently available data indicate that the balance of risks for future inflation has not changed enough to change the monetary policy parameters. Therefore, in May the Council decided to keep interest rates unchanged and to maintain a neutral monetary policy bias.

# Inflation projection

## 4.1 Change of the forecasting model

All central banks build models used for forecasting economic processes. The rationale for this is to obtain a consistent picture of the economy and its prospects, to support monetary policy decision making process and to create a tool which makes it possible to communicate central bank's view of economic developments to the public in a clear and transparent way. Modelling an economy, in particular inflation, is a continuous process, hence no economic model can be viewed as final. Implementing changes and updating tools used for this purpose is crucial to be able to map the time-evolving economy in an adequate way. The changes are unavoidable also due to the evolution of economic theory and modelling methods.

There are many formal tools implemented in the NBP to analyze the Polish economy. For about five years, two economic models have been used for preparing regular inflation projections. The first model, NSA, focuses on changes in aggregate demand, while the second model, MSMI, describes also the supply side of the economy. Since August 2004, the projections have been published in the *Inflation Report*.

Two years ago, a new project was launched, aimed at constructing a forecasting model, ECMOD, which would meet a set of specific criteria, in particular:

- the public finance sector and the real economy should be modelled in a way that enables direct and explicit accounting for the inflow of transfers from the EU,
- it should be possible to incorporate the experts' knowledge into the model, not only via exogenous variables, but also with respect to structural changes in the Polish economy,
- the set of information obtained from the model should comply with the needs of the European System of Central Banks.

The project has been completed and, as from May 2005, the projections published in the Report are based on ECMOD. ECMOD is a structural macroeconometric model and was built in order to forecast key macroeconomic variables, in particular inflation and GDP along with its components. The model incorporates both the supply and the

demand side of the economy, several price indices are modelled, the public finance sector is covered in detail, experts´ knowledge are utilized to larger extent than in most other models. It has to be stressed that the switch to another model as a basis for the projections published in the *Inflation Report* does not imply that the NBP's economists view about the functioning of the Polish economy has been changed. The inflation projections based on ECMOD have been so far used internally at the NBP, yielding results similar to those obtained from other models.

Being more disaggregated in comparison to other models used at the NBP, ECMOD makes it possible to analyze economic developments in more detail. The impact of transfers from the EU on the economic activity and inflation is modelled in an explicit way. The GDP projection consistent with the inflation projection can be obtained from ECMOD and published in the *Report* . Finally, ECMOD brings the set of variables forecasted at the NBP closer to the standards of the European System of Central Banks.

In May 2005, the NBP Management Board has approved the ECMOD inflation projection to be submitted to the Monetary Policy Council and published in the *Inflation Report*. The inflation projection is one of the inputs to the Monetary Policy Council's decision-making process. It has been prepared by a team of NBP economists led by the Deputy President of NBP.

## 4.2 Introduction to the May inflation projection

The general assessment of economic climate in 2005 Q1 is positive. In quarter-on-quarter, seasonally adjusted terms, a modest step-up in GDP growth rate was observed. The lowering of GDP growth dynamics in year-on-year terms mainly followed from its steep increase a year before, in the period preceding Poland's accession to the European Union.

Although uncertainty persists as to the structure of GDP growth, in the NBP's assessment 2005 Q1 saw a further acceleration in gross fixed capital formation and the investment revival of 2004 was stronger than indicated in the previous data. Available information suggests that the subsequent quarters of 2005 will witness a remarkable growth in investment. Ever more important factor supporting investment growth will be the implementation of projects financed from EU funds, as these investments do not only raise the capital expenditure of the general government, but also promote investment activity in small enterprises and agricultural farms.

GUS data confirm some earlier expectations of the NBP that the process of rebuilding inventories was completed in 2004 Q3 and ever since 2004 Q4 the inventories-to-output ratio has not increased. It is expected that in the coming quarters the growth of inventories will be moderate and consistent with the current level of economic activity.

According to NBP estimates, after a hardly-explainable plummet in the growth rate of private consumption in 2004 Q4, in 2005 Q1 it rose to a level just slightly lower than

that in the first three quarters of 2004. Economic climate surveys signal increasingly brighter sentiment of consumers both as regards the current and the future situation and so should be conducive to maintaining the growth rate of consumption demand at its current level.

In spite of the strong appreciation of the zloty in 2004 and at the beginning of 2005, available data point to the continuation of a strong export expansion. In the face of a lowered rate of import growth, this indicates a still positive, even though decreasing, contribution of net exports in total GDP growth.

