

National Bank of Poland

Monetary Policy Council

**Report on monetary policy
implementation in 2006**

Warsaw, May 2007

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1. Monetary policy strategy in 2006

The present report is concerned with the implementation of the monetary policy in 2006, the guidelines for which were formulated in the document *Monetary Policy Guidelines for the Year 2006*.

According to Article 227 para. 1 of the Constitution of the Republic of Poland “the National Bank of Poland shall be responsible for the value of Polish currency.” The Act on the National Bank of Poland of 29 August 1997 states in Article 3 that “the basic objective of NBP activity shall be to maintain price stability, and it shall at the same time act in support of Government economic policies, insofar as this does not constrain pursuit of the basic objective of the NBP.”

Contemporary central banks understand price stability as a rate of inflation low enough as not to exert negative influence on investments, savings and other important decisions taken by economic agents. Ensuring thus understood price stability is a fundamental way in which the central bank contributes, by means of its decisions, to a high and sustainable economic growth.

The Monetary Policy Council (MPC) bases its policy on direct inflation targeting strategy (DIT). International experience shows that this strategy is an effective method of ensuring price stability. In the *Monetary Policy Strategy beyond 2003*, accepted in February 2003, the MPC adopted the so-called permanent inflation target at the level of 2.5%, with a symmetrical tolerance band for deviations of +/- 1 percentage point.

In the *Monetary Policy Guidelines for the Year 2006*, the Council explained how it understood the inflation target and the way of its implementation:

- First, the notion of *permanent* inflation target means that it refers to inflation measured as a year-on-year change in prices of consumer goods and services in each month compared to the corresponding period of the preceding year. For a better understanding of inflation processes it is also justified to use annual and quarterly inflation indices such as those used in the NBP’s inflation projection and in the central budget. Core inflation indices also play an important role in the assessment of inflationary pressure.
- Second, the adopted solution means that monetary policy is unequivocally focused on keeping inflation as close to the 2.5% target as possible, rather than only containing it within a deviation band without specifying its centre. The adopted solution provides anchoring for

inflation expectations, thus facilitating the pursuit of monetary policy, which in case of shocks requires smaller and less frequent interest rate changes.

- Third, shocks are inevitable in the economy. The scale and duration of inflation deviation from the adopted target may differ depending on the strength of the shock and the degree of inertia of inflation expectations. The central bank usually does not respond to those deviations from the inflation target which it deems temporary and which lie within the tolerance range around the target. In countries with a permanently low inflation, the central bank does not have to respond even in the situation when inflation leaves the tolerance band temporarily. In the case of shocks viewed as leading to a permanent deviation from the inflation target, the central bank adjusts its monetary policy accordingly.
- Fourth, monetary policy reaction to shocks will also depend on their causes and nature. The reaction to demand shocks is a relatively minor issue, since in this case inflation and output move in the same direction. Under inertial inflation expectations, an increase in interest rates weakens economic activity and, in a longer perspective, also inflationary pressure.

Supply shocks pose a more difficult problem from the point of view of monetary policy, since in this case output and inflation move in opposite directions. Inappropriate monetary policy reaction may have far-reaching negative consequences for the economy. An attempt to fully neutralise the impact of a supply shock on inflation through monetary policy may lead to an unnecessary plunge in output, as the supply shock itself already has a negative effect on demand and investment. On the other hand, an attempt to fully accommodate a supply shock resulting in a price increase and output decrease – by pursuing an overly loose monetary policy – usually leads to permanently higher inflation. This, in turn, requires a far more restrictive monetary policy in subsequent periods, bringing about a relatively strong deceleration in economic growth. Reaction of the central bank should depend on the assessment of the shock's durability.

- Fifth, most of supply shocks are transitory and limited in scale. Thus, they do not require an immediate reaction. However, in the case of strong shocks even temporary acceleration in price growth may bring about a relatively permanent rise in inflation expectations and, in consequence, an increase in inflation due to the emergence of wage demands. In such a situation, the monetary policy has to prevent secondary effects of the supply shock (the so-called second-round effects). The risk of such effects arising is substantial in countries with a short history of low inflation. Very useful in analysing supply shocks are core inflation

indices, which help, at least roughly, to distinguish temporary effects from permanent changes in inflationary pressure.

- Sixth, because the reaction of output and inflation to the pursued monetary policy is delayed, its influence on the level of current inflation is limited. Current decisions of the monetary authorities affect price developments in the future, just as current inflation is influenced by interest rate changes made several quarters ago. Unfortunately, these lags are not constant and depend, to a large extent, on structural and institutional changes in the economy. Changes in the transmission mechanism result in a situation when central banks can only approximately assess the time lag between an interest rate decision and its strongest observed impact on real variables (output, employment) and then on inflation.
- Seventh, monetary policy affects the economy not only through changing interest rates but also through keeping them unchanged for a period of time. The decision to keep interest rates unchanged for several periods (months or quarters) has substantial consequences for the economy because it leads to a gradual widening or narrowing of the output gap.
- Eighth, monetary policy is pursued under uncertainty. Large uncertainty is due, among others, to the fact that inflation projection models utilised by the central bank may become inadequate for the description of economic processes owing to the ongoing structural changes in the economy. This means that (a) while making decisions it is necessary to take into account all available information, rather than just the inflation projection; (b) it is not possible to adopt a simple policy rule which could be known *ex ante* to market participants; and (c) forward-looking monetary policy has to be presented to the public as an attempt to achieve the inflation target under large uncertainty, rather than an exercise of strict control over economic processes.
- Ninth, in assessing monetary conditions, not only the level of real interest rates should be considered but also the level of the real exchange rate.
- Tenth, an important input into monetary policy decision-making process is the balance of risks affecting the probabilities of future inflation running above or below the target. This balance is based on the inflation projection, the assessment of the actual economic developments, which may deviate from the scenario presented in the projection, as well as the course of variables and information not accounted for directly in the projection. While assessing the factors influencing future inflation, the Monetary Policy Council will also take into account the duration of the period of low inflation.

The Council also expressed its conviction that it would be most beneficial for Poland to pursue an economic strategy aimed at creating conditions for the introduction of the euro at the earliest possible date.

2. Monetary policy in 2006

While assessing the monetary policy in 2006 it has to be borne in mind that, similarly to the previous years, it was pursued under uncertainty. Decisions of the central bank are based on information and forecasts available at the moment they are taken, which means that, in hindsight, they do not necessarily have to seem right from the point of view of the need to keep inflation as close to the target as possible. Due to the very nature of monetary policy, and in particular the significant lags between the central bank's decisions and their effects for the economy, decisions have to be taken in advance and their later assessment has to account for their accompanying uncertainty. Therefore, the assessment of the past monetary policy has to account for the information available at the moment a particular decision was taken, rather than the information available in a later period.

The main source of monetary policy uncertainty is the fact that there is a several-quarter lag between the moment of an interest rate decision and its strongest impact on inflation. Thus, the inflationary processes in 2006 were largely affected by the monetary policy pursued back in 2004-2005. In turn, the monetary policy conducted in 2006 will primarily influence inflationary processes in 2007 and 2008. Due to the lags in the transmission of monetary policy impulses, one of the inputs to the Monetary Policy Council's decisions on interest rates in 2006, as in the previous years, were inflation projections.¹

Monetary policy in 2006 was pursued amid gradual inflation growth as measured both with the Consumer Price Index (CPI) and net inflation.² This inflation rise, however, began at a very low level and throughout the year inflation remained below the target set by the MPC (at 2.5%). Moreover, through the most part of the year (except for August and September) inflation was running below the lower tolerance limit for deviations (i.e. 1.5%). The annual CPI rose from 0.6% in January to 1.4% in December 2007. In average annual terms, CPI growth amounted to 1.0%.

Such a low level of inflation resulted from the impact of several factors whose different effects are difficult to estimate precisely. The low inflation was connected with the zloty exchange rate appreciation of 2004-2006, though in 2006 the scale of the appreciation was

¹ Inflation projections prepared in 2006 and published in *Inflation Reports* have been presented in Appendix 5.

² Net inflation is CPI inflation net of food and fuel prices.

insignificant. The low path of inflation was also connected with the NBP's interest rate policy in 2004, which was aimed at preventing the impact of a price shock after Poland's entry to the EU on future inflation, and the monetary policy decisions taken in 2005. Additionally, price growth in 2006 was slowed down by unexpectedly weak growth of domestic demand and GDP in 2005. Another factor easing wage and inflationary pressures was a high, though declining, rate of unemployment. These processes coincided with such globalisation processes as the growing openness of the economy and the ensuing rise in price and wage competition, an increase in imports of goods from countries with low production costs and a reduction in the impact of high oil prices on inflation³, which have been restraining the growth of consumer prices.

In 2006 the intensifying recovery of the Polish economy was accompanied by a gradual rise in inflation. There was an acceleration in consumption demand and an even more intensive revival in investment demand. Fast GDP growth led to a gradual closing-up of the output gap. At the same time, export growth remained at a very high rate, which was connected with Poland's entry to the European Union and a high growth of the economies of our main trading partners. The heightened export potential of the Polish economy was confirmed by the fact that, despite increased economic growth and a rise in import growth, the current account deficit in 2006 remained at a safe level of 2.3% of GDP.⁴

Economic growth contributed to a fast increase in the number of working persons and a concurrent drop in the unemployment rate. At the same time, wages were growing faster than labour productivity. In 2006, despite a drop in unit labour costs in industry, the increase in unit labour costs in the economy as a whole was conducive to inflation growth. Inflation growth was also fuelled by rising import prices, though their rise was being mitigated by declining prices of some goods, particularly those imported from countries with low production costs.

The prices of food and fuels had a bi-directional impact on inflation in 2006. In the first half of the year, food price growth was a factor lowering inflation, but starting from August food prices began to raise inflation, due to the drought resulting in lower harvest. Fuel prices were adding to inflation growth until August. In the final months of 2006, however, the decline of crude oil prices accompanied by zloty appreciation against the US dollar was reducing inflation.

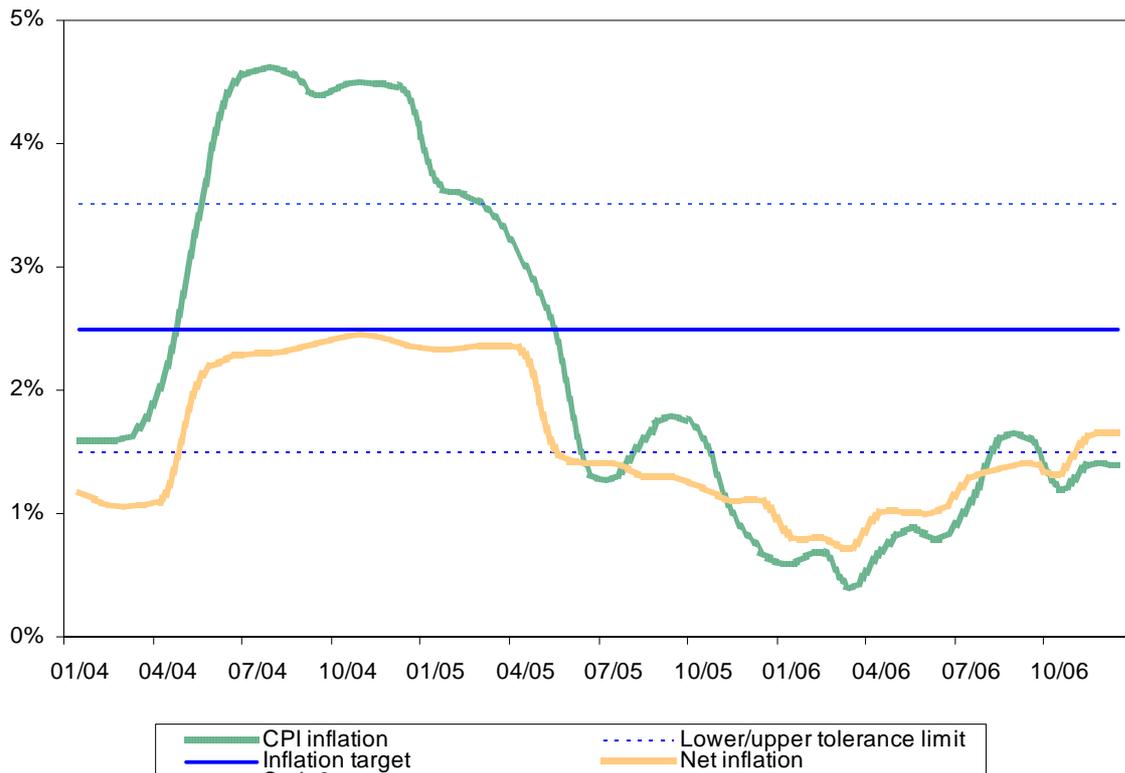
³ Detailed information on the path of the domestic product and its components and prices are to be found in Appendices 1 and 2.

⁴ Detailed information on the balance of payments in 2006 have been presented in Appendix 3.

In annual terms, the joint impact of the above mentioned factors on inflation was insignificant, which is confirmed by only a small discrepancy between CPI and net inflation indicators.