The latest data from the labour market[41] point to growing employment levels coupled with a sluggish but steady decline in jobless figures. The gradual improvement in the labour market is accompanied with strict wage discipline, which means the absence of the second round effects stemming from transitorily raised inflation expectations in 2004. Real wage dynamics in the economy as a whole is still lower than the rate of productivity growth, which seems to result, primarily, from the still elevated unemployment. This high level of joblessness still exceeds the level which would be consistent with wage increases proportionate to labour productivity growth. However, alongside the rise in employment levels a gradual rise in wage growth rate may be expected.

Due to the continuously high unemployment rate and also time lag between investment outlays and growth in potential output, the output gap remains negative. As a result, the demand-pull inflation, usually accompanying fast economic growth, has currently been limited in Poland.

A faster than expected drop in the annual inflation at the beginning of 2005 was to a large extent warranted by the change in the weight structure used by the GUS in calculating the CPI index. Also a deeper than expected plummet in food price growth rate contributed to inflation reduction in the analysed period. The remarkable weakening in consumer price growth rate attests to the disappearance of transitory factors, which stimulated the heightened inflation level in 2004. This conclusion is additionally supported in the behaviour of core inflation measures, which point to the evaporation of inflationary effects of food price shifts on the performance of the CPI. The significantly higher level of the annual growth rate of core inflation indicators compared to the first months of 2004 originates from their strong rises, particularly in May 2004, driven by the change in indirect tax rates in the month of Poland's EU accession. The effect of the low reference base will vanish in May 2005, when a considerable drop in the annual growth rate of core inflation indices is expected.

The inflation projection accounts for expert assumptions of variables and sectors external to the model, such as food prices, crude oil prices, economic growth in Poland's major trade partners, fiscal policy parameters, expected situation in financial markets. The 2005 Q1 values of some variables used in the model were not available when the projection was being prepared (e.g. GDP composition) and so their values accounted for in the projection were determined by experts as well. The cut-off date for the

[41] In the projection the analysis of the labour market is based on the *Labour Force Survey* (BAEL) data.

projection is 22 April 2005. The projection covers the period from 2005 Q2 till the end of 2007.

While preparing the projection a technical assumption was made that the NBP's reference rate will stay at 5.5% over the projection horizon. As the result of this and the assumptions regarding the future paths of exogenous variables, the projection is conditional. Thus it does not show the actual future inflation outcome, but rather presents how inflation would behave should the NBP key rates remained unchanged, and the external variables followed the assumed patterns.

## 4.3 Projection assumptions related to external environment

### External demand and euro zone inflation

While preparing the present projection, the outlook for euro zone growth was once again slightly reduced due to the fact that the realisation of GDP in 2004 Q4 fell short of expectations. The low cost of capital, growth in corporate profits and decrease in corporate indebtness all indicate that investment will remain the main source of growth. The anticipated GDP growth in the euro zone is equal to 1.6%, 2.0% and 2.1% in 2005, 2006 and 2007, respectively. A low expected GDP growth rate, delayed effects of euro appreciation, as well as the limited growth rate of unit labour cost will be factors favouring low inflation over the projection horizon: at 1.7%, 1.7% and 1.8% in subsequent years.

### Foreign interest rates

The short-term interest rate path in the euro zone which has been accounted for in the projection is consistent with the expectations of financial markets. 3-month EURIBOR rates rise over the projection horizon, coming to approx. 3.20% at the end of 2007.

### Oil prices

The factors which contributed to the sizeable increase in crude oil prices in 2005 Q1, namely the strong demand and low surplus in production capacities in OPEC countries, will probably fix the prices at their present highs for good. The average oil price expected in 2005 stands at about USD 48 per barrel. In line with forward market quotations and the assessment of leading institutions specialising in oil market analysis, the dominant trend should be towards slight oil price reductions. The average price level accounted for in the projection for 2006 is equal to approx. USD 47 and for 2007 to approx. USD 46 per barrel.

## 4.4 Projection assumptions related to domestic environment

### Public finances

Projection assumptions regarding the state budget expenditures only allow for the effects of legislation currently in force. The expenditures connected with old-age and disability pension indexation are estimated according to the statutory regulations as passed by the Parliament in 2004, i.e. no indexation in 2005, indexation by the 2004-2006 price growth rate in 2006, and no indexation in 2007 again.

The forecast of revenue in main tax categories has been based on effective tax rates. All the effective rates, except for personal income tax rate, have been assumed on their current levels. The effective rate on personal income tax accounts for the abolition of the renovation tax relief in 2006, which affects the PIT revenues in 2007.