Figure 1

Inflation vs. inflation target in 2004-2006



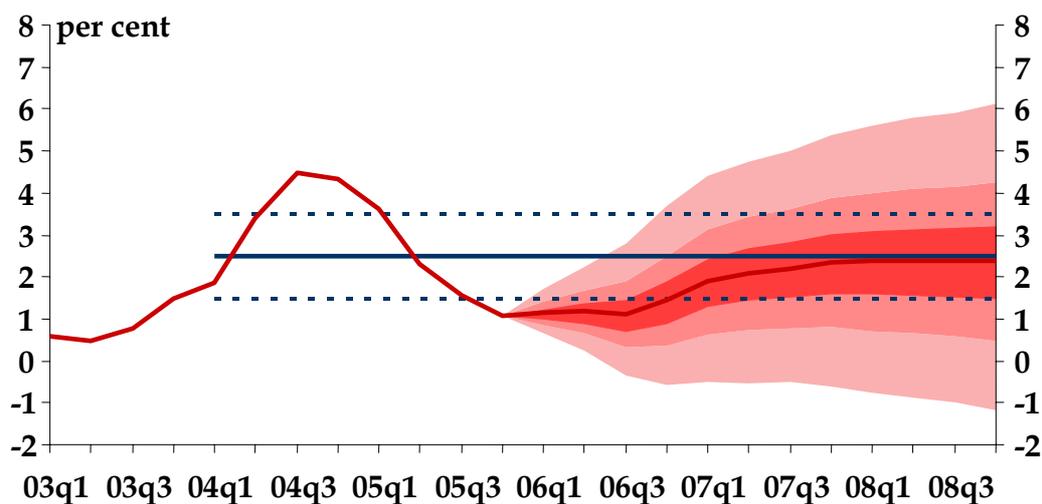
Source: GUS and NBP.

In 2006 the Monetary Policy Council lowered the interest rates on two occasions: in January and February. The January inflation projection indicated that inflation would rise steadily over the monetary policy transmission horizon, return to the inflation target (of 2.5%) at the end of 2007 and then remain close to it in 2008. However, the forecast inflation was growing at a slower rate than in the previous projection, published in August 2005. The assessment of the balance of factors influencing future inflation, made by the MPC in January 2006, indicated that the probability of inflation running below the target throughout the horizon of the monetary policy transmission is markedly higher than the probability of inflation exceeding 2.5%. Hence,

the Council decided to cut the NBP's interest rates by 0.25 percentage point at its January meeting.

Figure 2

Central inflation projection, fan chart of future inflation path and inflation target of the MPC – January 2006



Source: *Inflation Report*, January 2006, NBP.

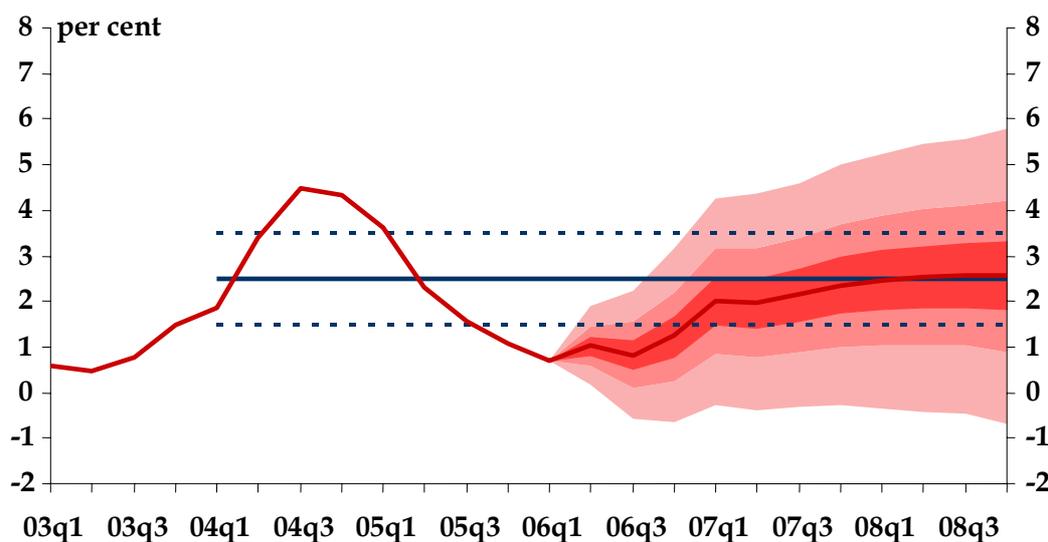
The release of new data, including those pointing to zloty appreciation and a lower than expected level of inflation in January, which indicated increased probability of inflation running below the result of the January projection, persuaded the MPC to cut interest rates by another 25 basis points in February. As a result, the reference rate amounted to 4%.

The information published in the subsequent months revealed a consolidation of the growth tendencies in the Polish economy. GDP growth in 2006 Q1 exceeded 5% and, in line with the April macroeconomic projection, a similar rate of growth was to be sustained in the next years.

The rate cuts in the first quarter, faster economic growth as well as an improved labour market situation and forecast acceleration in unit labour costs all contributed to the April inflation projection signalling a build-up in inflationary pressure. The projection indicated that the output gap would remain negative until 2008, but it would be closing up faster than had been expected in the January projection. Another risk factor which surfaced in the second quarter was a rise in wage pressures in the budget sector.

Figure 3

Central inflation projection, fan chart of future inflation path and inflation target of the MPC – April 2006

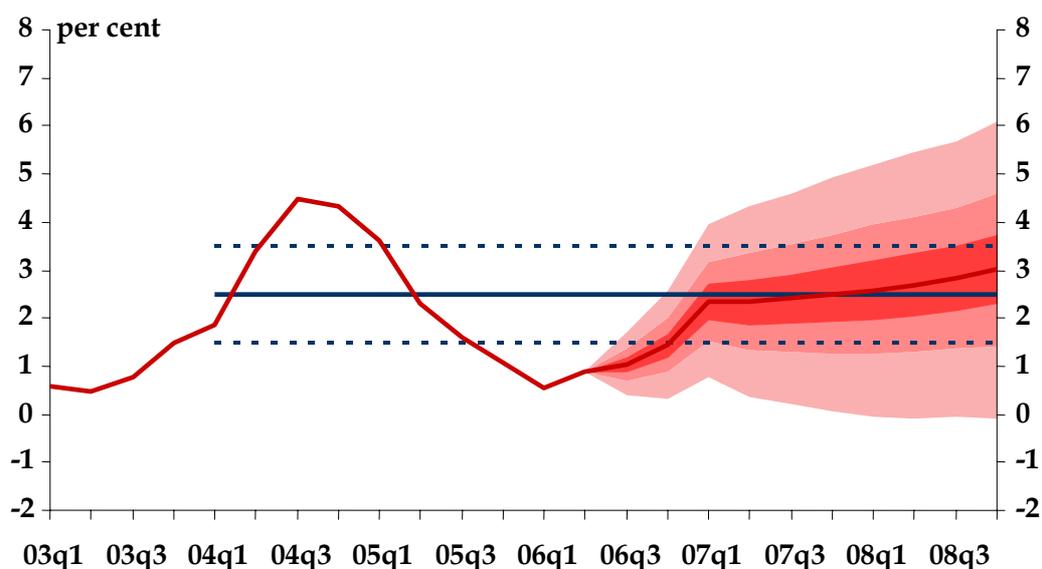


Source: *Inflation Report*, April 2006, NBP.

The following months saw a gradual consolidation of the growth tendencies in the Polish economy. It was estimated that GDP growth in Q2 once again exceeded 5%, while the next projection prepared in July indicated that inflation would be rising steadily over the monetary policy transmission horizon to return to the inflation target (of 2.5%) in the second half of 2007. The projection indicated that in 2008 inflation would continue to increase gradually and it would remain within the tolerance band for deviations from the inflation target. Moreover, the July projection pointed to higher paths of domestic demand, GDP and inflation growth than those accounted for in the April projection. The strengthening economic recovery and a rising probability of inflation growth confirmed the Council's conviction that interest rates should not be reduced any further, despite the current inflation running at a low level.

Figure 4

Central inflation projection, fan chart of future inflation path and inflation target of the MPC – July 2006



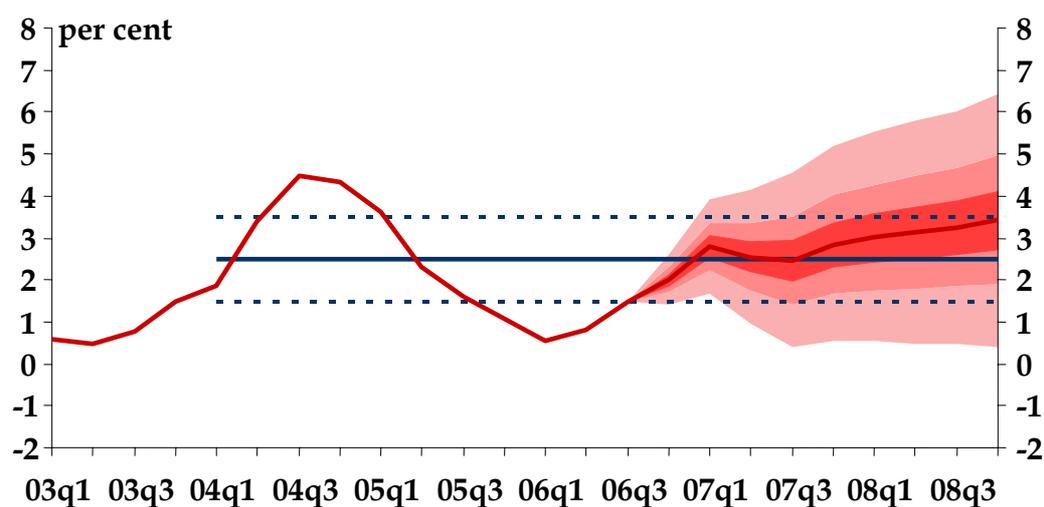
Source: *Inflation Report*, July 2006, NBP.

The data released in subsequent months confirmed that the recovery of the Polish economy was of permanent nature. The economic growth in Q2 proved significantly higher than anticipated in the July projection, while the monthly data, among others, on retail sales and industrial output warranted the expectation that the economic growth in Q3 could in fact be underestimated, as well. Both the current CPI and net inflation was growing slowly but steadily. In August the CPI rose above the lower limit of the tolerance band for deviations around the inflation target, even though this rise was primarily the outcome of a food price growth resulting from the drought.

The inflation projection prepared in October envisaged a gradual inflation growth over the monetary policy transmission horizon, which in 2007 Q1 would bring inflation back to the target (2.5%). The projection showed that inflation would continue to rise gradually in 2008 and in the second half of 2008 it would be close to the upper tolerance limit for deviations from the inflation target.

Figure 5

Central inflation projection, fan chart of future inflation path and inflation target of the MPC – October 2006



Source: *Inflation Report*, October 2006, NBP.

The data released by the end of 2006 did not change this picture in any significant way. In particular, sustainability of the economic recovery and a gradual build-up in inflationary pressure were confirmed by the data on construction and assembly production, increased investment layouts in large and medium-sized enterprises and the number of working persons in the economy in Q3.

Due to the lags in the transmission of monetary policy impulses into the economy, the decision-making process on the level of interest rates accounted primarily for the developments anticipated for the future. Thus it is obvious that forecasts and in particular inflation projection have a great significance. However, a forecasting model is, by nature, an imperfect tool and therefore the projection results it yielded were an important, though not the only one, input to the decision-making process.