### Food prices

The forecast of food and non-alcoholic beverage prices in 2005 accounts for GUS data on the final production estimate of main agricultural and horticultural crops in 2004, recovery in livestock production and the stabilisation of external demand for some Polish agricultural commodities. The forecast points to a pronounced drop in the annual growth rate of food prices down to below 1% in the second half of 2005.

The crop production in 2006-2007 has been assumed at its average level. As regards livestock production in 2006, its assumed level is higher than that of 2005, while in 2007 a reduction in output is envisaged as warranted by swine production cycle.

### Demographic developments

Current demographic trends will cause the size of working-age population (15-64/65) in Poland to grow at a decreasing pace up until 2010. The economic recovery of 2004 helped to halt a falling trend in the labour force participation rate. The projection assumptions as to the shifts in the number of economically active people allow for demographic trends and assume a continuation of participation rates at their 2004 levels. The economically active population rises to approx. 17.2 million at the end of projection horizon.

The number of old-age and disability pensioners is most of all affected by the current legal solutions and previously acquired entitlements as well as the demographic breakdown of the population. The projection assumes no legal changes. As a result of demographic processes, the number of old-age and disability pensioners at the end of 2007 reaches approx. 9.33 million.

## 4.5 Projection of inflation and GDP

Following a period of deceleration brought about by the wearing-off of the pre-accession boom, the economy has been steadily accelerating. According to GUS data on hired employment income, 2005 Q1 marked a fall in the growth rate of real wages in the economy. This would imply the possibility of the continuation of low consumption dynamics as observed at the end of 2004. However, making such a direct association between wage developments and consumption developments would lead to an overly pessimistic judgement about the private consumption growth rate in the period[42]. In the coming quarters private consumption will be rising due to an increase in disposable income of households resulting from the improvement in the labour market, rise in income from private businesses, and additionally from the receipt of transfers, *i.a.*, in the form of direct subsidies to agricultural production. In 2006, conducive to the rise in consumption should also be the scheduled old-age and disability pension indexation.

Amid brightly-looking prognoses for sales, there will appear advancement in investment outlays for the enhancement of production potential. This should consist both in the continuation of already commenced investments but also in opening new projects. Investment process will further be supported by the increasing inflow of EU structural funds, rising possibilities for financing investment from own funds due to good financial performance of enterprises and also by lower than in the previous years cost of capital.

Export growth rate will carry on at its current high level. At the same time as the result of high domestic demand growth rate, the growth of imports will be accelerated and starting from mid-2005 it will outpace that of exports. As a result, the contribution of net exports to GDP growth will turn negative.

Under the above outlined scenario the annual GDP growth rate will amount to approx. 4% in 2005, and in 2006 and 2007 it will step up to 5.0-5.5%. With a 50-percent probability it will range between 4.4-5.7% in 2005 Q4, 3.9-6.2% in 2006 Q4 and 4.3-6.7% in 2007 Q4.

The acceleration in gross capital formation, rise in labour productivity and capital-to-labour ratio coupled with a gradual improvement in the labour market, manifested in the growth of the number of working persons at a pace similar to that in the recent period, will be conducive to a significant increase in potential output, particularly at the end of projection horizon. Nevertheless, actual GDP growth rate will outpace the potential output growth, and so the negative output gap will be gradually closing.

Despite the absence of second-round effects of last year's inflation growth, wage growth rate will be steadily accelerating in pursuit of the rising dynamics of labour productivity. In consequence, unit labour costs will be growing at a moderate rate. In connection with the forecast dwindling in unemployment rate, the improving bargaining position

[42]For more detailed discussion of the uncertainty regarding the composition of GDP in 2005 Q1 see section *Uncertatinty of projection*.

of employees will be additionally slightly contributing to increase in the wage growth rate.

Exchange rate developments over the projection period will be determined by factors affecting its long-term trajectory, i.e., among others, the favourable macroeconomic situation, inflow of EU funds and direct foreign investments. In the perspective of the next few quarters the risk related to the pre-election period and the uncertainty surrounding future fiscal policy may affect the risk premium and also the level of exchange rate.

Future inflation will remain under influence of the mentioned factors and at the beginning of projection horizon it will run below the level expected in the February *Report*. In the coming quarters, inflation decrease in year-on-year terms will be additionally driven by statistical base effect. According to the May projection, on the assumption of unchanged interest rates, with a 50-percent probability inflation will stay within the range of 1.1-2.2% in 2005 Q4, 1.2-3.8% in 2006 Q4 and 0.7-4.3% in 2007 Q4, respectively. Until the mid-2006, the likelihood of inflation staying below the inflation target is significantly higher than the probability of it ranging above the target. Since the mid-2006 these probabilities come close.