During its meetings in 2006, the Council many times discussed the significance of factors which might not have been sufficiently accounted for in the forecasting model. The issues under discussion included, among other things, the outlook for sustaining the recovery in the labour market and the ensuing pressure on wage growth in Poland, the impact of globalisation processes

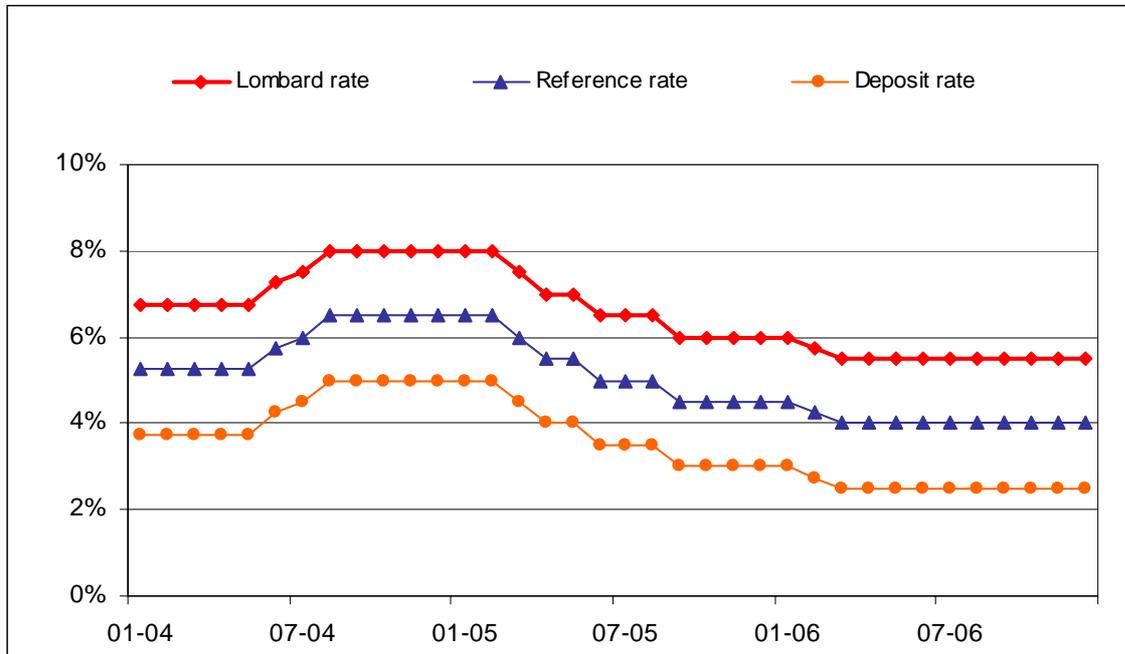
and paths of world commodity prices on the outlook of economic growth and inflation in Poland, the perspectives for an improvement in public finance situation and also short- and medium-term impact of Poland's entry to the EU on zloty exchange rate and inflation. The following problems were also addressed during the Council's meetings: the future impact of imports from low-cost production countries on inflation in Poland, the significance of sustaining low net inflation for future CPI inflation, experiences of other countries where inflation ran below the inflation target for a period of time and the outlook for the exchange rate of the zloty. The Council also considered the possible impact of the following factors on the inflation outlook in Poland: increased significance of global versus domestic factors, a possibly stronger than expected weakening of global economic growth in 2007, behaviour of monetary aggregates and financial standing of enterprises.⁵

An important element of a monetary policy based on the strategy of direct inflation targeting is the communication with a widely-understood economic environment. For this reason, the Council presents its assessments of the current economic situation and future economic developments to the public. In 2006, similarly as in the previous years, the most important instruments of communication were quarterly *Inflation Reports*, monthly press releases and press conferences held after meetings of the MPC. In line with the *Monetary Policy Guidelines for the Year 2006*, the Council strived to increase the transparency and unambiguity of the communication with the public. An important element of enhancing the transparency of the pursued policy was an ever more exhaustive presentation of the most important problems discussed at the decision-making meetings of the MPC offered in the Chapter "Monetary Policy" forming part of the *Inflation Report*. Apart from that, the Council was undertaking steps to initiate the publication of the minutes of its decision-making meetings.

⁵ A more detailed description of discussion and arguments raised during the meetings is to be found in *Inflation Reports* published in 2006 and in January 2007.

Figure 6

NBP interest rates in 2004-2006



Source: NBP

3. Monetary policy instruments

In 2006 the NBP pursued its monetary policy influencing the inflation level through the interest rate channel. The MPC set the official interest rates of the NBP, which in turn determined the yields on monetary policy instruments, and established the principles for conducting open market operations. To shape short-term interest rates, the NBP used the following instruments: open market operations, lending and deposit operations (standing facilities) and a reserve requirement. Influencing the level of short-term interest rates, the MPC strived to achieve such level of interest rate in the economy that would be consistent with the adopted inflation target.

3.1 Liquidity surplus in the banking sector

Just like in the preceding year, liquidity surplus of the banking sector was rising in 2006. Its level, measured as the average annual balance of NBP money market bills, amounted to PLN 19,758 million and was PLN 3,059 million (i.e. 18%) higher than the average level of 2005. Total banking sector liquidity absorption, measured with the volume of NBP money market bills issued and the level of deposits held by the Ministry of Finance at the NBP, averaged PLN 24,823 million in 2006 and was PLN 3,116 million higher than in 2005. Additionally, there were bonds⁶ in circulation with maturities in 2012 in the amount of PLN 7,816 million.

The greatest contribution to banking sector liquidity was made by foreign exchange operations of the central bank. In the period between 1 January and 31 December 2006, the balance of foreign currency sale/purchase transactions of the NBP, mainly resulting from the inflow of EU funds, amounted to PLN 5,589 million on the purchase side. Important factors contributing to an increase in liquidity were, among others, transfers of the NBP profit to the central budget, discounts on NBP bonds and interest paid on the required reserve and NBP bonds.

The increase in surplus liquidity was mainly limited by raising the level of notes and coin in circulation – by the average of PLN 9,223 million in 2006. Also an increase in reserve requirement (of PLN 1,277 million) and a rise in the central budget's deposits with the NBP (of PLN 529 million) had a similar effect.

⁶ Issued by the NBP in 2002, in compliance with the Resolution No. 5/6/PKK/2002 of the Management Board of the NBP of 8 February 2002 on the issuance of bonds in exchange for some bonds purchased by banks in connection with the reduction of reserve requirement rates.

Starting from 2006, in order to streamline commercial banks' management of the current liquidity level, the NBP extended its range of published data. Apart from the previously released information on the level of required reserves, current account of banks with the NBP, overnight deposit and the use of lombard facility, the NBP now publishes, on a weekly basis, the forecast of an average level of the current account of banks within the maturity of a basic open market operation. Moreover, the average value of the current account of banks at the NBP in the required reserve maintenance period is updated on a daily basis.

3.2. Monetary policy instruments

Interest rates

In 2006 the fundamental monetary policy instrument was the short-term interest rate. The Monetary Policy Council determined the level of NBP interest rates, which, in turn, influenced the interest on monetary policy instruments, i.e. open market operations, reserve requirements and standing facilities.

The main interest rate of the NBP was the reference rate. This rate influenced the level of interest rates with maturities comparable to the maturity of basic open market operations (WIBOR SW⁷). The deposit rate and the lombard rate of the NBP determined the fluctuation band of overnight interest rates in the interbank market.

In 2006, the Monetary Policy Council lowered the NBP's interest rates on two occasions. In total, the reference rate was cut from 4.50% to 4.00%, the lombard rate from 6.00% to 5.50% and the deposit rate from 3.00% to 2.50%. The width of the tolerance band for deviations of short-term market rates remained unchanged at +/-1.50 percentage point.

⁷ WIBOR SW (Warsaw Interbank Offered Rate Spot Week) – rate at which banks are ready to grant loans in the unsecured interbank deposit market for the period of 7 days. It is calculated as the arithmetic mean from quotations submitted by participants of the fixing conducted each business day at 11.00 AM and published on Reuters news website (WIBO). The fixing is organised by ACI Polska.

Table 1**Decisions of the Monetary Policy Council on the NBP interest rates in 2006**

Decision date*	Decision:
31 January 2006	<ul style="list-style-type: none"> - Lowering of minimum yield on 7-day open market operations from 4.5% to 4.25% - Lowering of the lombard rate from 6.0% to 5.75% - Lowering of the rediscount rate from 4.75% to 4.5% - Lowering of the deposit rate from 3.0% to 2.75%
28 February 2006	<ul style="list-style-type: none"> - Lowering of minimum yield on 7-day open market operations from 4.25% to 4.0% - Lowering of the lombard rate from 5.75% to 5.5% - Lowering of the rediscount rate from 4.5% to 4.25% - Lowering of the deposit rate from 2.75% to 2.5%

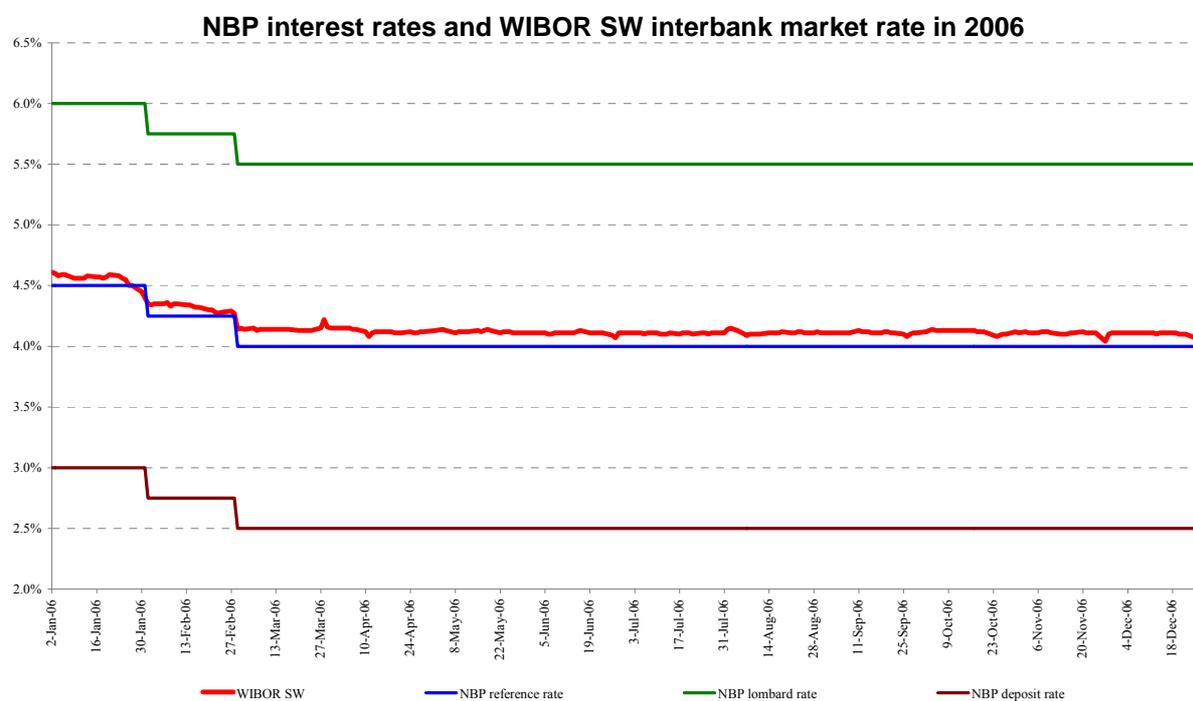
Source: NBP data.

*Decisions came into force on the following business day.

The reference rate cuts were followed by decreases of short-term interest rates in the interbank market. WIBOR SW rate oscillated around the NBP reference rate and remained in the corridor for deviations delineated by the lombard and deposit rates of the NBP. By and large, this rate was above the NBP reference rate, and its average deviation from the reference rate in 2006 amounted to 11 basis points and was 2 basis points higher than in the preceding year. The average deviation from the NBP reference rate in 2006 amounted to 13 basis points for POLONIA⁸ rate and 14 basis points for WIBOR O/N, compared with 26 and 22 basis points, respectively, in 2005.

⁸ POLONIA (Polish Overnight Index Average) is an average overnight rate weighted by the volume of transactions in the market of unsecured interbank deposits. The NBP publishes the rate at the Reuters website (NBPS) every day at 17.00 hours.

Figure 7



Source: NBP data.

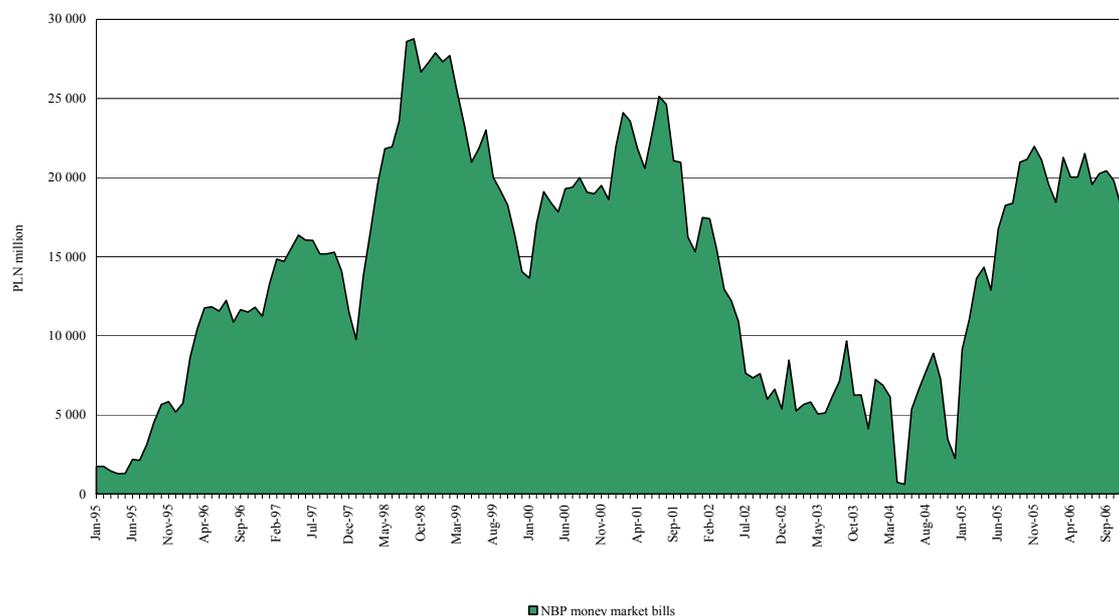
Open market operations

In 2006 open market operations were the principal instrument for maintaining short-term interest rates at a level consistent with the pursuit of the MPC-established inflation target. As regards these operations, the NBP could make use of basic, fine-tuning and structural operations.

Basic operations consisted in the issuance of the NBP money market bills with 7-day maturity. They were performed, similarly as in the preceding year, on a weekly basis – every Friday.

Figure 8

Average monthly balance of NBP money market bills in 1995-2006



Source: NBP data.

Starting from 1 January 2006 the access to basic operations was granted to all the banks participating in the SORBNET system which at the same time had an account at the NBP's Securities Register and the ELBON application.

In 2006 the National Bank of Poland, apart from the basic open market operations, could also recourse to conduct fine-tuning operations. Fine-tuning operations could be used in an event of unexpected short-term movements in the liquidity of the banking sector which could potentially lead to undesirable, from the point of view of monetary policy, fluctuations in short-term interest rates. Fine-tuning operations could take the form of both liquidity-absorbing and liquidity-providing operations. These operations could be accessed by 13 banks which were most active in the money and foreign exchange markets and which signed contracts⁹ with the NBP to act as a Money Market Dealer. In 2006, however, there were no grounds to conduct any fine-tuning operations.

⁹ Banks' activity in the money and foreign exchange markets is assessed on a yearly basis according to NBP-established qualification criteria of the Dealer Activity Index (DAI).

Neither was it necessary in 2006 to modify the long-term liquidity structure of the banking sector. Structural operations could take the form of the NBP issuing or early repurchasing its bonds and the purchase or sale of securities in the secondary market.

Reserve requirement

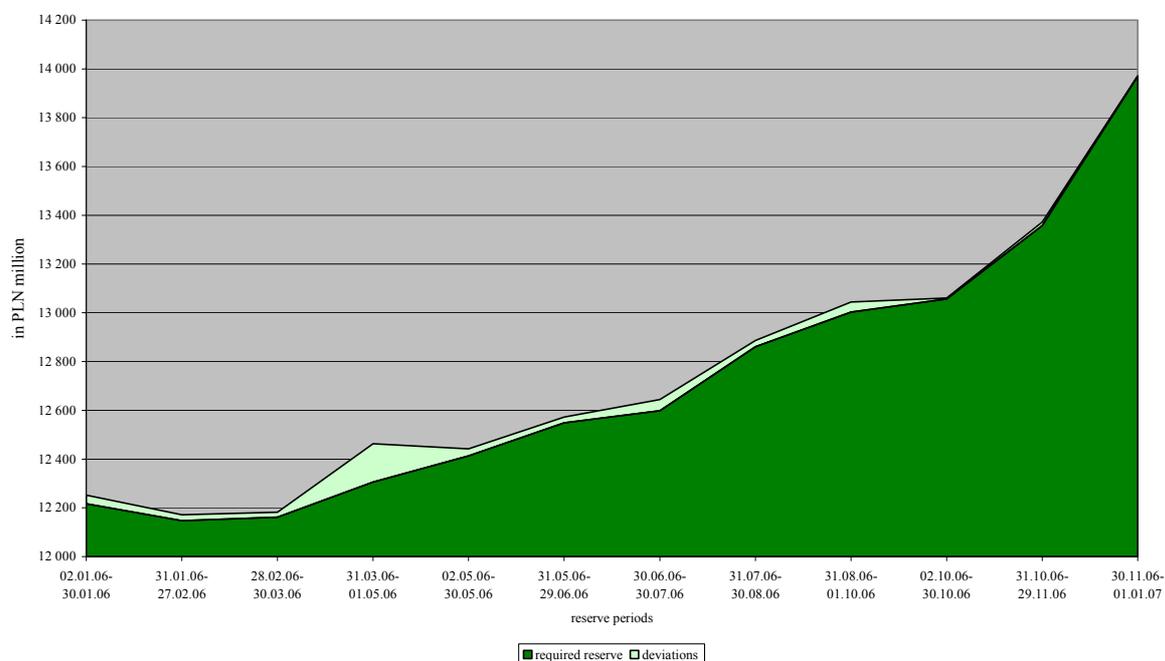
In 2006 the obligation to hold reserve requirements in the accounts with the NBP applied to banks and branches of foreign banks operating in Poland. Reserve requirement was held in the averaged system. Banks were obliged to maintain an average balance of funds in accounts with the NBP during the reserve period at the level not lower than the value of the reserve requirement.

Required reserves were calculated on the basis of bank's collected deposits and funds received from the sale of securities. Excluded from the calculation base were funds received from a different domestic bank, acquired from abroad for at least two years and deposited in credit and savings accounts at building societies and in individual pension accounts. Required reserves were calculated and held in the Polish zloty. The rates of the reserve requirement were not changed in 2006 and amounted to 3.5% for all liabilities, except for funds acquired from repo transactions, for which the required reserve rate was 0%. Banks reduced the amount of calculated reserve requirement by the equivalent of EUR 500 thousand. Interest was charged on required reserve funds. Starting from May 2006, the Monetary Policy Council set the interest rate at the level of 0.9 of the rediscount rate.

The amount of required reserves is PLN 13,970 million as of 31 December 2006, showing an increase of PLN 1,905 million (15.8%) as compared with 31 December 2005.

Figure 9

Changes in reserve requirement level and deviations from required reserve in 2006



Source: NBP data.

The greatest contribution to the increase in the reserve balance in 2006 was made by:

- an increase of 11.9% in deposits included in the required reserve's calculation base to which applied a positive rate of reserve,
- termination, on 1 December 2006, of one bank's exemption from the obligation to maintain reserve requirement.

All reserve periods marked a slight surplus of the average balance of funds (of PLN 35 million, i.e. 0.28%, on average) in relation to the required level of reserve requirement. In particular periods this surplus ranged from PLN 2 million in December (0.02%) to PLN 157 million in April (1.27%). The minimal differences between the required reserves due and held persisting in particular reserve periods resulted from:

- proper asset management at banks,
- banks' use of instruments facilitating asset management in the NBP accounts (intraday credit, deposit and lombard facilities), and

- introduction of the arrangement under which the interest is only charged on reserve funds to the amount of the required reserve (starting from 1 May 2004).

Standing facilities

Standing facilities included two instruments offered by the central bank – deposit facility and lombard facility. They were meant to stabilise the liquidity level in the interbank market and limit the scale of fluctuations of the market overnight interest rates. These operations were initiated by commercial banks. Through such operations banks could deposit their surplus liquidity or supplement their liquidity deficits at the central bank.

The deposit rate was the lower limit for the fluctuations of the overnight rate at the interbank market. The lombard rate determined the maximum cost of funding with the NBP and its upper ceiling at the same time.

- In 2006, the total amount of term deposits placed by the banks with the NBP on an overnight basis equalled PLN 54.7 billion. This was 3.9% lower than deposits placed in the preceding year, which totalled at PLN 56.9 billion. The average daily level of overnight deposits amounted to PLN 149.9 million, compared to PLN 155.9 million in 2005.
- The total value of overnight deposits placed by banks ranged between PLN 0.3 million and PLN 5.7 billion. The highest amounts were deposited by banks on the last days of the required reserve maintenance periods.
- In 2006 banks made use of lombard facility collateralised with Treasury securities supplementing their current liquidity at the NBP, mainly towards the end of required reserve maintenance periods. The total amount of credit used in 2006 was PLN 15.5 billion, compared with PLN 10.3 billion in 2005. The average daily use of lombard facility was PLN 42.6 million as compared with PLN 28.4 million in 2005.

Other operations

Intraday credit remained an important element of the settlement system. It was a non-interest bearing loan from the central bank repayable on the same working day. Intraday credit served to facilitate banks' liquidity management during the business day and streamline interbank settlements. It was collateralised with Treasury securities.

In 2006 the NBP offered:

- Intraday credit in the zloty.

The daily liquidity injection for banks under intraday credit ranged from PLN 4.6 to 17.1 billion and was 48 % higher in relation to 2005.

- Intraday credit in the euro serving to ensure settlement liquidity in the SORBNET – EURO system.

It was collateralised by selected Treasury securities accepted by the European Central Bank.

In 2006 the daily liquidity injection for banks under this intraday credit fluctuated from EUR 251.7 thousand to EUR 5.0 million.

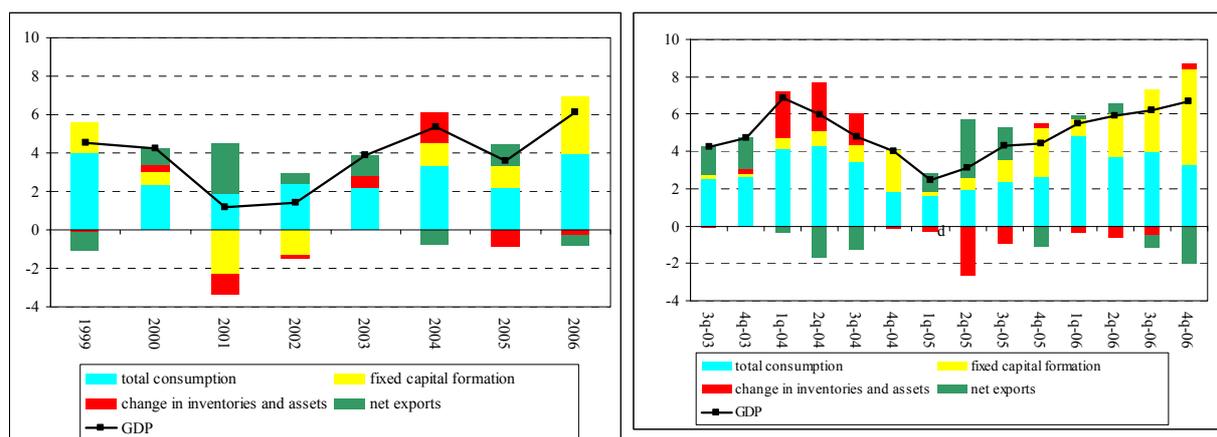
Appendix 1. GDP and final demand

In 2006, domestic demand grew by 6.6% as compared with a 2.4% rise in 2005. The rise in the annual growth of domestic demand resulted from significantly higher private consumption (an increase from 2.0% to 5.2%) and gross fixed capital formation (a rise from 6.5% to 16.5%) in relation to the preceding year. As in 2006 public consumption rose by 3.9%, the total growth in consumption amounted to 4.8%. In 2006, inventories were growing at a slower rate than one year before and the growth rate of gross capital formation (14.1%) was lower than investment growth. Exports grew slower than imports, which means the reversal of the tendency of 2000-2005 (except for 2004).

The growth rate of gross value added¹⁰ in 2006 was at 6.2%, while a year before this category recorded a rise of 3.3%. The rise in gross value added in 2006 primarily resulted from a recovery in market services and industry (their contributions to total value added growth amounted to 2.4 percentage points and 2.3 percentage points, respectively), and in the second half of the year also in construction. The scale of value added growth in market services was determined by trade and repairs.

Figure 10

Share of final demand components in the GDP growth



Source: NBP calculations based on GUS data.

¹⁰ GDP equals gross value added increased by the net balance of taxes on products (including import duties) and product subsidies.

GDP and domestic demand 1999 – 2006

	1999	2000	2001	2002	2003	2004	2005	2006
	Growth rate							
GDP	4.5	4.3	1.2	1.4	3.9	5.3	3.6	6.1
Domestic demand	5.2	3.1	-1.3	0.9	2.7	6.0	2.4	6.6
Consumption	5.0	2.9	2.3	3.0	2.6	4.0	2.7	4.8
Private consumption	5.4	3.1	2.3	3.4	2.0	4.4	2.0	5.2
Capital formation	6.0	3.9	-13.4	-7.2	3.3	14.7	1.4	14.1
Gross fixed capital formation	6.6	2.7	-9.7	-6.3	-0.1	6.4	6.5	16.5
Exports	-2.5	23.2	3.1	4.8	14.2	14.0	8.0	14.5
Imports	1.0	15.5	-5.3	2.7	9.3	15.2	4.7	15.8
Contribution of net exports to GDP growth (percentage points)	-1.0	0.9	2.6	0.5	1.1	-0.8	1.1	-0.5
	GDP structure in current prices							
Domestic demand	105.9	106.4	103.7	103.4	102.6	102.0	100.3	100.8
Consumption	80.7	81.6	82.9	84.8	83.8	81.9	81.1	80.2
Capital formation	25.3	24.8	20.8	18.6	18.7	20.1	19.2	20.5
Net exports	-5.9	-6.4	-3.7	-3.4	-2.6	-2.0	-0.3	-0.8

Source: GUS data.

The growth rate of gross investment outlays in 2006 was markedly higher than a year before, while the growth in inventories was lower. The acceleration in investment outlays was in part the result of the growing inflow of EU structural funds.

Due to much faster growth of disposable income than in the previous year, the growth rate of private consumption in 2006 was considerably faster than one year before. Improving labour market situation contributed to a rise of 7.2% in income from paid employment in 2006 (in current prices, data on income according to NBP estimates) and the indexation of old-age and disability pensions led to a rise of 4.7% in social benefits. The consumption growth in 2006 was in a significant degree financed by the rising income of private businesses and income from property. In turn, the payments to farmers under the Common Agricultural Policy in 2006 were close to the 2005 levels.

The year 2006 was the fifth consecutive year of growth in exports and imports. The rate of growth in foreign trade turnover was significantly higher than in the preceding year and was markedly above the GDP growth. In the conditions of quickly rising domestic demand, imports in 2006 were rising faster than exports, which had the effect of a negative contribution of net exports to real GDP growth. In consequence, there was a slight rise in the current account deficit (in relation to GDP, from 1.7% in 2005 to 2.3% in 2006).