## Uncertainty of projection

Every projection is subject to uncertainty. Projection presented in this *Report* is conditional, from which the main sources of its uncertainty derive: uncertainty as to the adopted model of the economy, uncertainty as to the estimates of model equations and uncertainty surrounding the assumed paths of variables exogenous to the model.

The first source of uncertainty is related to the fact that mapping the economic reality on to the econometric models is always approximate. Additionally, the use of models in preparing the projection requires the assumption that the basic economic mechanisms remain unchanged in the sample period and over the projection horizon.

The second source of uncertainty refers to the estimates of the model equations and their fit to the data.

The third source of uncertainty is associated with the expert forecasts concerning the future paths of variables external to the model (exogenous variables) and the assessment of the levels of endogenous variables in 2005 Q1. In a short term horizon, forecasts based on expert knowledge usually yield better results than the use of structural models, yet also in this case the possibility of the actual variable outcomes differing from the assumptions cannot be ruled out. Expert knowledge has also been used to assess the extent to which the forecasts of exogenous variables may deviate from the assumed paths. In the present projection, the largest contribution to the inflation projection uncertainty comes from food prices dynamics. Subject to considerable uncertainty are also the forecasts of oil prices and the assumptions concerning fiscal variables.

The food price forecast is burdened with considerable uncertainty, especially starting from the second half of 2005. The developments in food prices will be affected by the still uncertain crop harvest, particularly as regards 2006, and also the seasonally fluctuating livestock production and the progress of the integration of Polish agro-food market with the EU market.

Oil price forecasting is being hampered by the fact that, due to low world production capacities surplus, oil prices are very vulnerable to speculation and, in consequence, extremely volatile.

Also the outcome of this year's parliamentary elections in Poland may bring about some shifts in central budget expenditure that are now difficult to predict. It also has to be pointed out that a clear impact of current and future fiscal policy on the exchange rate may result in the actual movements in zloty exchange rate diverging from those accounted for in the May projection. Furthermore, it cannot be ruled out that political developments may prove not conducive to creating favourable climate for investment projects and economic growth.

**Another factor increasing the uncertainty of the inflation projection is the structure of economic growth in the past two quarters.** On the one hand, if a significantly lower then expected wage growth rate in the economy in 2005 Q1 is a sign of slowdown in private consumption growth rate, then this might mean that the effect of output gap subduing inflation would last longer than expected. On the other hand, the last few quarters saw a rise in uncertainty surrounding private consumption and the income of households. This is *i.a.* a result of difficulties in assessing the incomes and spending of Poles working abroad. The available information points to the possibility of a pronounced growth in the number of Poles working outside Poland after the EU accession[43].

In order to illustrate the projection uncertainty in a way that allows measurement, the below presented fan charts were constructed for inflation and GDP alike. Still, it has to be emphasised that the charts only account for the uncertainty of the estimates of model equations and uncertainty related to exogenous variables assumptions.

[43] According to the National Accounts, the income and spending of persons working abroad for no longer than a year are classified as the income and consumption expenditures of domestic households.

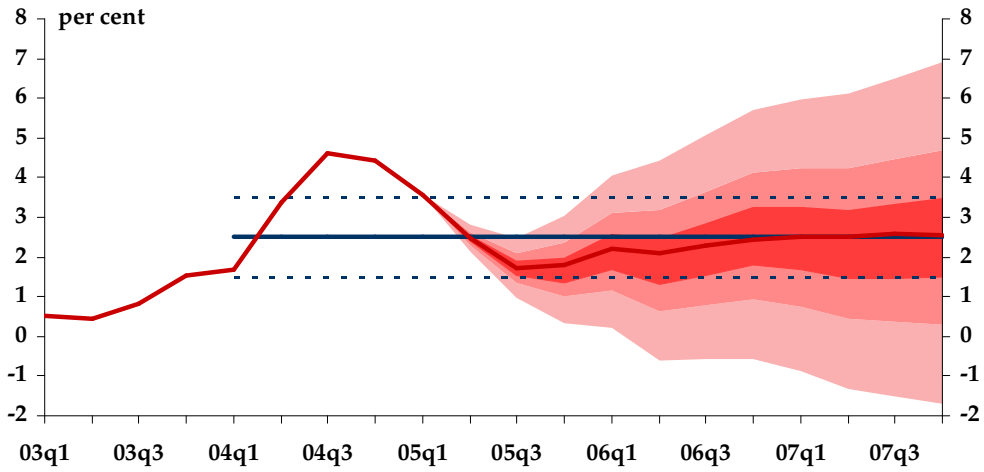


**Figure 4.31:** Inflation central projection, inflation fanchart and MPC's inflation target (y/y change in per cent)
**Source:** NBP.