Appendix 2. Prices of consumer goods and services

In 2006 the annual CPI remained at a low level. In the first half of the year the annual inflation ran below the level of 1% (ranging from 0.6% in January to 0.8% in June), which was driven by drops (in annual terms) in the prices of food and other goods and services coupled with a high growth rate of regulated prices. In the second half of 2006, the annual inflation was close to the lower tolerance limit for deviations from the inflation target (ranging from 1.1% in July to 1.4% in December), which was driven by growing prices of food and other goods and services, combined with decelerating growth of regulated prices. The average annual inflation rate, which amounted to 1.0%, suggests low inflation in the whole of 2006.

The index of **prices of food and non-alcoholic beverages** in 2006 showed fluctuations and ranged from -0.9% y/y in January to 1.8% y/y in December (the highest growth in those prices was recorded in September: 2.4% y/y). The first half of 2006 was marked by a persistent downward tendency in the 12-month index of prices, mainly driven by drops in meat prices¹¹. This was coupled with persistently low growth rate in other foods (except for vegetables). The second half of 2006 was marked by a reversal in food price developments. In the summer months, mainly as a result of declining supply of crop output caused by drought, the growth rate of food prices dramatically accelerated, reaching the level of 2.4% y/y in September. The reversal in the prior downward trend was mainly impacted by increases in the prices of bread and cereals and vegetables; yet, the growth rate in other groups marked a slight increase. At the same time, the mitigating effect of low meat prices was gradually fading. Although in 2006 Q4 the growth rate in food prices was slightly decreasing, it remained at a relatively high level.

¹¹ The decline in meat prices (in annual terms) was driven by a high supply on this market coupled with a limited demand for meat resulting from bird flu cases being reported in Poland and the ban on Polish food imports in Russia (introduced in November 2005) and in Ukraine (introduced in March 2006).

Table 2

Changes (y/y) in main groups of prices of consumer goods and services in 2005–2006

	CPI	Food and non- alcoholic beverages	Regulated prices	<i>of which: fuels</i>	Other goods and services	<i>of which:</i>	
						<i>non-food products</i>	<i>services</i>
CPI weight structure							
2005	100.00	26.94	26.62	<i>3.84</i>	46.44	<i>26.81</i>	<i>19.63</i>
2006	100.00	27.18	27.52	<i>3.89</i>	45.30	<i>26.69</i>	<i>18.61</i>
Change in relation to the corresponding period of the previous year in %							
Jan 2005	3.7	6.7	3.4	<i>9.9</i>	2.3	<i>1.6</i>	<i>3.2</i>
Feb	3.6	5.9	3.4	<i>10.2</i>	2.3	<i>1.7</i>	<i>3.2</i>
Mar	3.4	5.3	3.3	<i>9.1</i>	2.4	<i>1.5</i>	<i>3.6</i>
Apr	3.0	3.7	3.7	<i>11.9</i>	2.3	<i>1.4</i>	<i>3.5</i>
May	2.5	4.3	3.0	<i>6.8</i>	1.2	<i>-0.4</i>	<i>3.3</i>
Jun	1.4	0.4	3.3	<i>8.4</i>	0.9	<i>-0.6</i>	<i>3.0</i>
Jul	1.3	-0.8	4.2	<i>13.1</i>	0.8	<i>-0.7</i>	<i>2.9</i>
Aug	1.6	0.5	4.4	<i>14.7</i>	0.7	<i>-0.9</i>	<i>2.8</i>
Sep	1.8	1.0	4.7	<i>16.5</i>	0.6	<i>-1.0</i>	<i>2.9</i>
Oct	1.6	0.8	4.4	<i>12.8</i>	0.4	<i>-1.1</i>	<i>2.6</i>
Nov	1.0	-0.5	3.9	<i>9.6</i>	0.2	<i>-1.2</i>	<i>2.2</i>
Dec	0.7	-1.3	3.4	<i>6.4</i>	0.2	<i>-1.2</i>	<i>2.2</i>
Jan 2006	0.6	-0.9	3.6	<i>6.4</i>	-0.4	<i>-1.6</i>	<i>1.4</i>
Feb	0.7	-0.2	3.3	<i>4.6</i>	-0.4	<i>-1.6</i>	<i>1.4</i>
Mar	0.4	-0.7	3.2	<i>3.4</i>	-0.6	<i>-1.6</i>	<i>0.8</i>
Apr	0.7	-0.6	4.3	<i>4.4</i>	-0.6	<i>-1.7</i>	<i>0.9</i>
May	0.9	-0.2	4.5	<i>7.1</i>	-0.6	<i>-1.6</i>	<i>0.8</i>
Jun	0.8	-0.5	4.3	<i>5.9</i>	-0.6	<i>-1.6</i>	<i>1.0</i>
Jul	1.1	0.2	3.8	<i>4.6</i>	0.0	<i>-1.7</i>	<i>2.5</i>
Aug	1.6	1.8	3.9	<i>4.9</i>	0.1	<i>-1.7</i>	<i>2.7</i>
Sep	1.6	2.4	3.0	<i>-1.1</i>	0.2	<i>-1.5</i>	<i>2.5</i>
Oct	1.2	2.2	1.9	<i>-6.2</i>	0.2	<i>-1.3</i>	<i>2.4</i>
Nov	1.4	2.2	1.8	<i>-7.1</i>	0.7	<i>-1.2</i>	<i>3.5</i>
Dec	1.4	1.8	1.9	<i>-6.3</i>	0.8	<i>-1.1</i>	<i>3.6</i>
Jan-Dec 2005	2.1	2.1	3.7	<i>10.8</i>	1.2	<i>-0.1</i>	<i>2.9</i>
Jan-Dec 2006	1.0	0.6	3.3	<i>1.5</i>	-0.1	<i>-1.5</i>	<i>2.0</i>

Source: NBP calculations based on GUS data.

Regulated price index¹² in 2006 underwent fluctuations and ranged from 3.6% y/y in January to 1.9% y/y in December (the highest growth rate of regulated prices was recorded in May: 4.5% y/y). In 2006 the annual growth rate of regulated prices was mainly determined by fluctuating growth rate of prices of fuel and natural gas. Other price groups in regulated prices were characterised by relatively stable growth rate. Hence, the annual price index of tobacco products, electricity, hot water and central heating in the whole of 2006 exceeded the regulated price index, with regulated transportation and communications curbing the rate of growth of regulated prices. Two periods may be distinguished in the developments of regulated prices in 2006. In the period January-September 2006 the annual regulated price index stayed at a high level, reaching its peak in May (4.5% y/y). This was driven by a rise in prices of natural gas in January (by 4.3% m/m) and April (by 10.0% m/m), causing the annual index of gas prices to reach the level of 13.9% and 26.6% respectively, as well as growing fuel prices brought about by hikes in crude oil and petrol prices in the world market. On the other hand, in the period October-December 2006 the annual growth rate of regulated prices was curbed mainly as a result of a drop in fuel prices (to -6.3% y/y in December) and limited increase in natural gas prices driven by the ending of the base effect in October 2006.

The index of **other consumer goods and services** in 2006 increased gradually from -0.4% y/y in January 2006 to +0.8% y/y in December 2006. This was mainly driven by an increase in the growth rate of prices of services to 3.6% y/y in December 2006 as compared with 1.4% in January 2006. Rising growth rate of prices of services was largely impacted by statistical effects connected with changes in the prices of Internet services¹³. The growth rate of prices of services excluding Internet services was lower and rose from 2.3% y/y in January 2006 to 2.5% y/y in December 2006. Drops in the prices of non-food products (-1.6% in January 2006 as compared with 1.1% in December 2006) were conducive to lowering the annual growth rate of prices of other goods and services. The main reason behind the decline in the prices of goods were persistent drops in the prices of clothes and footwear, electronic equipment, i.e. goods in

¹² Regulated prices include prices of goods and services whose developments are not fully shaped by market factors. This group encompasses goods whose retail price is mainly composed of excise tax (fuels, alcoholic beverages, tobacco products) and goods and services whose prices are largely impacted by the decisions of central and local government institutions (public administration services, certain transportation services) and market regulators (electricity, gas, communications).

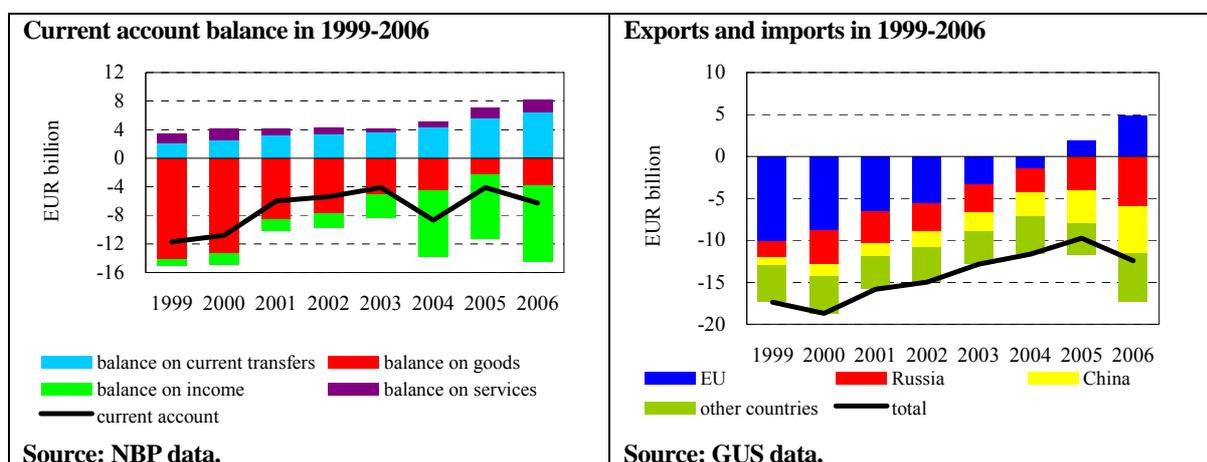
¹³ The annual growth rate of prices of Internet services (growth from -27.3% in January 2006 to +55.3% in December 2006) was impacted by strong statistical effects connected with a price promotion launched by one Internet provider, started in November 2005 (drop of 34.9% m/m) and ended in July 2006 (increase of 60.0% m/m).

considerable part imported from low cost countries. At the same time, the decline in the prices of non-food products was curbed by rising prices of heating fuel (by 5.5% y/y in December 2006 against 2.8% in January 2006) and rising growth rate of prices of materials for the maintenance and repair of the dwelling (from -0.7% y/y in January 2006 to +2.1% y/y in December 2006).

Appendix 3. Balance of payments

In 2005 the current account deficit of the balance of payments increased by over EUR 2.1 billion as compared with the previous year. The negative current account balance amounted to EUR 6.3 billion, and the relation of the current account deficit to GDP grew from 1.7% in 2005 to 2.3% in 2006. The deterioration in the current account balance was driven by the deepening trade deficit in goods and income. Similarly to 2005, the rising surplus in current transfers and services was conducive to the lowering of the current account deficit.

Figure 11



In 2006 the growth rate of both exports and imports grew as a result of significant acceleration in demand in the Polish economy and its environment¹⁴. The growth rate of imports hit the highest level in the last six years and for the first time since 1999 exceeded the growth rate of exports¹⁵. Such level of imports was driven by both a strong growth rate of the volume of imports and import prices. The growth of transaction prices in imports¹⁶ exceeding those in exports was conducive to deteriorating terms of trade in Polish foreign trade¹⁷. Acceleration in the growth of imports was

¹⁴ In 2006 the volume of exports stepped up by 15.9% y/y (as compared with an increase of 10.6% in 2005), whereas the volume of imports increased by 15.8% y/y (5.2%); in 2006 the value of imports grew by 23.2% (against 13.8% in 2005) whereas the value of exports grew by 22.6% (19.6%).

¹⁵ According to GUS data, the negative balance in Poland's foreign trade amounted to EUR 12.5 billion against EUR 9.7 billion in 2005.

¹⁶ Import transaction prices expressed in EUR increased in 2006 by 6.4% (against 8.1% in 2005) whereas the export prices increased by 5.8% (8.2%).

¹⁷ In 2006 the terms of trade index was 99.5 as compared with 100.1 in the previous year

driven by high growth in investment and consumer demand in Poland, rising demand in the export sector and further increase in crude oil prices in international markets¹⁸.

Analysis of changes in the foreign trade balance broken down into Poland's major trading partners shows that deepening of deficit in 2006 was primarily driven by continued increase in the negative trade balance with non-EU countries, especially with Russia and China. This was coupled with a further increase in the positive trade balance with EU member states¹⁹, which was the result of accelerating growth rate of exports to the euro area as compared with 2005. The highest growth in domestic demand in the euro area since 2000 constituted a driving force behind strong acceleration in the import demand in that region. Rising demand in the export sector of the euro area²⁰ was mainly reflected in increased imports of intermediate products. A considerable share of this group of products in Polish exports and intensifying links of the Polish economy with the euro area resulted in increased imports from Poland in 2006, which appeared to be one of the highest among major trading partners of the euro area²¹.

In 2006 the nominal zloty exchange rate continued to strengthen – the average annual exchange rate of the zloty was 3.2% stronger against the euro, and 4.1% stronger against the US dollar. In the period 2006 Q1 – 2006 Q4 the real effective exchange rate of the zloty deflated with unit labour costs²² in manufacturing appreciated less than the nominal rate i.e. by 0.6% as compared with 3.6% for the nominal effective exchange rate of the zloty²³. The real appreciation of the effective exchange of the zloty deflated with CPI²⁴ in 2006 reached 2.7%.

¹⁸ The prices of imports of crude oil to Poland expressed in EUR stepped up in 2006 by 24.8% as compared with the previous year (against an increase of 42.2% in 2005)

¹⁹ This was driven by both lowering deficit on trade with the euro area countries and improved positive trade balance with the "old" EU member states and new EU member states.

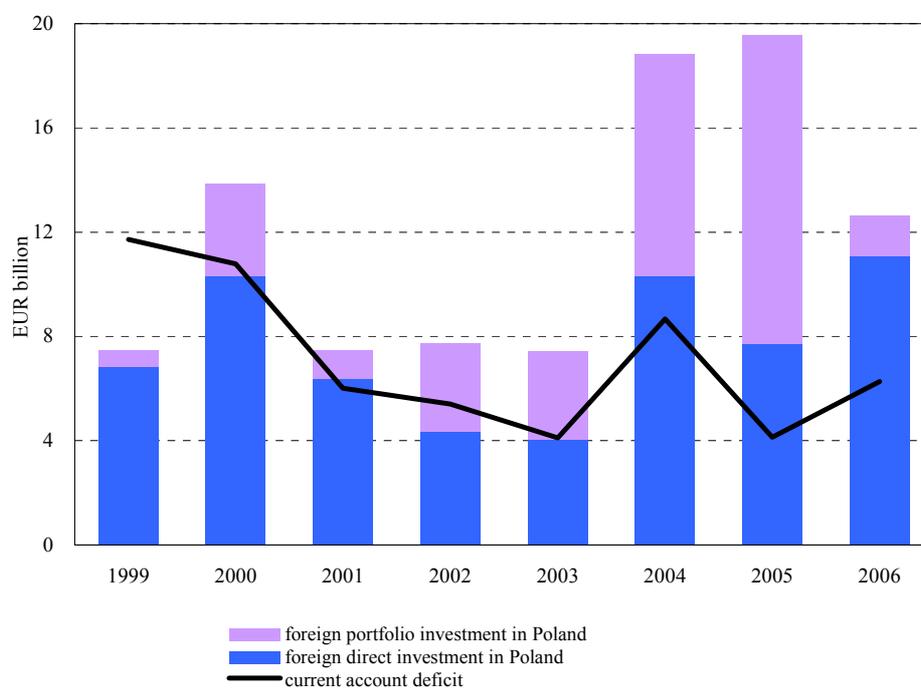
²⁰ The volume of euro area exports in 2006 increased by 8.3% (as compared with an increase of 4.2% in 2005).

²¹ The rate of growth of euro area imports from Poland reached in 2006 26%, as compared with an increase of 13% recorded in the total euro area imports. See: Euro-indicators, news release 42/2007 of 22 March 2007, Eurostat.

²² An appropriate measure to assess changes in the competitive position of producers in international markets is an index reflecting production costs. Moreover, most of trade has so far involved the products of the manufacturing industry. For these reasons, the real exchange rate deflated with unit labour costs in manufacturing is the appropriate indicator of the international competitive position of producers. Calculations are based on estimates for 2006 Q4.

²³ Year over year changes based on monthly data.

²⁴ Concerns the average real effective exchange rate deflated with CPI calculated on the basis of monthly data.

Figure 12**Current account deficit versus foreign investment inflows in 1999-2006**

Source: NBP data.

In 2006 most of major financial indicators reflecting the external equilibrium of the Polish economy marked a slight deterioration as compared with the year 2005. Yet, they remained at a safe level. Current account deficit was entirely financed by the inflow of foreign capital in the form of foreign direct investment. The relation of foreign debt servicing to the value of exports of goods and services declined.

Table 3**Main warning indicators**

Warning indicator	2004	2005	2006
Current account balance/GDP	-4.2%	-1.7%	-2.3%
Current account balance + capital balance/GDP	-3.8%	-1.4%	-1.7%
Trade balance/GDP	-2.2%	-0.9%	-1.5%
Direct investment/ current account balance	111.4%	126.2%	123.9%
(Current account balance + capital balance + direct investment)/GDP	0.9%	0.8%	1.2%
Foreign debt servicing/ exports of goods and services	35.4%	32.3%	29.8%
Foreign reserves expressed in terms of monthly imports of goods and services	4.0	4.7	4.0

Source: NBP calculations

Appendix 4. Money supply

The year 2006 saw continued growth of households' indebtedness with monetary financial institutions (MFI²⁵) which was driven by steady improvement in the income of households. The upward trend was recorded mainly in housing loans denominated in foreign currency. The second half of the year was marked by a gradual shift in borrowers' inclination towards zloty denominated loans.

Despite a considerable increase in housing loans, the demand for consumer loans did not decline. This was possible thanks to the extension of the period of loans granted to households. This resulted also from a marked drop in interest rate on housing loans and an increase in the household disposable income.

After several years of stagnation, there was a marked revival in the corporate loan market. Improving investment conditions spurred growing interest among economic entities in zloty denominated loans, mainly medium- and long-term ones.

The year 2006 saw a continued trend, noted a year before, of regular reallocation of household financial assets in non-banking saving. This was mainly driven by low yields on funds deposited in bank accounts.

Rapid development of bank lending for household and corporate sectors found its reflection in the developments of monetary aggregates. At the end of 2006, the growth rate of M3 exceeded 15% y/y.

Loans to households

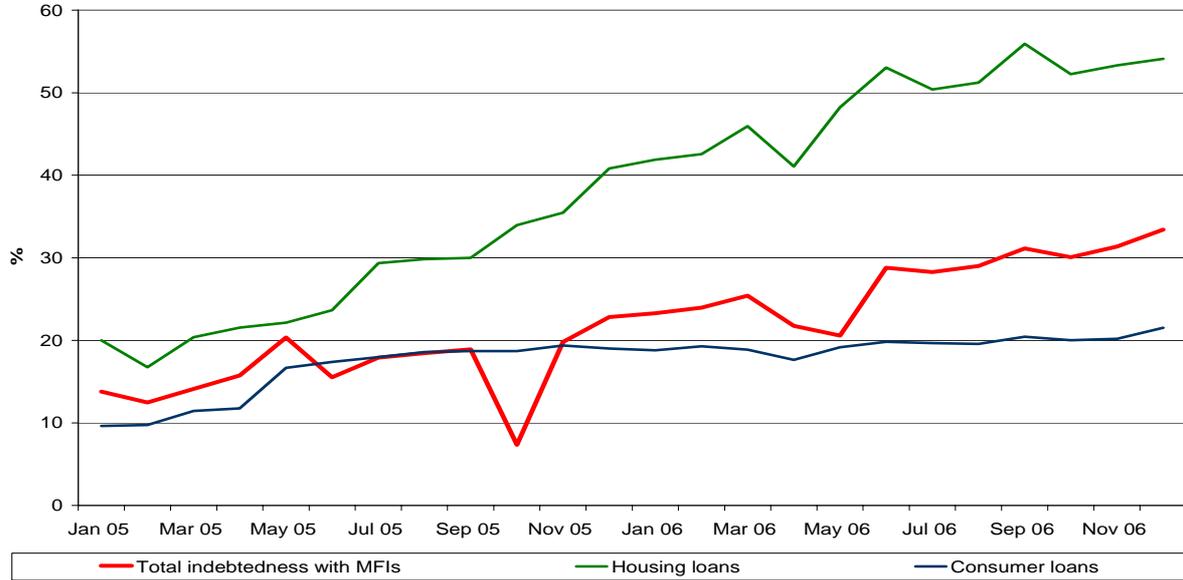
The total increase in households' indebtedness with monetary financial institutions in 2006 reached PLN 47.2 billion (33.4%) as compared with PLN 26.3 billion (22.8%) a year before. At the end of December 2006 the debt totalled PLN 188.5 billion.

Households used loans mainly to finance housing expenses. Their indebtedness with banks resulting from housing loans increased by PLN 27.3 billion, and its growth rate in the previous year increased by 13.3 percentage points to reach 54.1%.

²⁵ Monetary financial institutions sector includes, apart from banks operating in Poland and branches of credit institutions and branches of foreign banks which are resident in Poland, also Credit Unions (*Spółdzielcze Kasy Oszczędnościowo-Kredytowe – SKOK*) and money market funds. The MIF sector does not include banking institutions which have been declared bankrupt or banking institutions either in liquidation or in organisation. In order to ensure comparability, the data for December 2004 were supplemented with SKOK data.

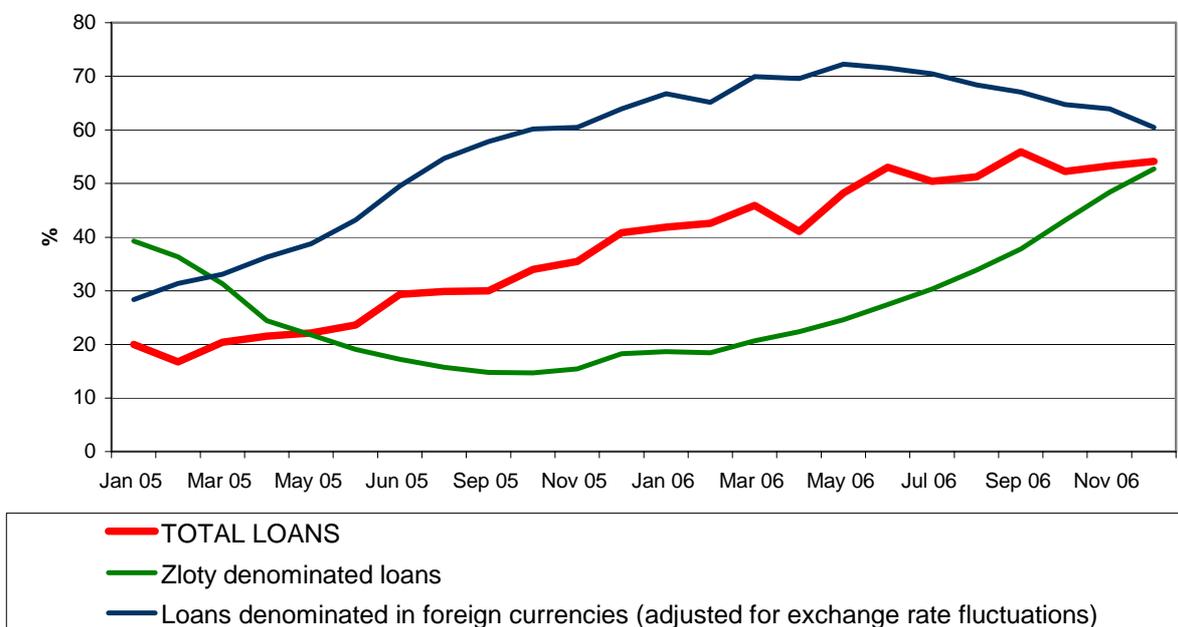
Figure 13

Households' indebtedness, annual growth rate



Source: NBP data

Foreign currency denominated loans accounted for the major part of increase in the bank housing loans. In 2006 their value increased by PLN 17.6 billion (54.9%) as compared with an increase of PLN 9.7 billion (52.8%) in zloty denominated loans. As a result of exchange rate fluctuations w 2006 the fall in the value of foreign currency debt resulting from housing loans amounted to PLN 1.8 billion. This factor marked its significance especially in the second half of the year. In the period June-December 2006 the rate of growth of housing loans denominated in foreign currency decreased from 71.6% to 60.5% y/y (and from 69.8% to 54.9% r/r based on raw data).

Figure 14**Housing loans to households, annual growth rate**

Source: NBP data

A slow-down in the growth rate of foreign currency debt was accompanied by a markedly increased interest among households in zloty denominated housing loans. Their growth rate in 2006 stepped up by 34.5 percentage points reaching 52.8% y/y.

High demand for housing loans did not drive down demand for consumer loans²⁶. Their value increased in 2006 by PLN 13.7 billion (21.5%). Despite high interest rate, exceeding on average 14%, the growth rate of consumer loans remained stable at the level of approx. 20% y/y since mid-2005.

Loans to enterprises

The annual growth rate of corporate debt in monetary financial institutions rose in 2006 by 11.1 percentage points reaching 14.1%. The total debt of enterprises at the end of December 2006 amounted to PLN 140.2 billion – PLN 17.3 billion more than at the end of 2005.