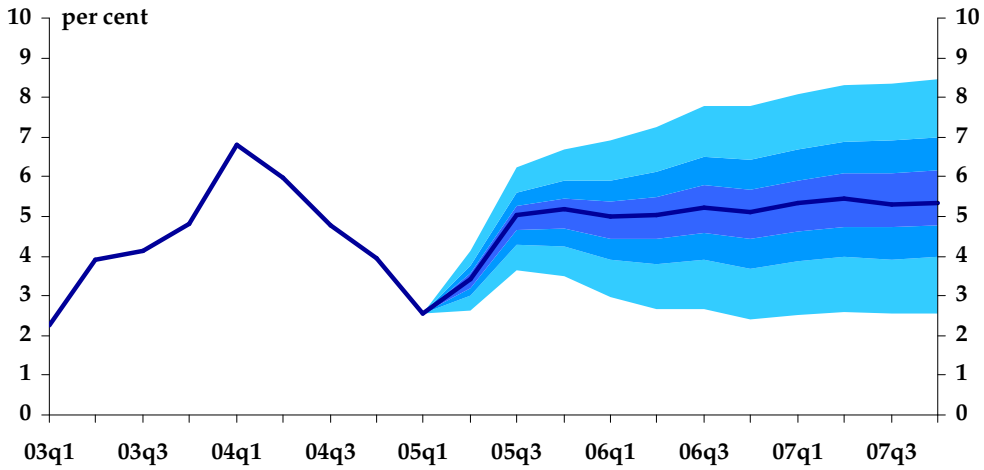


**Figure 4.32:** GDP central projection and GDP fanchart (y/y change in per cent)
**Source:** NBP.

### 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 as the time horizon lenghtens.

In both inflation and GDP projections prepared by the NBP, a probability distribution of their

possible outcomes is determined for each quarter. The most probable outcomes, i.e. the distribution modes for each quarter are adopted as the central projection. At the same time, 30-percent confidence intervals around distribution medians are constructed. These constitute the central strip of the chart, indicated with the darkest shade of the fan. Thus, the probability of GDP or inflation settling within this strip is equal to 30%. Next, the fan is expanded on both sides so that the probability of the variable falling within the extended boundaries increases by another 30 percentage points – 15 points on the above, and 15 on the below. The subsequent extensions form successive bands of the fan marked with increasingly lighter shades. The entire fan represents a 90-percent strip of confidence around the medians – there is a 90-percent probability of inflation or GDP running within the fan.

The chart shows for example that the probability that inflation in 2006 Q1 will stay within the tolerance band around the inflation target amount to approx. 58%, the probability of higher inflation equals to approx. 12%, and the probability of lower inflation to approx. 30%. For 2007 Q1 these probabilities correspond to 37%, 31% and 32%, respectively. Except for 2005 Q2 and Q3, the inflation projection reveals downside-risk, which accounts for a greater probability of inflation running below the central path than above it. Until mid-2007, the asymmetry of GDP projection is also moderately downward.

# Annex

## The voting of the Monetary Policy Council members on motions and resolutions adopted in 2005 Q1

- **Date:** 26 January 2005

  **Subject matter of motion or resolution:**
  Motion to change the monetary policy bias from tightening to neutral
  **MPC decision:**
  The motion was not passed (due to tie vote, the Chairman's casting vote was decisive)

  **Voting of the MPC members:**

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

- **Date:** 25 February 2005

  **Subject matter of motion or resolution:**
  Motion to change the monetary policy bias from tightening to easing
  **MPC decision:**
  The MPC changed its monetary policy bias from tightening to easing

  **Voting of the MPC members:**

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

- **Date:** 25 February 2005

  **Subject matter of motion or resolution:**
  Motion to change the monetary policy bias from tightening to neutral
  **MPC decision:**
  Motion did not receive a majority vote

  **Voting of the MPC members:**

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

- **Date:** 30 March 2005

  **Subject matter of motion or resolution:**
  Resolution on the level of reference rate, lombard rate, deposit rate and rediscount rate of the National Bank of Poland
  **MPC decision:**
  The MPC reduced the level of all interest rates by 0.5 percentage point

  **Voting of the MPC members:**

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