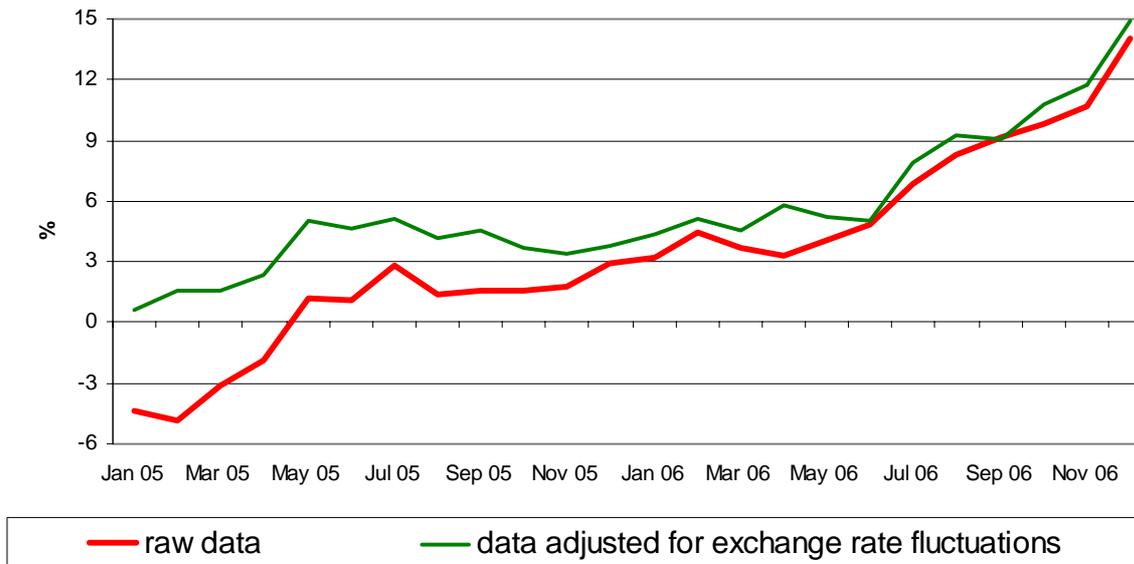
Bank loans for pro-development projects – with repayment period exceeding 5 years – accounted for the largest share in the total debt increase. The end of 2006 saw a marked surge in interest in medium-term loans – from 1 to 5 years inclusive. At the end of December 2006 they

²⁶ They include overdraft facilities, credit card facilities, hire purchase facilities and other – mainly car loans, cash and seasonal facilities.

recorded the highest growth (17.7% y/y as compared with 8.2% y/y a year before). Long-term loans increased in this period by 15.1% y/y (6.4% y/y in 2005), and short-term loans – up to one year including current accounts by 10.2% y/y (a year before they recorded a drop of 4.7% y/y).

Figure 15

Corporate indebtedness, annual growth rate



Source: NBP data

In order to finance both day-to-day operations as well as investment projects enterprises used mainly zloty denominated loans. The growth rate of zloty denominated loans increased steadily starting from 2006 Q1, to reach at the end of 2006 the level of 15.7% y/y (11.5 percentage points higher than a year before). After a fall in the value of foreign currency denominated loans in 2005 by PLN 0.8 billion (2.7%), their value in 2006 increased by PLN 2.4 billion (8.5%). The share of foreign currency denominated loans was rather stable and remained at the level of approx. 22%

As shown by the balance of payments data, domestic sources of corporate financing were largely supplemented by foreign debt which increased in 2006 by PLN 31 billion (16.7%) up to PLN 216.7 billion, mainly as a result of growing share of non-trade loans from direct investors (growth of PLN 18.3 billion, i.e. by 35.8%). The value of trade loans increased in this period by PLN 6 billion (10.9%). On the other hand, the value of debt securities held by foreign portfolio investors fell by PLN 4.9 billion (32.1%).

Deposits of households

2006 saw continuation of the trend of further reallocation of households' financial assets to non-banking forms of saving. Accounts held by individuals in monetary financial institutions gradually lost their significance as a form of investment which resulted primarily from their low yield. As a result, the reduction of savings in fixed-term deposit accounts of households²⁷ in 2006 amounted to PLN 4.1 million (2.7%).

Contrary to fixed-term deposits, monetary financial institutions recorded a high increase – by PLN 23.5 billion – in households' current deposits. It was almost two times bigger than in 2005. The annual growth rate of current deposits increased in 2006 by 12.7 percentage points to 33.1%.

Bank deposits continue to be the main form of household savings. Yet, their share in the sector's financial assets fell by 5.7 percentage points to 45.9%. At the same time, the share of assets of investment funds increased by 4.5 percentage points to 18.2%. In 2006 the value of households' financial assets increased by the total of PLN 93.7 billion (22.2%). Investment funds' assets accounted for almost 40% of the increase.

Table 4

Financial assets of households

SPECIFICATION	Dec 05	01-03-2006	Jun 06	Sep 06	Dec 06
1. Bank deposits	218.4	222.1	226.3	229.6	237.2
2. Shares ¹	25.8	30.8	32.1	38.1	45.3
3. Investment fund assets ²	57.9	68.8	72.9	80.1	94.0
4. Life assurance undertaking ^{3,4}	41.8	44.2	46.8	49.3	53.1
5. Value of deposits with Credit Unions (SKOK)	5.0	5.2	5.3	5.4	5.6
6. Treasury bonds ⁵	15.2	14.5	13.3	12.6	12.1
7. Treasury bills ⁶	1.6	1.2	0.8	0.9	0.8
8. Notes and coin in circulation (excluding vault cash) ⁷	57.2	58.4	64.2	66.2	68.8
9. Bank bonds	0.2	0.1	0.1	0.1	0.1
TOTAL (items 1 - 9)	423.1	445.2	461.7	482.2	516.8

1. Shares and allotment certificates deposited in accounts in brokerage offices and houses and in trust companies.
- for reporting periods: for December 2005 according to GUS data, for June and December 2005 according to data of GUS and Polish Financial Supervision Authority, for remaining periods NBP estimates.
2. Does not account for data from funds known to be oriented at legal entities only.
3. Figures represent value of technical provisions in life assurance (including provisions where investment risk is borne by the policy holder).
4. Own estimates.
5. According to data of Ministry of Finance.
6. According to data of Domestic Operations Department.
7. It was assumed that the whole cash in the market was held by households.

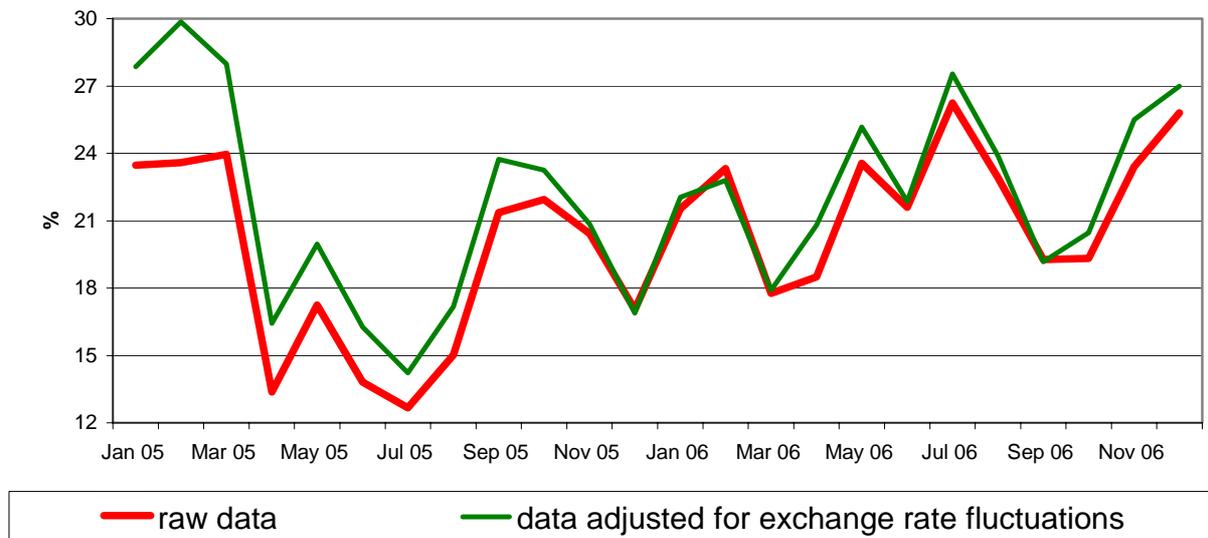
²⁷ Along with deposits of more than 2 years and deposits with notice period exceeding 3 months – not classified as M3 aggregate.

Deposits of enterprises

The annual growth rate of corporate deposits²⁸ increased in 2006 by 8.8 percentage points to 25.8%, reaching at the end of December 2006 PLN 126.5 billion, thus exceeding by PLN 26 billion (25.8%) the level recorded at the end of 2005. A year before the increase in the sector's deposits was lower by more than PLN 11 billion.

Figure 16

Deposits of enterprises, annual growth rate



Source: NBP data

High level of monetary assets in the accounts of enterprises reflects their good liquidity position. As suggested by the NBP's survey studies²⁵, at the end of December 2006 the number of respondents giving a positive assessment of the level of financial liquidity grew considerably. In this period 74.9% of the surveyed enterprises did not report any liquidity problems – 5.6 percentage points more than in the corresponding period of 2005.

Monetary aggregates

Rapid development of bank lending to households and corporate sector found its reflection in the developments of monetary aggregates in 2006. The value of M3 aggregate grew in this period by PLN 64.5 billion (15.6%) to PLN 477 billion – the increase was PLN 25.5 billion higher than in

²⁸ Including deposits of more than 2 years and deposits with notice period exceeding 3 months – not classified as M3 aggregate.

²⁵ THE CONDITION OF NON-FINANCIAL ENTERPRISES IN THE FIRST QUARTER OF 2007, NBP – the Macroeconomic and Structural Analyses Department of the NBP (available at www.nbp.pl).

2005. After the period of stabilised growth of M3 aggregate at the level slightly exceeding 10% y/y, the second half of 2006 was marked by a clear increase of this index. In the whole period its value rose by 5.2 percentage points to 15.6 % y/y. The fastest growth was recorded by the most liquid components of M1 aggregate (currency in circulation and current deposits). Their annual growth rate stepped up in comparison with the end of 2005 by 7 percentage points to 25.3%. The growth rate of less liquid components of the broad money (M3–M1) also increased by 2.4 percentage points to 5.8% y/y.

Among components of the narrow money M1, a nominal growth in currency in circulation recorded an increase of PLN 11.6 billion as compared with an increase of PLN 6.4 billion, which was almost two times higher than in 2005. This was mainly brought about by growing income of individuals driving higher transaction demand for cash.

Table 5

Monetary aggregates and their components

SPECIFICATION	level		growth	
	Dec 2006	Dec 2005	PLN billion	%
1. Currency in circulation (excluding cash at banks)	68.8	57.2	11.6	20.3
2. Deposits and other liabilities	191.8	150.9	41.0	27.2
- Households	223.1	203.5	19.6	9.6
- Non-monetary financial institutions	19.2	15.2	4.1	26.7
- Enterprises	125.2	99.5	25.7	25.8
- Non-commercial institutions serving households	10.4	9.7	0.7	7.5
- Local governments	14.6	13.7	0.9	6.3
- Social security funds	4.7	3.8	0.9	23.4
3. MONEY M1(1+2)	260.6	208.0	52.6	25.3
4. MONEY M2	466.0	402.5	63.4	15.8
5. MONEY M3	477.0	412.5	64.5	15.6

Source: NBP data

Table 6

MFI assets from domestic sectors

SPECIFICATION	level		growth	
	Dec 2006	Dec 2005	PLN billion	%
Loans, facilities and other receivables	361.0	292.9	68.1	23.3
- Households	188.5	141.3	47.2	33.4
- Non-monetary financial institutions	14.0	11.4	2.6	23.0
- Enterprises	140.2	122.9	17.3	14.1
- Non-commercial institutions serving households	1.0	0.8	0.2	19.4
- Local governments	14.8	11.9	2.8	23.6
- Social security funds	2.6	4.6	-2.0	-43.0

Source: NBP data

Appendix 5. Inflation projections of the NBP

The *Inflation Report* prepared quarterly by the MPC, together with the attached inflation projection prepared by the NBP's economists, is a very important instrument of communication with market participants. The *Inflation Report* is a document presenting the Monetary Policy Council's assessment of the current and future macroeconomic developments influencing inflation.

In view of the need to account for delays in the transmission mechanism of monetary policy impulses, in pursuing its forward-looking policy, the MPC made use of, among other things, inflation projections. At the same time, the inclusion of projection results and the assessment of the balance of factors influencing future inflation into *Inflation Reports* warranted the transparency of the implemented monetary policy.

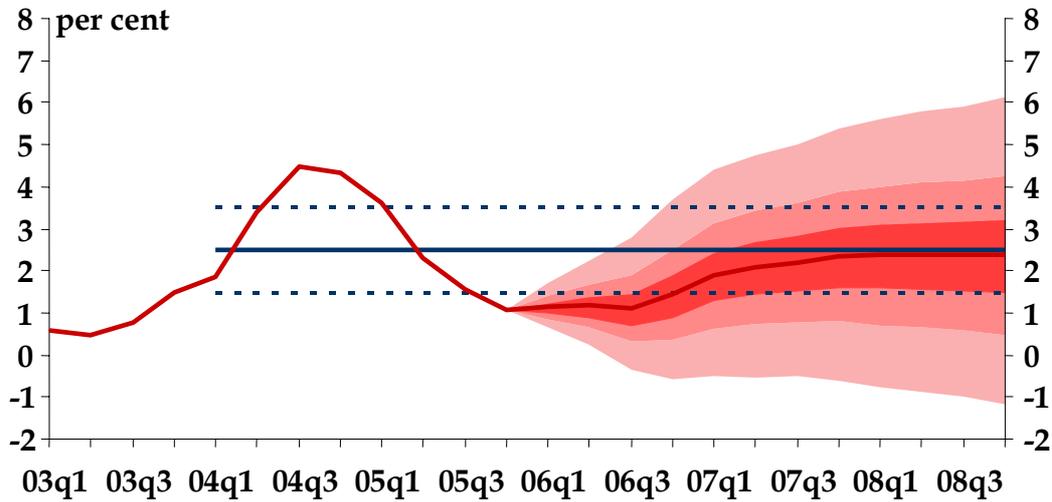
Since August 2004 *Inflation Reports* have included the results of inflation projections (and since May 2005 – also GDP projection results). The projection presented in Chapter 4 of the Report is prepared with the use of an econometric model of the Polish economy, called ECMOD³⁰, by a team of NBP economists. The projection horizon encompasses the year of its preparation and two subsequent calendar years. The inflation projection is prepared under the assumption of unchanged interest rates. The inflation projection is one of the inputs to the Monetary Policy Council's decision-making process on NBP interest rates.

The below presented fan charts depict the results of projections published in 2006. Fan charts reflect the main sources of uncertainty only (e.g. uncertainty connected with price food developments). The types of uncertainty not accounted for in the fan chart are discussed in detail in projection descriptions in *Inflation Reports*.

³⁰ Description of the model was published in: Fic T., Kolasa M., Kot A., Murawski K., Rubaszek M., Tarnicka M., "Model gospodarki polskiej ECMOD" [ECMOD – a model of the Polish economy], *Materiały i Studia*, NBP, No. 194, May 2005. Abbreviated version of the model is available at the NBP website at: http://www.nbp.pl/Publikacje/o_polityce_pienieznej/raport_o_inflacji/ecmod_kwiecien.pdf

Figure 17

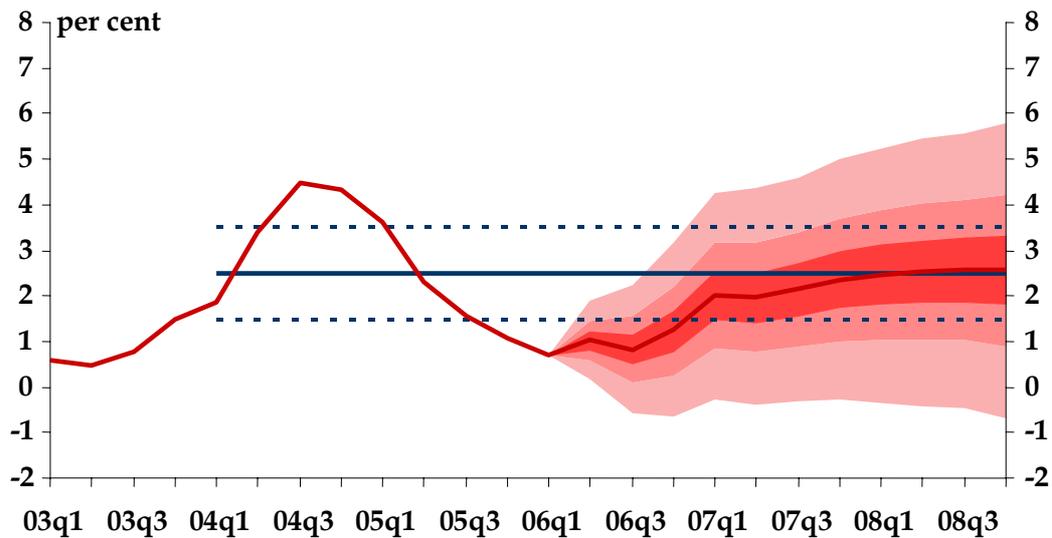
Central inflation projection, fan chart of future inflation path and inflation target of the MPC
 – January 2006



Source: *Inflation Report*, January 2006, NBP.

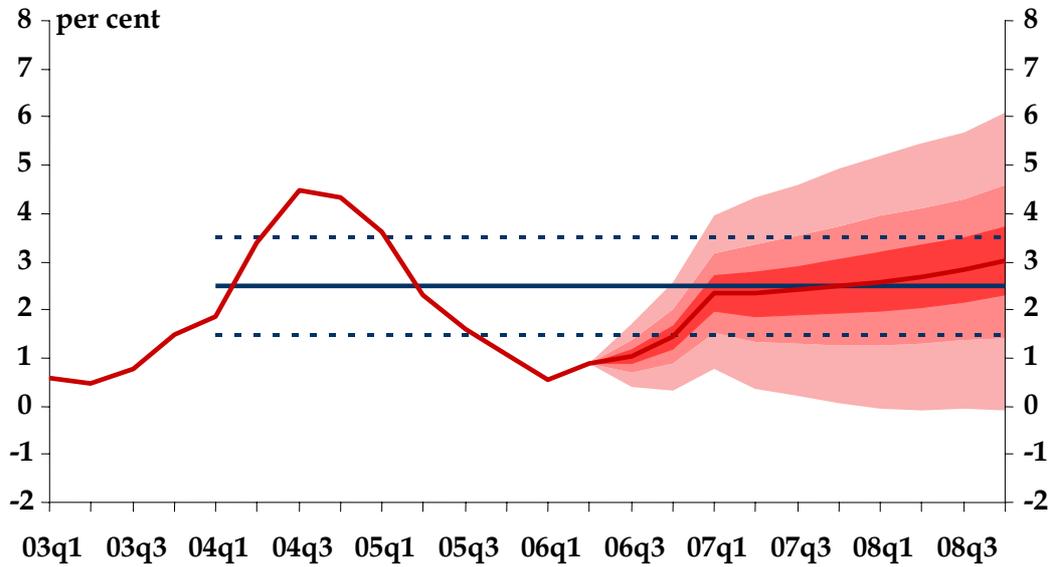
Figure 18

Central inflation projection, fan chart of future inflation path and inflation target of the MPC
 – April 2006



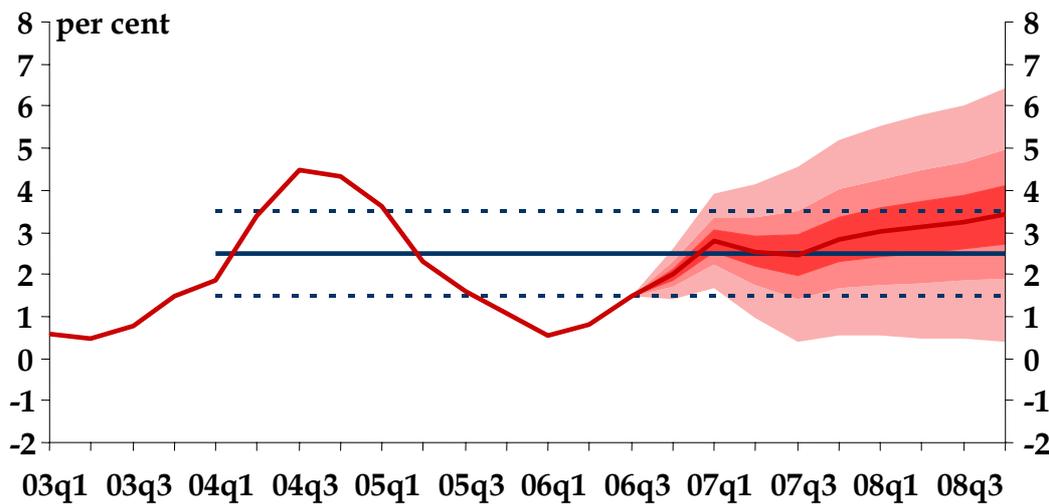
Source: *Inflation Report*, April 2006, NBP.

Figure 19
Central inflation projection, fan chart of future inflation path and inflation target of the MPC
– July 2006



Source: *Inflation Report*, July 2006, NBP.

Figure 20
Central inflation projection, fan chart of future inflation path and inflation target of the MPC
– October 2006



Source: *Inflation Report*, October 2006, 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 proportionally to the length of the time horizon.

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

For example, the chart which refers to the July inflation projection shows that the probability of inflation in 2007 Q1 staying within the tolerance band around the inflation target amounts to approx. 70%, the probability of higher inflation is equal to approx. 10%, whereas the probability of lower inflation could be assessed at approx. 20%. For 2008 Q1 these probabilities correspond to 47%, 28% and 25%, respectively. The inflation projection is characterised by slight asymmetry, which reflects approximately equal probabilities of inflation running above the central path as well as below the central path.

Fan charts depict the uncertainty associated with assumptions exogenous to the projection model and connected with inaccuracy of the model’s statistical mapping of the relations holding between macroeconomic variables. Fan charts, however, do not account for all kinds of uncertainty, such as the uncertainty related to possible changes in the structure of the Polish economy, the approximate nature of any replication of economic reality by a model or the potential instability of estimated relationships in time. A detailed discussion of the sources of uncertainty not accounted for in the fan chart can be found in *Inflation Reports*.

Appendix 6. Voting records of Monetary Policy Council members on motions and resolutions in 2006

date	subject matter of motion or resolution	MPC decision	voting of Council members
31 January 2006	Resolution on the level of the reference rate, lombard rate, deposit rate and rediscount rate of the National Bank of Poland	All interest rates reduced by 0.25 percentage point	<p>For: J.Czekaj S.Nieckarz S.Owsiak M.Pietrewicz A.Sławiński H.Wasilewska-Trenkner A.Wojtyna</p> <p>Against: L.Balcerowicz D.Filar M.Noga</p>
28 February 2006	Resolution on the level of the reference rate, lombard rate, deposit rate and rediscount rate of the National Bank of Poland	All interest rates reduced by 0.25 percentage point	<p>For: J.Czekaj S.Nieckarz S.Owsiak M.Pietrewicz A.Sławiński A.Wojtyna</p> <p>Against: L.Balcerowicz D.Filar M.Noga H.Wasilewska-Trenkner</p>

25 April 2006	Resolution on approving the Annual Financial Report of the National Bank of Poland prepared as of 31 December 2005		For: L.Balcerowicz J.Czekaj D.Filar S.Nieckarz M.Noga S.Owsiak M.Pietrewicz A.Sławiński H.Wasilewska-Trenkner A.Wojtyna
30 May 2006	Resolution on approving the Report on Monetary Policy Implementation in 2005		For: L.Balcerowicz J.Czekaj D.Filar S.Nieckarz M.Noga S.Owsiak M.Pietrewicz A.Sławiński H.Wasilewska-Trenkner A.Wojtyna
30 May 2006	Resolution on approving the Report on the Operations of the National Bank of Poland in 2005		For: L.Balcerowicz J.Czekaj D.Filar S.Nieckarz M.Noga S.Owsiak M.Pietrewicz A.Sławiński H.Wasilewska-Trenkner A.Wojtyna

30 May 2006	Resolution on the assessment of the activities of the NBP Management Board as regards the monetary policy implementation in 2005		For: L.Balcerowicz J.Czekaj D.Filar S.Nieckarz M.Noga S.Owsiak M.Pietrewicz A.Sławiński H.Wasilewska-Trenkner A.Wojtyna
27 September 2006	Resolution on establishing the upper limit for liabilities incurred by the National Bank of Poland by way of loans from foreign banking and financial institutions		For: L.Balcerowicz J.Czekaj D.Filar S.Nieckarz M.Noga S.Owsiak M.Pietrewicz A.Sławiński H.Wasilewska-Trenkner A.Wojtyna
27 September 2006	Resolution on establishing the monetary policy guidelines for 2007		For: L.Balcerowicz J.Czekaj D.Filar S.Nieckarz M.Noga S.Owsiak M.Pietrewicz A.Sławiński H.Wasilewska-Trenkner A.Wojtyna

25 October 2006	Motion to raise interest rates by 0.25 percentage point	Motion did not receive a majority vote	<p>For: L.Balcerowicz D.Filar M.Noga H.Wasilewska-Trenkner</p> <p>Against: J.Czekaj S.Nieckarz S.Owsiak M.Pietrewicz A.Sławiński A.Wojtyna</p>
29 November 2006	Motion to raise interest rates by 0.25 percentage point	Motion did not receive a majority vote	<p>For: L.Balcerowicz D.Filar M.Noga H.Wasilewska-Trenkner</p> <p>Against: J.Czekaj S.Nieckarz S.Owsiak M.Pietrewicz A.Sławiński A.Wojtyna</p>
19 December 2006	Resolution on creating and unwinding provisions against the FX risk of the zloty against foreign currencies at the National Bank of Poland		<p>For: L.Balcerowicz D.Filar S.Nieckarz M.Noga S.Owsiak M.Pietrewicz A.Sławiński H.Wasilewska-Trenkner A.Wojtyna</p> <p><i>J.Czekaj was absent from the meeting.</i></p>

19 December 2006	Resolution on creating and unwinding provisions against the FX risk of the zloty against foreign currencies at the National Bank of Poland		<p>For: L.Balcerowicz D.Filar S.Nieckarz M.Noga S.Owsiak M.Pietrewicz A.Sławiński H.Wasilewska-Trenkner A.Wojtyna</p> <p><i>J.Czekaj was absent from the meeting.</i></p>
19 December 2006	Motion to raise interest rates by 0.25 percentage point	Motion did not receive a majority vote	<p>For: L.Balcerowicz D.Filar M.Noga H.Wasilewska-Trenkner</p> <p>Against: S.Nieckarz S.Owsiak M.Pietrewicz A.Sławiński A.Wojtyna</p> <p><i>J.Czekaj was absent from the meeting.</i></p>